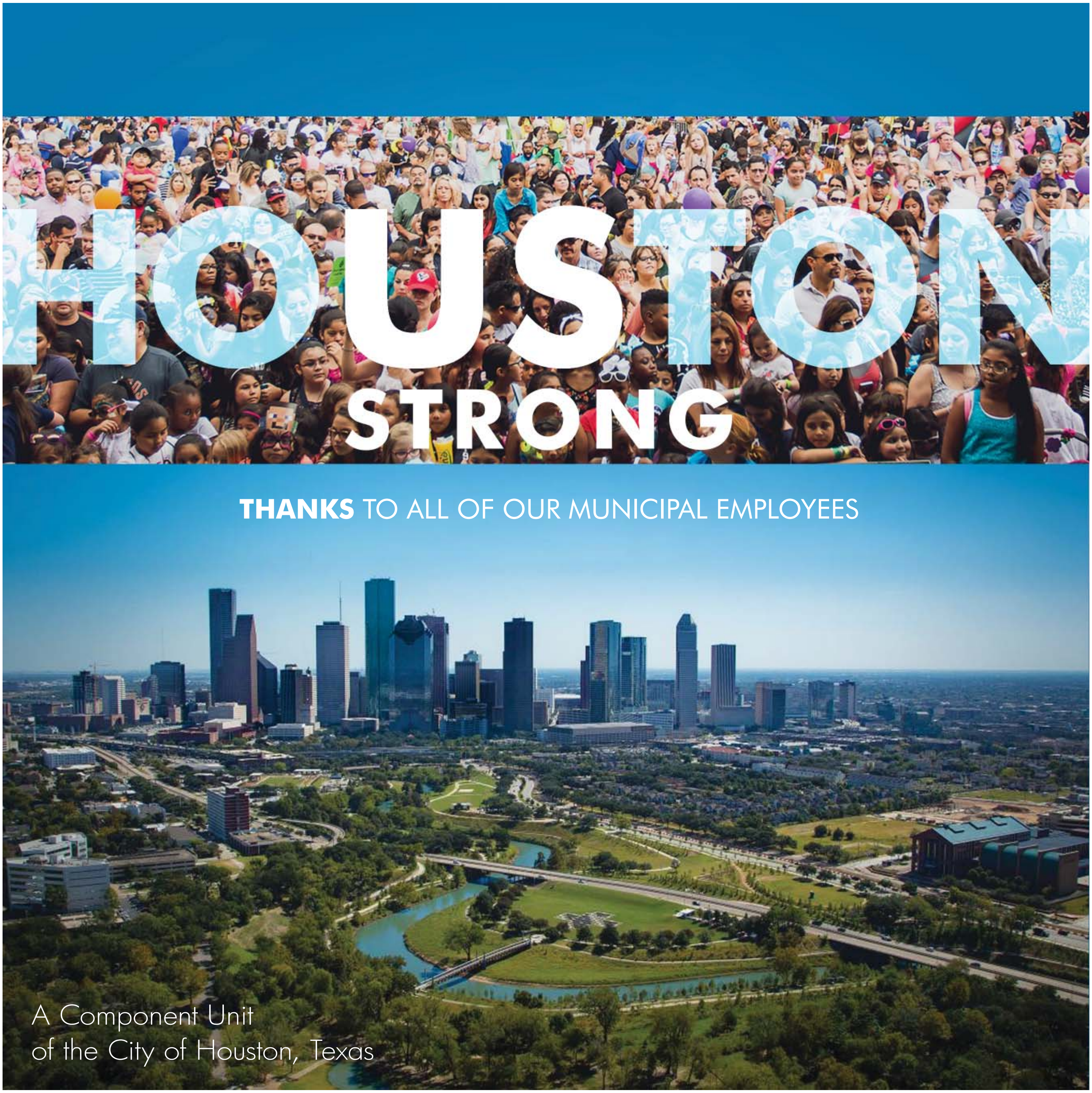
HMEPS

HOUSTON MUNICIPAL EMPLOYEES PENSION SYSTEM



Comprehensive Annual Financial Report

for the years ended June 30, 2017 and June 30, 2016

HOUSTON MUNICIPAL EMPLOYEES PENSION SYSTEM
A COMPONENT UNIT OF THE CITY OF HOUSTON, TEXAS

COMPREHENSIVE ANNUAL FINANCIAL REPORT
FOR THE YEARS ENDED JUNE 30, 2017 AND JUNE 30, 2016

STRENGTH IS IN OUR PEOPLE

PREPARED BY THE PENSION
ADMINISTRATION STAFF
DAVID L. LONG EXECUTIVE DIRECTOR

HOUSTON MUNICIPAL EMPLOYEES
PENSION SYSTEM
1201 LOUISIANA, SUITE 900,
HOUSTON, TEXAS 77002-5608
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HOUSTON
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OPTIMISM
STAY
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HOUSTON
STRENGTH
IS IN OUR
COMMITMENT

SECTION ONE

INTRODUCTION

HMEPS
HOUSTON MUNICIPAL EMPLOYEES PENSION SYSTEM

December 14, 2017

Tantri Emo, Interim Director
Finance Department
611 Walker, 10th Floor
Houston, Texas 77002

Dear Ms. Emo:

We are pleased to present the Comprehensive Annual Financial Report (CAFR) of the Houston Municipal Employees Pension System (the System), a Component Unit of the City of Houston, Texas (the City), for the fiscal years ended June 30, 2017 and June 30, 2016. The accuracy, fairness of presentation and completeness of this report are the responsibility of the Board of Trustees (the Board) of the System. To the best of our knowledge and belief, 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 operations of the System. The System's basic financial statements will be included in the annual financial report of the City.

Accounting System and Internal Controls

The financial statements have been prepared in accordance with generally accepted accounting principles (GAAP) and presented in accordance with guidance provided by applicable statements issued by the Governmental Accounting Standards Board (GASB).

The System's independent auditors have audited the financial statements and issued an unmodified opinion as of June 30, 2017 and 2016 (pages 12-13). The purpose of the audit is to give reasonable assurance to users of those financial statements, the Board, and participants of the System, that the financial statements present fairly, in all material respects, information regarding the System's net position held in trust for pension benefits and in conformity with accounting principles generally accepted in the United States of America.

A significant responsibility of the Board is to ensure that the System has in place an adequate system of internal controls. A system of internal controls is an entity's plan of organization and its coordinated methods and measures adopted to safeguard its assets, ensure the accuracy and reliability of the accounting system and promote adherence to management policies. These controls include strategic design of the entity's business systems, the appropriate segregation of duties and responsibilities, sound practices in the performance of those duties, retaining capable personnel, and the organizational structure itself. For each implemental control, the cost of the control should not exceed the benefits to be derived. An objective of these controls is to provide reasonable assurance that the financial statements are free of any material misstatement. We believe the System's internal controls are adequate and are working as designed.

Financial Information

The Management's Discussion and Analysis (MD&A) that immediately follows the Independent Auditors' Report provides condensed financial information and activities for the current and prior two fiscal years of the System. It provides a narrative introduction, overview, and analysis of the basic financial statements. The MD&A complements this letter of transmittal and should be read in conjunction with it.

Plan History and Profile

The System was created in 1943 under Chapter 358, Acts of the 48th Texas Legislature, Regular Session, Article 6243g, Vernon's Annotated Revised Texas Civil Statutes, and was reenacted and continued under HB1573, 77th Texas Legislature, as Article 6243h, Vernon's Annotated Revised Texas Civil Statutes, as amended (the Statute).

The System is a multiple-employer, defined benefit pension plan that provides service retirement, disability retirement and death benefits for eligible participants, which includes all municipal employees, except police officers and fire fighters (other than certain police officers in the System as authorized by the Statute) employed full time by the City, elected City officials, and the full-time employees of the System (collectively referred to as "participants"). The System's plan net assets are used to pay benefits for eligible participants of Group A, Group B and Group D. The System is administered by an eleven-member Board of Trustees. The Trustees include four elected trustees who are members of the System, two elected trustees who are retirees of the System, a trustee appointed by the elected trustees, the mayor's appointee, the controller's appointee, and two city council appointees.

The Statute was amended by SB 2190 in the 85th Texas Legislature, with most funding and benefit changes effective July 1, 2017. The Actuarial Section of this CAFR contains additional information on the funding and benefit changes, as well as the annual risk sharing valuation process for purposes of the funding corridor, corridor midpoints, and legacy liability that are integral to the amended contribution requirements.

Budget

The costs of administering the System, consisting of operating administrative expenses and capitalized items, are paid by the System from current earnings pursuant to an annual fiscal budget adopted by the Board.

Funding Status

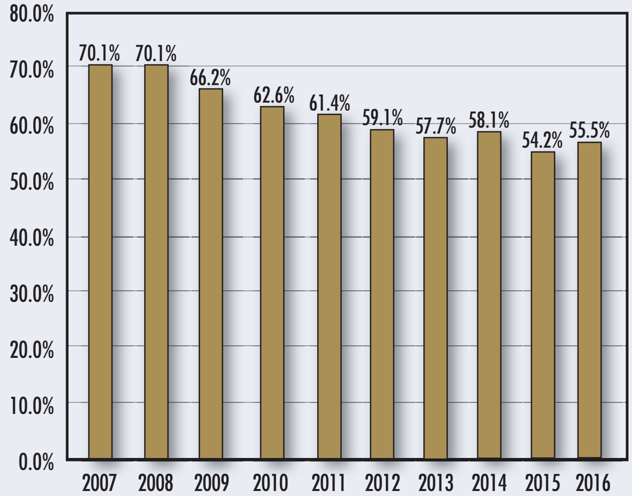
The System's funding objective is to establish contributions which, when combined with present assets and future investment returns, will be sufficient to meet the financial obligations to present and future retirees and beneficiaries.

HMEPS receives contributions from two sources: employer contributions and member contributions. Under the Statute as amended by SB 2190, the System's actuary assumes that the System's investments will return 7.0 percent over the long-term. The differences between the assumed and actual investment return are phased in over 5 years, yielding an actuarial value of assets. This smoothing is intended to avoid extreme volatility in employer contribution rates due to short-term fluctuations in the investment markets. However, as part of SB 2190, all prior years' bases were fully recognized as of July 1, 2016, and therefore the smoothing process will recommence for purposes of the actuarial valuation as of July 1, 2017. The funded ratio, the ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL), is a standard measure of a plan's funded status. In the absence of benefit improvements or reduced funding, a plan's funded ratio should increase over time, until it reaches 100%. The funded status alone is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

As of July 1, 2016 HMEPS' AVA and AAL were $2.63 billion and $4.73 billion, respectively, resulting in a funded ratio of 55.5%. This is higher than the funded ratio as of July 1, 2015 which was 54.2%. This change is primarily the result of changes in assumptions and benefits as a result of revisions to the Statute under SB 2190, which are intended to increase the plan's funded status each year and to achieve a 100% funded ratio by 2047.

A historical perspective of the System's funding levels is presented in the graph on the following page.

FUNDED RATIO



Market Environment

Macroeconomic indicators signaled a positive environment heading into fiscal year 2017. The slow and steady expansion in U.S. GDP gained some steam at the onset of the fiscal year. The U.S. labor market showed strength leading to a growth in consumer spending. Inflation, while trending higher, was below the Fed target rate. Markets responded favorably to the perceived pro-business stance of President Trump following his election in November 2016. Markets rallied in anticipation of lower corporate tax rates and the easing of federal regulations. In an effort to return short term interest rates to more normal levels, the Federal Open Markets Committee twice raised rates after the election. After a noticeable rise in interest rates over the first half of the fiscal year, longer term interest rates finished the year somewhat stable as the expectation of increased inflation eased.

U.S. equity markets enjoyed steady gains throughout the fiscal year. Four consecutive quarters of sharp gains resulted in the broad Wilshire 5000 index advancing 18.5% for the fiscal year. Growth stocks significantly outperformed value stocks during the fiscal year, but smaller capitalization stocks reversed a trend from previous years and began to outpace larger stocks. The Wilshire 5000's gain marked the eighth consecutive positive fiscal year for the index since the credit crisis of 2008-2009.

Over the first half of the fiscal year, the U.S. Dollar rallied against several foreign currencies. This capped the performance of non-dollar denominated assets. Developments in the second half of the fiscal year provided the basis for strong performance in international equity markets. After the new year, the strength of the U.S. Dollar reversed, creating an environment for international equities to post strong dollar-denominated gains. International stocks also rallied when European political uncertainty abated with the election of centrist candidates in the Netherlands and France.

U.S. Treasury securities generated flat to slightly negative returns in fiscal year 2017. Treasury yields moved higher for the first two quarters of the fiscal year. The Federal Reserve began raising interest rates in December, but Treasuries shook off any negative impact because the Fed has managed expectations by communicating a strategy of a measured pace of interest rate hikes. Over the course of the fiscal year, investors' increased appetite for risk benefitted high yield fixed income securities which outperformed investment grade bonds. Investment grade bonds as represented by the Barclay's U.S. Aggregate bond index were essentially flat (-0.3%) for fiscal year 2017. High yield bonds as represented by the Merrill Lynch High Yield Master Trust II Index were up 12.8% for the fiscal year.

Among the alternative asset classes, Real Estate and Private Equity returned 9.2% and 16.0% respectively. With real estate supply and demand generally in balance, it was the expanding economy and growing labor force that provided the foundation for steady performance. Fiscal year 2017 turned in another solid year for private equity returns. Though down from recent highs, private equity exit activity was robust, driving asset valuations and performance.

Overall, the System's investments returned 12.7% for fiscal year 2017. Through the efforts of the Board, the System's investment portfolio is more broadly diversified than most public pension plans and exhibits less volatility, particularly during extreme market environments. Over long periods of time (10 years), the System's investment performance ranks in the top quintile in the TUCS Master Trusts – Public universe peer group. During the 10-year period ending June 30, 2017, the system's annualized return was 6.1%, with the median comparable fund returning 5.6%.

Major Current and Future Initiatives

Pension Reform

In FY 2017, the System and the City negotiated significant pension funding and benefit reforms to strengthen the pension system for the long term. The reforms were part of SB 2190 that was enacted into law in the 85th Texas Legislature, effective beginning July 1, 2017. The Actuarial Section of this CAFR contains information on the pension funding and benefit changes and the anticipated long-term improvement in the System as a result of the reforms.

Member Services

The Benefits Division has continued its effort to provide information relating to pension benefits by holding seminars at City departments and individual benefit meetings at HMEPS. In FY 2017, HMEPS:

- Responded to continued demand for the Outreach Program, which reaches hundreds of members with individual and group sessions provided by our benefits counselors and our Certified Financial Planner. This past year, these staff members conducted 275 individual counseling sessions and hosted 64 joint presentations for various City departments as well as new employee orientations for the benefit of 3,518 attendees.
- Conducted 161 one-on-one counseling sessions between the HMEPS financial counselor and participants in addition to numerous presentations in the field with the Benefits Division, including seminars to inform over 2,000 participants of the July 1, 2017 legislative changes. The financial counselor also monitored pension-related issues nationally and locally, a critical part of fulfilling HMEPS' efforts to stay informed. A growing number of participants requested financial counseling based on other participants' recommendations.
- Processed 2,553 benefit applications, including retirements, the Deferred Retirement Option Plan, survivor benefits, refunds, and lump-sum payments.
- Participated in the Spring and Fall Financial Retirement Employees Educational Summits, annual events co-sponsored by the System that help City of Houston employees better plan for their financial futures.

Investments

The System's strategic asset allocation policy is designed to manage risk by diversifying among public and private asset classes. Effective October 1, 2017, the Board approved an updated asset allocation for the System's investments, along with an updated policy portfolio. Risk-return assumptions and correlations for asset classes were reexamined taking into account current and forecasted economic conditions. However, in fiscal year 2017, the System operated under the previous policy portfolio that had been effective since July 1, 2013.

Although the System's updated asset allocation became effective October 1, 2017, this section discusses the previous asset allocation in effect during fiscal year 2017. The current target allocation to Global Equity is 35%. The target allocation to Fixed Income is 15%, while Real Estate is 10% and Private Equity is 17.5%. The target allocation of the Absolute Return asset class is 10%, and the target allocation for the Inflation Linked asset class is 12.5%. During fiscal year 2017, the System continued to rebalance its portfolio to maintain its positioning near the strategic asset allocation policy targets. With the help of the System's alternative investment consultant, Cliffwater LLC, the System committed to four private equity partnerships, two private real estate partnerships, and four private real asset partnerships during the fiscal year.

The System's investment portfolio closed its 2017 fiscal year at $2.6 billion. The total investment return for the fiscal year was 12.7%. The System's investment performance was 5.8%, 9.4% and 6.1% for the past three-, five- and ten-year periods. Compared to similar investment portfolios (TUCS Master Trusts – Public Universe), the fund posts attractive investment returns over the long term. The fund ranks in the top 15% over the trailing ten-year period ending June 30, 2017. The best performing asset classes for fiscal year 2017 were Global Equity (+16.3%) and Private Equity (+16.0%).

In the upcoming fiscal year, the System will continue to work with consultants Wilshire Associates and Cliffwater LLC to identify attractive public and private market investments consistent with the strategic asset allocation.

Board Governance

During FY 2017, David Donnelly was appointed as the mayoral appointee in Position 1, Edward J. Hamb II was reappointed as the controller appointee in Position 2, Barbara Chelette was reappointed as the elected trustees' appointee in Position 9, Adrian Patterson was reappointed as the council appointee in Position 10, and Denise Castillo-Rhodes was appointed as the council appointee in Position 11 of the HMEPS Board.

Certificate of Achievement

The Government Finance Officers Association (GFOA) of the United States and Canada awarded a Certificate of Achievement for Excellence in Financial Reporting to the Houston Municipal Employees Pension System for its comprehensive annual financial report for the year ended June 30, 2016. This was the 23rd consecutive year that the System has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

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

Acknowledgement

This CAFR was prepared through the combined efforts of the System staff and was subject to the scrutiny of the Board. It is intended to provide information to its user that may be a basis for a general understanding of the System. This CAFR is being forwarded to the City of Houston, the Texas Pension Review Board, the GFOA, and other interested parties who may from time to time request it.

In Closing…

A core purpose of the System is to help provide for the financial security of its participants when they are eligible to receive benefits. Municipal public sector employees are vital to providing and maintaining important city services for Houston residents. Quality employees are attracted to and retained by the public sector in part by the security and benefits offered by a sound pension system. Houston is in the midst of recovering from the aftermath of Hurricane Harvey, one of the worst natural disasters this area, and the nation, has experienced. Many HMEPS members put themselves in harm's way to rescue flood victims, and volunteered their time and expertise to provide affected Houstonians with food, shelter and assistance in the recovery process. The System is proud to serve these members and all of the dedicated municipal employees and retirees who have made tremendous contributions to Houston and its citizens.

Sincerely,

Sherry Mose
Chairman

David L. Long
Executive Director

Sherry Mose
Chairman

Roy W. Sanchez
Vice Chairman

Lonnie Vara
Secretary

Roderick J. Newman
Elected Trustee

Asha Patnaik
Elected Trustee

Lenard Polk
Elected Trustee

Barbara Chelette
Appointed Trustee

David Donnelly
Mayoral Appointee

Edward J. Hamb II
Controller Appointee

Denise Castillo-Rhodes
Council Appointee

Adrian Patterson
Council Appointee

David L. Long
Executive Director

BOARD OF TRUSTEES

Elected and Appointed Trustees

Sherry Mose, Chairman
Roy W. Sanchez, Vice Chairman
Lonnie Vara, Secretary
Roderick J. Newman
Asha Patnaik
Lenard Polk
Barbara Chelette, Appointed

City Appointed Trustees

Denise Castillo-Rhodes
David Donnelly
Edward J. Hamb II
Adrian Patterson

David L. Long, Executive Director

Administrative Organization

Audit Committee
Budget and Oversight Committee
Disability Committee
External Affairs Committee
Investment Committee
Personnel and Procedures Committee

Executive Director
General Counsel
Chief Investment Officer
Investment Managers' Services
Market Research
Performance Measurement

Member Services
Benefit Administration Services
Communications
Financial Counseling
Member Services

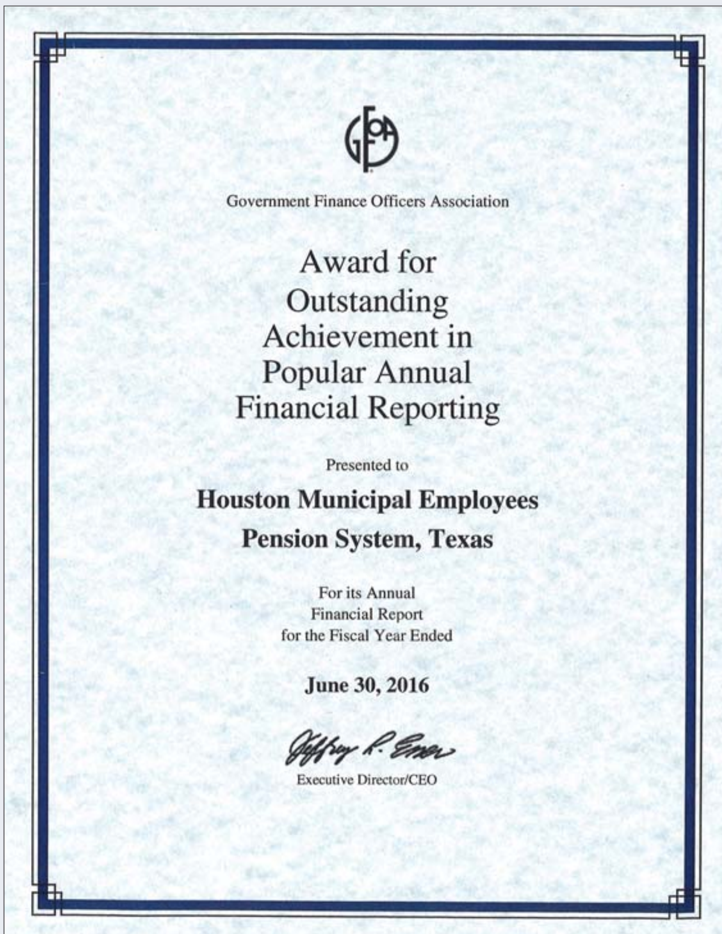
Operations
Accounting
Financial Reporting
Records
Technology Support

For more information on investment professionals who provide services to HMEPS, refer to the Investment Expenses table under the Other Supplementary Information on page 55 and the Schedule of Fees and Commission table on page 66.

The Government Finance Officers Association (GFOA) of the United States and Canada awarded a “Certificate of Achievement for Excellence in Financial Reporting” to Houston Municipal Employees Pension System for its comprehensive annual financial report for the fiscal year ended June 30, 2016. The Certificate of Achievement is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government financial reports.

In order to be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized comprehensive annual financial report, the contents of which conform to program standards. Such a CAFR must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. The Houston Municipal Employees Pension System has received a Certificate of Achievement for the last 23 consecutive years (fiscal years ended June 30, 1994 through 2016). We believe our current report continues to conform to the Certificate of Achievement program requirements, and we are submitting it to the GFOA for consideration.



Government Finance Officers Association

Award for Outstanding Achievement in Popular Annual Financial Reporting

Presented to

Houston Municipal Employees Pension System, Texas

For its Annual Financial Report for the Fiscal Year Ended

June 30, 2016

Executive Director/CEO

Consultants (Fiscal Year 2017)

Actuary
Gabriel, Roeder, Smith & Company

Auditor
Weaver and Tidwell, L.L.P.

Board Medical Advisor
Charles Schuhmacher, M.D.

Communication Services
LT Communications, L.L.C.

Governmental Representation
Harris Law Firm, P.C.
HillCo Partners, L.L.C.
Locke Lord L.L.P.

Investment Consultants
Cliffwater, L.L.C.
Wilshire Associates, Inc.

Investment Performance Analysis
Cliffwater, L.L.C.
Wilshire Associates, Inc.

Legal Counsel
Baker Botts, L.L.P.
Jackson Walker, L.L.P.
Locke Lord L.L.P.

Master Custodian/Trustee
State Street Bank and Trust Company

Technology Services
Pension Benefits Information, Inc.

Investment Managers (Fiscal Year 2017)

Absolute Return

Anchorage Capital Group
Angelo, Gordon & Co.
Brevan Howard US
Brigade Capital Management
Claren Road Asset Management
Davidson Kempner Capital Management
Graham Capital Management
Highland Capital Management
MKP Capital Management
Och-Ziff Capital Management Group
Raveneur
Samlyn Capital
Scopia Capital
Soroban Capital Partners
York Capital Management

Fixed Income

Alliance Bernstein Institutional Investments
BlackRock, Inc.
DDJ Capital Management
GMO
Loomis, Sayles & Co.
Pugh Capital Management
Smith Graham & Co.
Whippoorwill Associates, Inc.

Inflation-Linked

BlackRock, Inc.
EnCap Investments
Enervest, Ltd
Global Forest Partners
NGP Energy Capital
Oaktree Capital Management
Quantum Energy Partners
Riverstone Holdings
Taurus Funds Management
Tillridge Global Agribusiness
The Carlyle Group
Tortoise Capital Advisors

Global Equity

Ariel Investments
Baring International
BlackRock, Inc.
DePrince, Race & Zollo, Inc.
EARNEST Partners
INTECH Investment Management
Neumeier Investment Counsel
OFI Institutional Management
PanAgora Asset Management, Inc.
State Street Global Advisors
Thomas White International

Private Equity

Adams Street Partners
Brera Capital Partners
Brockway Moran & Partners, Inc.
Centerbridge Partners
Clearlake Capital Partners
CVE Kaufman Fellows Endowment
GTCR Management
Goldman, Sachs & Co.
HarbourVest Partners
Hellman & Friedman
ICV Partners III
J.W. Childs Associates
JMI Equity
Lexington Partners, Inc.
Matlin Patterson Global Advisors
New Enterprise Associates
New Mainstream Capital
Oaktree Capital Management
Onex Corporation
Pacven Walden Management Co., Ltd.
Pegasus Investors
Pharos Capital Partners
Platinum Equity Capital Partners
Siris Capital Group
Summit Partners
Sun Capital Partners, Inc.
Technology Ventures
The Carlyle Group
The Jordan Company
Valor Equity Partners
Vista Equity Partners
Wayzata Investment Partners

Real Estate

Aetos Capital
Aermont Capital
Angelo, Gordon & Co.
CB Richard Ellis Investors
Crow Holdings
DRC Capital
Fortress Investment Group
GEM Realty Capital
Grove International Partners
IC Berkeley Partners
Lone Star U.S. Acquisitions
Long Wharf Real Estate Partners
Mesa West Capital
Morgan Stanley Asset Management, Inc.
Olympus Real Estate Corp.
Orion Capital Managers
RREEF America
State Street Global Advisors
Starwood Capital Group Global


HOUSTON
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IS IN OUR
TRADITION
35

SECTION TWO

FINANCIAL INFORMATION

Independent Auditor's Report

To the Board of Trustees of the

Houston Municipal Employees Pension System

Report on the Financial Statements

We have audited the accompanying financial statements of the Houston Municipal Employees Pension System (the System), which comprise the statement of fiduciary net position as of fiscal year ended June 30, 2017, and the related statement of changes in fiduciary net position for the fiscal year then ended and notes to the basic financial statements.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. 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 auditor's 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 financial position for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matter – 2016 Financial Statements

The financial statements of the System as of the fiscal year ended June 30, 2016 were audited by another auditor who expressed an unmodified opinion on those statements in their report dated October 27, 2016.

Other Matters

Required Supplemental 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, Net Pension Liability, Contributions, Investment Returns, and Funding Progress for OPEB 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 supplemental 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.

Additional Supplemental Information

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The additional supplemental information, which comprise Schedules 6, 7 and 8, as listed in the Table of Contents, is presented for the purpose of additional analysis and is not a required part of the financial statements. Such information is the responsibility of the System's management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplemental information is fairly stated in all material respects in relation to the basic financial statements as a whole.

WEAVER AND TIDWELL, L.L.P.

Weaver and Tidwell, L.L.P.

Houston, Texas
October 12, 2017

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

The Board of Trustees (the Board) of the Houston Municipal Employees Pension System (the System) is pleased to provide this overview and analysis of the financial performance and activities of the System for the fiscal years ended June 30, 2017 and 2016. We encourage the readers to consider the information presented here in conjunction with the basic financial statements.

OVERVIEW OF THE FINANCIAL STATEMENTS

The discussion and analysis is intended to serve as an introduction to the System's financial statements. The financial section consists of (1) System's Basic Financial Statements, (2) Notes to basic Financial Statements, and (3) Supplemental Information. The year-end financials for fiscal years 2017 and 2016 Notes to the Basic Financial Statements, and the Required Supplemental Information and other Supplemental information in this report were prepared in conformity with generally accepted accounting principles established by the Governmental Accounting Standards Board (GASB).

System's Basic Financial Statements

There are two basic financial statements presented herewith. The Statements of Fiduciary Net Position as of June 30, 2017 and 2016 indicate the net position available to meet future payments and give a snapshot at a particular point in time. The Statements of Changes in Fiduciary Net Position for the fiscal years ended June 30, 2017 and 2016 provide a view of the fiscal year's additions to and deductions from the System.

Notes to Basic Financial Statements

The notes are an integral part of the basic financial statements and provide additional background information that is essential for a complete understanding of the data provided in the System's financial statements. The notes to the basic financial statements can be found on pages 22 to 46 of this report.

Supplemental Information

The required supplemental information consists of:

Schedule 1 – Schedule of Changes in Net Pension Liability – Information about the components of the net pension liability and related ratios includes the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percentage of covered payroll. It should be noted though that actuarial information is based upon assumptions about future events, and therefore, the figures presented are estimates.

Schedule 2 – Schedule of Net Pension Liability – This schedule provides the historical liability of employers and non-employer contributing entities to plan members for benefits provided though a defined benefit pension plan.

Schedule 3 – Schedule of Contributions – Details the actuarially determined contribution calculated for employers, actual contributions, covered payroll, and actual contributions as a percentage of payroll.

Schedule 4 – Schedule of Investment Returns – A 10-year schedule presenting the annual money-weighted rate of return on pension plan investments for each fiscal year.

Schedule 5 – Schedule of Funding Progress for OPEB and Notes to Required Schedule – These are calculations made by the System's actuary and they provide actuarial information that contributes to the understanding of the changes in the actuarial funding of and the funded status of the Other Post-Employment Benefits (OPEB) over a number of years. It should be noted that actuarial information is based upon assumptions about future events, and therefore, the figures presented are estimates.

The other supplemental information consists of:

Schedule 6 – Investment Summary – This lists the System's investments by type presented both at cost and fair market value.

Schedule 7 – Investment Expenses, Professional Services and Administration Expenses – This provides more information for purposes of a more detailed analysis.

Schedule 8 – Details of Investment Expenses and Professional Services – This provides more information for purposes of a more detailed analysis.

COMPARATIVE FINANCIAL STATEMENTS

Below is a condensed and comparative summary of major classes of Fiduciary Net Position at fair value. (*In thousands of dollars)*

	June 30, 2017	June 30, 2016	June 30, 2015
Assets			
Cash and cash equivalents	$ 7,917	$ 7,551	$ 622
Investments	2,594,843	2,396,798	2,467,340
Receivables on asset sales	4,751	9,041	19,724
Contribution receivable - City of Houston	7,363	-	-
Other receivables	3,661	4,337	5,156
Collateral on securities lending	47,371	73,941	101,533
Furniture, fixtures and equipment, net	178	298	395
Total assets	2,666,084	2,491,966	2,594,770
Liabilities			
Payables on asset purchase	9,784	12,133	30,552
Accrued liabilities	6,264	5,868	6,141
Collateral on securities lending	47,371	73,941	101,533
Total liabilities	63,419	91,942	138,226
Net position restricted for pensions	$ 2,602,665	$ 2,400,024	$ 2,456,544

Below is a comparative summary of Statements of Changes in Fiduciary Net Position available for pension benefits. *(In thousands of dollars)*

	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015
Additions:			
Contributions	$ 198,459	$ 175,832	$ 161,205
Investment and interest income, net	290,911	27,988	73,854
Other income	1,272	1,303	557
Total additions	490,642	205,123	235,616
Deductions:			
Benefits paid	280,456	253,178	234,955
Contribution refunds	718	1,105	1,549
Administrative expenses and professional fees	6,827	7,360	7,007
Total deductions	288,001	261,643	243,511
Increase (decrease) in net position	202,641	(56,520)	(7,895)
Restricted net position, beginning of year	2,400,024	2,456,544	2,464,439
Restricted net position, end of year	$ 2,602,665	$ 2,400,024	$ 2,456,544

FINANCIAL HIGHLIGHTS (IN THOUSANDS OF DOLLARS, UNLESS OTHERWISE NOTED)

CONTRIBUTIONS

The System received $15,902 and $15,874 during fiscal years 2017 and 2016 in employee contributions from approximately 5,161 and 5,482 Group A active participants respectively, and $16,198 in employee contribution from 5,873 active Group A participants during fiscal year 2015. Employee Contributions from Group A members represent 5.0% of the employee's qualifying base salary. As a result of Senate Bill 2190 of the 85th Texas Legislature ("SB 2190"), all active employees will begin contributing in fiscal year 2018, and the contribution by Group A members will increase. For fiscal year 2017, employee contributions increased by $28 or 0.2% compared to fiscal year 2016 and decreased by $324 or 2.0% in fiscal year 2016 compared to fiscal year 2015. The System received cash contributions from the City of Houston (the City) of $182,558, $159,959 and $145,007 (which are net of contributions to the replacement benefit plan of $1,801, $1,612 and $1,425) for fiscal years 2017, 2016 and 2015, respectively. This represents actual employer contributions of 29.4% of covered payroll (pensionable pay) in fiscal year 2017, 27.4% and 25.4% of covered payroll (pensionable pay) for fiscal years 2016 and 2015, respectively.

BENEFIT PAYMENTS

Benefit payments increased to $280,456 during fiscal year 2017, compared to $253,178 during fiscal year 2016, and compared to $234,955 during fiscal year 2015. There were 10,601 participants that received benefits for fiscal year 2017 compared to 10,286 participants in fiscal year 2016, versus 10,025 participants in fiscal year 2015. The increase in benefits paid represents a 10.8% increase in fiscal year 2017 over fiscal year 2016, and a 7.8% increase in fiscal year 2016 over fiscal year 2015. Refunds experienced a 35.0% decrease to $718 in fiscal year 2017 from $1.1 million in fiscal year 2016, after a 28.7% decrease from $1.5 million in payouts in fiscal year 2015.

Monthly recurring retirement pension benefits amounted to $235,832 (a 5.4% increase from fiscal year 2016), accounting for 84.1% of the total benefit payments for fiscal year 2017 and $223,731 for fiscal year 2016 representing 88.4% of monthly retirement benefits, or a 5.0% increase over fiscal year 2015.

Distributions to Deferred Retirement Option Plan (DROP) participants amounted to $44,274, an increase of $15,079 (51.6%) for the year compared to $29,195 during fiscal year 2016, which was an increase of $7,554 (34.9%) as compared to the fiscal year 2015 total of $21,641. DROP distributions represented 15.8% of the total benefit payments during fiscal year 2017, 11.5% of the total in fiscal year 2016, and 9.2% of the total payments made in fiscal year 2015. The breakdown in payments includes fiscal year 2017 lump sum payments of $42,492, along with an annual amount of $1,782 paid out over monthly distributions versus fiscal years 2016 and 2015 which had payments of $27,420 and $1,775 and $19,778 and $1,863 for lump sums and monthly distributions, respectively.

Total benefit payments exceeded total employee plus employer contributions by $81,996, $77,346, and $73,750 during fiscal years 2017, 2016, and 2015, respectively.

ACCOUNTING AND ADMINISTRATION

Costs of administering the benefit programs of the System, including professional fees, decreased to $6,826 for fiscal year 2017 from $7,360 for fiscal year 2016, down 7.3%. This decrease is mainly due to a decrease in legal services of $300. Fiscal year 2016 expenses of $7,360 were up 4.9% versus fiscal year 2015 due to an increase in legal/professional services.

The System capitalizes expenditures for furniture, fixtures and equipment in accordance with Governmental Accounting Standards Board Statement No. 34, Basic Financial Statements – and Management's Discussion and Analysis – for State and Local Governments, as amended. Furniture, fixtures and equipment, net of accumulated depreciation, as of fiscal year ends 2017, 2016, and 2015 are $178, $298, and $395, respectively.

ACTUARIAL VALUATIONS AND FUNDING

The funded ratio is a standard measure of a plan's funded status representing the ratio of the actuarial value of assets to the actuarial accrued liability. The funded ratio as of the last actuarial report, July 1, 2016, is 55.5%, which is higher than the 54.2% funded ratio as of July 1, 2015, while the funded ratio for the actuarial report as of July 1, 2014 was 58.1%. As of July 1, 2016, the Systems' unfunded actuarial accrued liability was $2.109 billion. In determining contribution rates, an actuarial value of assets is used rather than a market value of assets, with the actuarial value of assets (AVA) based on smoothed returns. This "smoothing method" is intended to help reduce the volatility of the contribution rates from year to year. The method used to compute the AVA takes the difference between the actual market value of assets and the expected actuarial value of assets (based on the assumed 7.0% investment return rate), and establishes a base each year which is equal to this difference less any unrecognized bases from prior years. If the current year's base is of opposite sign from the prior years' bases then it is offset dollar for dollar against the prior years' bases (oldest bases first) until either the prior years' bases or the current year's base is reduced to zero. Any remaining bases are then recognized over the remaining period for the base (5 less the number of years between the base year and the valuation year) in equal dollar amounts.

INVESTMENTS

The net investment and interest income of the System was $290,911 during fiscal year 2017, an increase of $262,923 from fiscal year 2016's income of $27,988. The investment and interest income of the System consists of:

	Fiscal Year 2017	Fiscal Year 2016	**Dollar Change**	Fiscal Year 2016	Fiscal Year 2015	**Dollar Change**
Interest	$ 21,741	$ 17,753	$ **3,988**	$ 17,753	$ 17,417	$ **336**
Dividends	19,455	18,844	**611**	18,844	19,323	**(479)**
Earnings from limited partnerships and real estate trusts	5,102	1,034	**4,068**	1,034	8,679	**(7,645)**
Realized gain on investments	39,151	22,164	**16,987**	22,164	102,543	**(80,379)**
Change in unrealized gain on investments	212,501	(24,618)	**237,119**	(24,618)	(66,208)	**41,500**
Net proceeds from lending securities	352	349	**3**	349	484	**(135)**
Less cost of investment services	(7,391)	(7,538)	**147**	(7,538)	(8,384)	**846**
Net investment and interest income (loss)	$ 290,911	$ 27,988	$ **262,923**	$ 27,988	$ 73,854	$ **(45,866)**

- The System's gross rate of return on investments during fiscal year 2017 was 12.7% compared with the fiscal year 2016 rate of return of 1.6%. The increase in the rate of return was due primarily to market performance in fiscal year 2017.
- Fiscal year 2017 saw global equity continue to rise as European economies stabilized and Japan's recent reforms started to show dividends. Domestic equities (Wilshire 5000) ended the year with a gain of 18.5%, and international equities (MSCI All Country ex-US) recorded a gain of 20.5%.
- High yield bonds as represented by the Merrill Lynch High Yield II Total Return recorded significant gains, returning 12.8%. High quality investment grade bonds lagged, ending the year with a slight loss of 0.3%. Real Estate had another year of strong performance, as the NCREIF Property Index returned 7.0% in fiscal year 2017.

- At June 30, 2017, the Plan's total pension liability was $4.96 billion. The Plan's Fiduciary Net Position was $2.60 billion leaving a Net Pension Liability of $2.36 billion. The Plan's Fiduciary Net Position as a percentage of total pension liability was 52.5%.
- The Fiduciary Net Position of $2.6 billion increased by $203 million or 8.4% during fiscal year 2017 due to strong investment income returns. This compares to a decrease of $56.5 million or 2.3% in the Fiduciary Net Position during fiscal year 2016.

INVESTMENT REVIEW

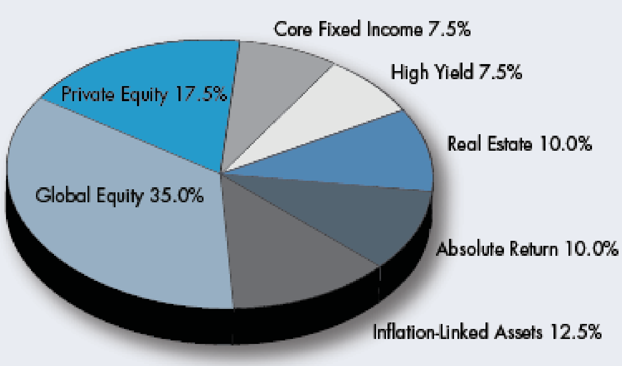
The System's investment portfolio closed its 2017 fiscal year at $2.6 billion, up from $2.4 billion at the beginning of the year. The total gross investment return for the fiscal year was 12.7%. The System's performance, including the total fund, each asset class and their corresponding benchmark(s), for fiscal year 2017 and the trailing three, five, and ten-year periods are listed in Table 1 on the next page.

The System's gross investment performance was 12.7%, 5.8% and 9.4% for the past one-, three- and five-year periods. The System outperformed its policy benchmark for the ten-year period. Relative to its peer group (Wilshire TUCS Master Trusts – Public) the fund continues to post attractive investment returns over the long term, remaining in the top decile over the trailing ten-year period.

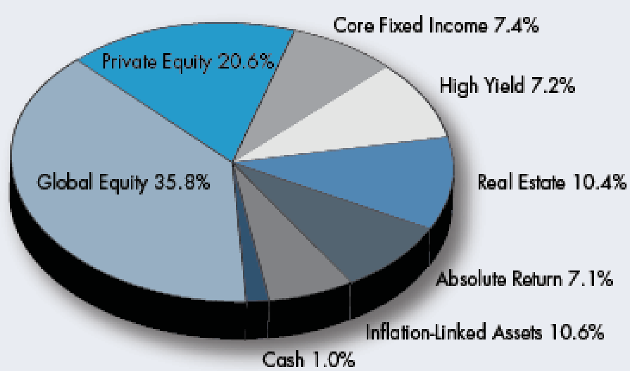
The best performing asset classes for fiscal year 2017 were global equity, up 16.3% and private equity, up 16.0%. For fiscal year 2016, Real Estate, 13.0% and Private Equity, 7.0%, were the top two performing asset classes. The benefits of a well-diversified asset allocation are evidenced by the System's ability to perform very competitively over multi-year periods where different asset classes drive overall returns. For the past three-year and five-year periods, Private Equity and Domestic Equity were the System's best performing asset classes, providing a 11.1% and 14.5% return.

The System continuously monitors the actual allocation with the goal of moving it toward the target. The Target Allocation and Actual Asset Allocation charts below reflect the System's target and actual asset allocation mix as of June 30, 2017.

Target Allocation



Actual Asset Allocation



SECURITIES LENDING PROGRAM

The System's securities lending program obtains additional income by lending securities to broker dealers and banks. During the years ended June 30, 2017 and 2016, the System's custodian lent the System's securities and received cash, securities issued or guaranteed by the United States government, and irrevocable bank letters of credit as collateral. The Board and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral received on each loan was invested in a collective investment pool.

TABLE 1

Periods Ended June 30, 2017

	Assets		Performance			
	($ Millions)	(%)	1 -year	3 -year	5 -year	10 -year
Total Global Equity	**929.4**	**35.7**	**16.3%**	**5.8%**	**-.-%**	**-.-%**
Global Equity Policy[1]			15.7%	5.7%	-.-%	-.-%
Global Low Volatility Equity	**203.2**	**7.8**	**6.5%**	8.5%	-.-%	-.-%
MSCI ACWI Min Vol (Net)			6.1%	8.0%	-.-%	-.-%
Domestic Equity	**353.5**	**13.6**	**21.0%**	**9.4%**	**14.5%**	**6.6%**
Wilshire 5000			18.5%	9.3%	14.6%	7.3%
International Equity	**372.7**	**14.3**	**19.2%**	**0.9%**	**7.6%**	**1.1%**
MSCI ACWI ex-US (Net)			20.5%	0.8%	7.2%	1.1%
Global Fixed Income	**379.0**	**14.6**	**7.8%**	**4.0%**	**5.5%**	**6.1%**
Global Fixed Income Policy[2]			6.0%	3.5%	4.6%	6.1%
Real Estate	**270.4**	**10.4**	**9.2%**	**11.0%**	**11.0%**	**2.1%**
NCREIF Property			7.0%	10.2%	10.5%	6.4%
Private Equity	**535.4**	**20.6**	**16.0%**	**11.1%**	**11.1%**	**9.0%**
S&P 500 + 3%			20.9%	12.6%	17.6%	10.2%
Absolute Return	**183.9**	**7.1**	**7.1%**	**0.8%**	**4.0%**	-.-%
Custom Benchmark[3]			5.0%	4.6%	4.5%	-.-%
Inflation Linked	**276.1**	**10.6**	**8.2%**	**-4.8%**	**3.9%**	-.-%
Custom Benchmark[4]			5.6%	4.9%	5.3%	-.-%
Cash	**25.5**	**1.0**	**0.2%**	**1.2%**	**2.0%**	-.-%
Total Fund	**2601.0**	**100.0**	**12.7%**	**5.8%**	**9.4%**	**6.1%**
Policy Index			12.0%	6.9%	10.0%	6.1%

[1] Global Equity Policy: 3Q13 - Present: 75% MSCI All-Country World IMI (Net), 25% MSCI All-Country World Minimum Volatility Index (Net).
[2] Global Fixed Income Policy: 1Q04 - Present: 50% Barclays US Aggregate Bond Index, 50% ML High Yield Master II.
[3] Absolute Return Custom Benchmark: 2Q11 - Present: Libor 3-Month Yield + 4% annually; Prior to 2Q11: Libor 3-Month Yield + 5% annually.
[4] Inflation-Linked Assets Custom Benchmark: 2Q11 - Present: CPI + 4% annually; Prior to 2Q11: CPI + 5% annually.

LIMITED PARTNERSHIP COMMITMENT

The System's investments in limited partnerships are included in the first table appearing in Note 9 on page 32. In connection with those investments, the System has remaining commitments as of June 30, 2017, 2016, and 2015 of approximately $725 million, $700 million, and $680 million, respectively, pursuant to terms of the respective limited partnerships.

OTHER COMMENTS

ACTUARIAL VALUATION

In compliance with the System's policy, an actuarial valuation along with an experience study will be performed by the System's actuary. Under SB 2190, experience studies comparing plan assumptions against plan experience will be performed at least once every four years effective 2021.

CONTACTING THE SYSTEM'S FINANCIAL MANAGEMENT

This financial report is designed to provide our participants, business partners, and other stakeholders with a general overview of the System's financial activities. Questions about this report should be directed to the Executive Director of the Houston Municipal Employees Pension System at 1201 Louisiana, Suite 900, Houston, Texas 77002.

STATEMENTS OF FIDUCIARY NET POSITION | JUNE 30, 2017 AND 2016
(IN WHOLE DOLLARS)

	2017	2016
Assets		
Cash and cash equivalents	$ 7,916,715	$ 7,551,046
Receivables		
Contribution receiveable - City of Houston	7,363,413	0
Receivables on asset sales	4,303,047	6,048,347
Receivables on foreign exchanges	447,945	2,993,199
Other receivables	3,660,945	4,336,845
Total receivables	15,775,350	13,378,391
Investments, at fair value		
Short-term investment funds	54,125,554	79,291,774
Government securities	72,675,493	92,416,960
Corporate bonds	202,121,498	200,401,238
Capital stocks	540,683,622	664,796,012
Commingled funds	653,822,339	364,164,627
Real assets	261,822,756	271,114,650
Alternative investments	809,591,991	724,612,264
Total investments	2,594,832,253	2,396,797,525
Collateral on securities lending arrangements	47,371,287	73,941,330
Furniture, fixtures and equipment, net	177,788	297,957
Total assets	2,666,084,393	2,491,966,249
Liabilities		
Payables on asset purchases	9,335,017	9,139,310
Payables on foreign exchanges	448,630	2,993,653
Accrued liabilities	3,010,519	3,076,483
Accrued other post retirement benefits	3,254,222	2,792,233
Collateral on securities lending arrangements, at fair value	47,371,287	73,941,330
Total liabilities	63,419,675	91,943,009
Plan net position held in trust for pension benefits	$ 2,602,664,718	$ 2,400,023,240

See accompanying notes to basic financial statements.

	2017	2016
Additions		
Contributions:		
City of Houston	$ 182,557,829	$ 159,958,607
Participants	15,901,600	15,873,664
Total contributions	198,459,429	175,832,271
Other income	1,271,670	1,302,748
Investment Income		
Interest on bonds and deposits	21,741,207	17,753,498
Dividends	19,454,578	18,843,687
Earnings from limited partnerships and real estate	5,101,591	1,034,091
Net (depreciation) appreciation on investments	251,652,270	(2,453,865)
Total investment income	297,949,646	35,177,411
Proceeds from lending securities	715,280	592,940
Less costs of securities lending	(362,739)	(244,036)
Net proceeds from lending securities	352,541	348,904
Less costs of investment services	(7,391,470)	(7,537,844)
Total investment income	290,910,717	27,988,471
Total additions to net position	490,641,816	205,123,489
Deductions		
Benefits paid to participants	280,455,603	253,178,363
Contribution refunds to participants	718,176	1,105,306
Professional services	805,413	1,021,470
Administration expenses	6,021,146	6,338,669
Total deductions	288,000,338	261,643,808
Net decrease	202,641,478	(56,520,319)
Fiduciary net position, restricted for pensions		
Beginning of year	2,400,023,240	2,456,543,559
End of year	$ $2,602,664,718	$ 2,400,023,240

See accompanying notes to basic financial statements.

NOTE 1 — DESCRIPTION OF PLAN

The Houston Municipal Employees Pension System (the System) was created under Chapter 358, Acts of the 48th Texas Legislature, Regular Session, 1943 (Article 6243g, Vernon's Texas Civil Statutes) and reenacted and continued under HB1573, 77th Texas Legislature, Article 6243h, Vernon's Texas Civil Statutes (the Pension Statute), as amended. The System is a cost-sharing multiple-employer defined benefit pension plan with two participating employers covering all municipal employees, except police officers and firefighters (other than certain police officers in the System as authorized by the Pension Statute), employed full time by the City of Houston, Texas (the City), elected City Officials, and the full time employees of the System (collectively referred to as participants). The System includes a contributory group (Group A) and two noncontributory groups (Group B and Group D) and provides for service, disability and death benefits for eligible participants. As a result of SB 2190, beginning with fiscal year 2018, all member groups will be contributory. The System's plan net position is used to pay benefits for eligible participants of Group A, Group B, and Group D. The System is a governmental plan and therefore is not subject to the Employee Retirement Income Security Act of 1974. The System is governed by a Board of Trustees (the Board) consisting of eleven trustees – four elected by the active plan members, two elected by the retired plan members, one appointed by the mayor of the city, one appointed by the controller of the city, one appointed by the elected trustees, and two appointed by the governing body of the city. The appointed trustees must have expertise in at least one of the following areas: accounting, finance, pension, investment or actuarial. The System can only be terminated or amended by an act of the Legislature of the State of Texas or by an agreement between the City and the Board pursuant to the Pension Statute.

Participation

Participants newly hired on or after January 1, 2008 automatically become members of Group D.

Participants hired before September 1, 1981 participate in Group A, unless they elected before December 1, 1981 or after May 1, 1996 to transfer to Group B. Participants hired or rehired after September 1, 1981 but before September 1, 1999, may make a one-time irrevocable election to participate in Group A; otherwise, they participate in Group B. Participants hired or rehired on or after September 1, 1999 and before January 1, 2008 participate in Group A; except that Executive Officials of the City and the Executive Director of the System (Executive Officials) participated in Group C. Effective January 1, 2005, the Executive Officials of the City and the Executive Director of the System automatically became Group A members pursuant to the First Amendment to Meet and Confer Agreement, dated December 21, 2004.

As of July 1, 2016, the most recent actuarial report shows the following System participants:

	2016	2015
Retirees and beneficiaries currently receiving benefits	10,289	10,023
Former employees - vested but not yet receiving benefits	3,432	3,202
Former employees - non-vested	2,174	2,293
Vested active participants	7,966	8,352
Non-vested active participants	4,137	3,475
Total participants	27,998	27,345

Retirement Eligibility

Effective January 1, 2008, new employees participate in Group D with:

- No employee contributions until July 2017, then 2.0% of salary, increasing to 3.0% beginning January 2018.
- Normal retirement eligibility of age 62 and 5 years of credited service,
- Benefit accrual of 1.8% for the first 25 years of credited service, and 1.0% thereafter,
- Option to elect an actuarially equivalent benefit with a survivor benefit,

- Option to elect an early reduced retirement benefit, and
- Option to roll over funds from a section 457(b) plan to purchase an increased benefit.

A former employee who is rehired as an employee by the City or by the System on or after January 1, 2008 is a member of the group in which the employee participated at the time of the employee's immediately preceding separation from service.

For those participants in Group A and Group B employed effective January 1, 2005, a participant who terminates employment with the City or the System is eligible for a normal retirement pension beginning on the member's effective retirement date after the date the member completes at least five years of credited services and attains:

- 62 years of age, or
- A combination of years of age and years of credited service, including parts of years, the sum of which equals the number 75, provided the participant is at least 50 years of age, or
- Any combination of age and credited service that when added together equal 70 or more, provided that the member, prior to January 1, 2005 completed at least 5 years of credited service and attained a combination of age and credited service that when added together equal 68 or more.

Pension Benefits

Pension benefits are based on a participant's average monthly salary and years of credited service, as defined in the Pension Statute. The maximum normal retirement pension is 90.0% of the participant's average monthly salary.

Pension benefits are increased annually by a Cost of Living Adjustment (COLA) equal to 3.0% of the original benefit amount, not compounded, for all persons receiving a pension or survivor benefit as of January 1 of the year in which the increase is made, provided the person receiving the pension was an employee on or before December 31, 2004, and the person receiving the survivor benefit is an eligible survivor of a person who was an employee on or before December 31, 2004.

Effective January 1, 2005, pension and survivor benefits for all retirees and eligible survivors of Group A and Group B are increased annually by 2.0%, not compounded, for all persons receiving a pension or survivor benefit as of January 1 of the year in which the increase is made, provided the person receiving the pension was hired or rehired on or after January 1, 2005. Retirees who received a 3.0% COLA and who are rehired on or after January 1, 2005 will also receive a 3.0% COLA on the subsequent benefit. Individuals participating in Group D do not have a COLA provision.

As a result of SB 2190, beginning with fiscal year 2018, the COLA will be linked to HMEPS' investment rate of return and will be the same for all three groups (except for Group D members who terminated employment prior to July 1, 2017 who will not receive a COLA). The amount of the COLA will be the five-year average investment return minus 5.0%, and then multiplied by 50.0%, but not less than 0% or greater than 2.0%.

A participant who is eligible to receive a deferred benefit may elect to receive his or her pension benefit in an early lump sum distribution if the actuarial present value of the participants benefit is less than $20,000 on the date of termination. Early lump-sum distributions are subject to approval by the Board.

Disability Benefits

Service-connected disability benefits for covered participants are based on the participant's normal accrued benefit, but are not less than 20.0% of the participant's final monthly salary. There is no minimum credited service requirement to qualify for service-connected disability benefits.

Participants with at least five years of credited service who become disabled may qualify for a non-service connected disability allowance equal to the participant's normal accrued pension benefit.

Survivor Benefits

Survivor benefits are provided for a member's surviving spouse and/or dependent children. A deceased member must have had at least five years of credited service at the time of his or her death to qualify for survivor benefits unless death was caused by a service-connected incident as defined by the Pension Statute. For a Group D member, eligibility for survivor benefits for a death that occurs while actively employed are determined in the same manner as for Group A and Group B. For death that occurs after the Group D member's termination of employment, the payment of a death benefit depends on whether the participant elected an optional annuity.

A Group D participant with at least five years of credited service has the option to elect an actuarially equivalent amount under one of three joint annuity options in lieu of a normal benefit with no survivor benefit. If a Group D participant with at least five years of credited service elects a normal benefit, no death or survivor benefit is payable. If a Group D participant with at least five years of credited service makes no optional annuity election and dies prior to retirement, the surviving spouse is eligible to receive an amount equal to the amount that would have been paid if the participant had elected a 50.0% joint and survivor annuity and named the spouse as the designated beneficiary.

Effective July 1, 2011, eligible unmarried Group A and Group B members who terminate service on or after June 30, 2011 have the option to select a joint and survivor (J&S) annuity option in lieu of a normal benefit.

The optional annuity election, which was already available to vested Group D members and vested Group B members who separated from service prior to September 1997, allows eligible participants to elect to take a reduced pension and provide an annuity (50.0% J&S, 100.0% J&S, or 10-year Guarantee) to a designated annuitant

In order to qualify for survivor benefits other than under an annuity option, a surviving spouse must have been married to the deceased participant at the time the participant's employment with the City or System was terminated and at the time of the participant's death. To qualify for benefits, a child must be the natural, or legally adopted, dependent child of the deceased participant at the time of the participant's death and (a) must be under age 21 and never have been married, or (b) have been totally and permanently disabled before age 18 and at the time of the participant's death and have never been married. Dependent benefits are payable to the legal guardian of the dependents(s) unless the dependent is at least 18 years of age.

As a result of SB 2190, beginning with fiscal year 2018 there will be a variety of changes to the structure of survivor benefits which will reduce the cost to the System. However, there will be no change to survivor benefits currently being paid or payable to eligible survivors of participants who died prior to July 1, 2017.

Deferred Retirement Option Plan (DROP)

A Group A or Group B participant who is eligible to retire, except that he or she has not retired and remains a full-time employee of the City, or the System, or has been separated from service for not more than thirty calendar days, may elect to participate in the Deferred Retirement Option Plan (DROP). The DROP provides that a monthly amount (monthly DROP credit) will be credited to a notional account (DROP Account). Interest is credited to the DROP Account at a rate approved by the Board, compounded at an interval approved by the Board. Beginning January 1, 2005 the DROP interest rate is equal to half the return on the System's investments for the prior fiscal year, with a minimum rate of 2.5% and a maximum rate of 7.5%, compounding currently at daily intervals. The first day of DROP participation is the DROP Entry Date. The day a participant's fully executed DROP election is accepted by the System is the DROP Election Date. Normal pension benefits cease to accrue on the DROP Entry Date, except that all Cost-of-Living-Adjustments (COLA) noted previously apply to DROP participants who are active employees under the Pension Statute.

As a result of SB 2190, the formula for calculating the DROP interest rate will change beginning with fiscal year 2018. The interest rate will equal half of HMEPS' five-year average investment return with a minimum of 2.5%

and maximum of 7.5%. Also, beginning in fiscal year 2018, the COLA will only be credited to the DROP account of an active employee if the employee is at least age 62 on January 1 of that year.

Effective January 1, 2005, a participant's election to participate in DROP cannot establish a DROP entry date that occurs prior to the date of the System's receipt of the member's request to participate in DROP. The monthly DROP credit is based on the participant's years of credited service and average monthly salary as of DROP Entry Date, and benefit accrual rates in effect on DROP Election Date.

DROP participation terminates when a DROP participant's employment with the City, or the System, terminates. The balance of the participant's notional DROP account (DROP Benefit) at the time of such termination is an amount equal to the sum of a participant's monthly DROP credits and interest accrued on such amount up to the time the participant's employment terminates. A DROP Benefit is subject to approval by the Board. A DROP participant eligible to receive a DROP Benefit distribution may elect to receive the distribution in a lump-sum, partial distribution, in substantially equal periodic payments over a period of time approved by the Board, or in a combination of a lump-sum followed by substantially equal periodic payments over a period of time approved by the Board until the balance of the DROP Benefit is depleted. The DROP Benefit is not available to a DROP participant until such participant's employment with the City or the System has terminated and the participant has made a DROP distribution election.

Group D participants do not participate in DROP.

Refunds of Participant Contributions

Group A participants who terminate employment prior to being approved for retirement may request a refund of their accumulated employee contributions, without interest, in lieu of a pension or in the event the participant has fewer than five years of credited service.

As a result of SB 2190, beginning in fiscal year 2018 Group B and D participants will also have this option.

NOTE 2 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The accompanying basic financial statements are presented in accordance with generally accepted accounting principles established by the Governmental Accounting Standards Board (GASB), which designates the accounting principles and financial reporting standards applicable to state and local governmental units. The accompanying basic financial statements include solely the accounts of the System, which include all programs, activities and functions relating to the accumulation and investment of the assets and related income necessary to provide the pension benefits required by the governing statutes and amendments thereto.

Basis of Accounting

The economic resources basis of accounting is the method by which revenues and expenses are recognized in the accounts and reported in the basic financial statements. The accompanying basic financial statements are presented on the accrual basis of accounting. Under the accrual basis of accounting, revenues, which include investment and other income, are recognized when they are earned and collection is reasonably assured, and expenses are recognized when the liability is incurred. Accrued income, when deemed not collectible, is charged to operations. Participant and employer contributions are recognized as revenues in the period in which they are due pursuant to the Pension Statute and formal recommitments. Benefits and refunds are recognized when due and payable in accordance with the terms of the Pension Statute.

Reporting Entity

The System is a component unit of the City. Therefore, its basic financial statements and required supplemental information are included in the City's Comprehensive Annual Financial Report.

Investment Valuation and Income Recognition

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. The fair value of limited partnerships and real estate trusts are based on the System's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Short-term investments are carried at amortized cost, which approximates fair value.

Purchases and sales of investments and forward foreign exchange contracts are recorded on the trade date. Gains or losses on the forward foreign exchange contracts are recognized when the contract is complete. Dividend income is recorded on the ex-dividend date. Interest and income from other investments are recorded when earned. Net appreciation/depreciation on investments represents realized gains and losses on sales of investments during the year and the change in the fair value of investments between years.

Furniture, Fixtures and Equipment

Furniture, fixtures and equipment are recorded at cost less accumulated depreciation and amortization. Depreciation and amortization expense is computed using the straight-line method over the estimated useful lives of the related assets ranging from three to ten years. Any gain or loss on the retirement of assets is recognized currently. Maintenance and repairs are charged to expense while expenditures for improvements greater than or equal to $5,000 are capitalized.

Compensated Employee Absences

The System employees earn paid leave (vacation and sick leave) based on years of service and may accumulate them subject to certain limitations and be paid upon termination or resignation from the System. The amount paid is determined based on the departing employee's regular rate of pay at separation. Compensated employee absences (vacation, compensatory time off, annual leave and sick leave) are accrued as an expense and liability in the basic financial statements at their most current rate.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the basic financial statements and the reported amounts of additions and deductions during the reporting period. Accordingly, actual results could differ from those estimates.

Income Tax Status

The System obtained its latest determination letter on April 14, 2017, in which the Internal Revenue Service stated that the System is in compliance with the applicable requirements of the Internal Revenue Code. The System has been amended since receiving the determination letter. However, the System's management and Board believe that the System is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code.

Costs of Administering the System

The costs of administering the System are paid by the System from current earnings pursuant to an annual fiscal budget adopted by the Board.

New Accounting Pronouncements

GASB Statement No. 75, **Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (OPEB)**

This Statement establishes new accounting and financial reporting requirements for governments whose employees are provided with OPEB. The requirements of this Statement are effective for financial statements for fiscal years beginning after June 15, 2017. System management has not yet determined the impact of the adoption of this standard.

GASB Statement No. 82, **Pension issues – and amendment of GASB Statements No. 67, No. 68, and No. 73**

This statement addresses the presentation of payroll-related measures in required supplementary information; the selection of assumptions and the treatment of deviations from guidance in Actuarial Standards of Practice for financial reporting purposes; and the classification of payments made by employers to satisfy plan member contribution requirements. The requirements of this Statement are effective for financial statements for fiscal years beginning after June 15, 2016. The provisions for this statement were implemented by the System effective for its June 30, 2017 financial statements.

Reclassifications

Certain reclassifications have been made to the 2016 financial statements to conform to the 2017 financial statement presentation. These reclassifications had no effect on the changes in fiduciary net position.

NOTE 3 — CONTRIBUTIONS AND FUNDING POLICY

Group A active participants are required to contribute to the System amounts as set forth in the Pension Statute. As of June 30, 2017 and 2016, the Group A participant contribution rate was 5.0% of a participant's qualifying salary. Group B and Group D participants do not contribute to the System. As a result of SB 2190, beginning in fiscal year 2018, all active participants will contribute to the System.

Under the System's Pension Statute, the City is required to contribute amounts to the System to provide funding on an actuarial reserve basis for normal cost plus the level of percentages of payroll payments based on its amortization period for the unfunded actuarial liability. On July 1, 2011, the Amended and Restated Meet and Confer Agreement (Agreement) between the System and the City went into effect.

Under the Agreement, the City contributed $98.5 million to the System in fiscal year 2012, which was established under the Agreement as 19.4% of covered payroll. For each of the succeeding fiscal years, the City contributed either the previous fiscal year's rate (27.4% of covered payroll in fiscal year 2016) plus 2 percent of covered payroll, or the previous fiscal year's contribution amount plus $10 million, whichever was greater. Under the Agreement, this provision was to stay in place until the actuarially required contribution (ARC) rate was met as determined by the HMEPS actuary, at which time the ARC would become the effective contribution rate.

However, under SB 2190, the City will pay the full ARC beginning with fiscal year 2018. The "Total City Contribution" will consist of the sum of (a) an actuarially determined percentage of payroll ("City Contribution Rate") multiplied by actual payroll and (b) a fixed dollar amount ("City Contribution Amount") which is based on the Unfunded Actuarial Accrued Liability (UAAL) as of July 1, 2016 ("Legacy Liability"). The Legacy Liability payment is amortized over 30 years and grows at 2.75% per year regardless of the actual payroll growth rate.

Historical contribution trend information is provided as required supplementary information on page 49.

The City's contribution rate, based on the Agreement, was 29.4% for fiscal year 2017, and 27.4% for fiscal year 2016, and was not set by actuarial valuation. The ARC for fiscal years 2017 and 2016 was calculated at 31.8% and 27.4%, respectively, as shown in the July 2016 and 2015 Actuarial Valuations.

NOTE 4 — NET PENSION LIABILITY

The Total Pension Liability as of June 30, 2017, is based on the actuarial valuation date of July 1, 2016, and rolled-forward using generally accepted actuarial procedures. The net pension liability is measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of asset.

The Schedule of Net Pension Liability presents multi-year trend information (beginning with fiscal year 2014) about whether the plan fiduciary net positions are increasing or decreasing over time relative to the total pension liability. In addition to the table below, this information is presented as a required schedule in the Required Supplemental Information section beginning on page 48.

FY Ending June 30	Total Pension Liability	Fiduciary Net Position	Net Pension Liability	Fiduciary Net Position as a % of Pension Liability
2014	$ 4,366,635,542	$ 2,464,438,877	$ 1,902,196,665	56.44%
2015	4,531,179,075	2,456,543,559	2,074,635,516	54.21%
2016	5,034,389,959	2,400,023,240	2,634,366,719	47.67%
2017	4,959,510,179	2,602,664,718	2,356,845,461	52.48%

Actuarial valuation of the System involves estimates and assumptions about events in the future. Amounts determined regarding the net pension liability are subject to revision as actual results are compared with past expectations and new estimates are made regarding the future. The last experience study was performed in 2015 based on the July 1, 2014 valuation. A summary of the actuarial assumptions as of the latest actuarial valuation is shown below.

Valuation Date: July 1, 2016

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	Market Value of Assets
Inflation	2.25%
Salary Increases	3.00% to 5.25% including inflation
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2009 – 2014.
Mortality	RP-2000 Mortality Table scaled by 90% for males and 80% for females. The rates are then projected on a fully generational basis by scale BB.

Note: Values reflect changes in benefits as a result of SB 2190. For more detail see July 1, 2016 valuation report.

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

A single discount rate of 7.0% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.0%. The projection of cash flows used to determine this single discount rate assumed that plan contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The table below illustrates the sensitivity of the net pension liability to changes in the discount rate. In particular, the table presents the plan's net pension liability, if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage point higher than the single discount rate.

1% Decrease 6.00%	Current Single Rate Assumption 7.00%	1% Increase 8.00%
$2,910,597,622	$2,356,845,461	$1,921,992,934

NOTE 5 — DEFERRED RETIREMENT OPTION PLAN (DROP) BALANCES

The DROP provides that a monthly amount (monthly DROP credit) will be credited to a notional account (DROP Account). A DROP Benefit is subject to approval by the System's Board. The DROP Benefit is not available to a DROP participant until such participant's employment with the City or the System has terminated and the participant has made a DROP distribution election. For a more detailed description of DROP terms, see Note 1.

DROP balances for all active and inactive participants totaled $529.0 million in fiscal year 2017, and $502.0 million in fiscal year 2016.

NOTE 6 — CASH AND CASH EQUIVALENTS

For cash deposits and cash equivalents, Custodial Credit Risk is the risk that in the event of a bank failure, the System's deposits may not be returned to it. The System's deposits are held by State Street Bank and Trust Company. As of June 30, 2017 and 2016, the System had fair value bank balances of $7,727,344 and $7,491,470, respectively, which are in demand deposit accounts subject to coverage by Federal Deposit Insurance Corporation (FDIC) but not collateralized. The standard deposit insurance coverage limit is $250,000. The System does not have a deposit policy for custodial credit risk; however, the management believes that the System's credit risk exposure is mitigated by the financial strength of the banking institution in which the deposits are held.

NOTE 7 — DEFERRED COMPENSATION PLAN

The System offers its employees a deferred compensation plan (DCP) created in accordance with Internal Revenue Code Section 457. The DCP, available to all full-time employees of the System, permits employees to defer a portion of their salary until future years. Distributions from the DCP are not available to employees until termination, retirement, death or unforeseeable emergency. The DCP has a third party administrator, Empower Retirement, formerly Great-West Retirement Services, and the cost of administration and funding is borne by the DCP participants. Amounts deferred are held in trust by Empower Retirement and, since the System has no fiduciary responsibility for the DCP, these amounts are not reflected in the accompanying financial statements in accordance with GASB Statement No. 32, Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans.

NOTE 8 — POST-EMPLOYMENT BENEFITS OTHER THAN PENSION BENEFITS

Health Care Plan Description

The System provides health care benefits (i.e., medical, prescription, dental) to current and retired System employees and their beneficiaries. The System also provides System employees with life insurance, and offers System retirees with $5,000 of life insurance. A System employee is eligible for retiree health benefits and life insurance if the individual has at least five years of full-time service with the System and meets at least one of the following conditions:

- Has retired due to disability
- Age 62 or greater
- Total of years of age and years of full-time service are greater than or equal to 70
- Employee is eligible to begin receiving a retirement pension within five years after the employee's termination of employment.

The health care benefits are partially self-funded by the System. The System is fully responsible for the self-funded benefits. An insurance company processes claims and provides other services to the System related to the self-funded benefits. The insurance company does not insure or guarantee the self-funded benefits. However, the System's plan includes an excess loss insurance established by the insurance company and the System is insured for the aggregate excess loss of $20,000 maximum amount per covered person.

Funding Policy and Other Post-Employment Benefits (OPEB)

Contribution requirements of the System's retired employees are established and may be amended by the Board. The System currently offers a choice of two insurance plans, a conventional preferred provider organization (PPO) plan and a high deductible health plan. Retiree health care contributions depend on their choice of plan. For life insurance, the retiree pays 100.0% of the cost of the premium.

The plan is funded on a pay-as-you-go basis and does not issue a stand-alone report.

The System's annual Other Post-Employment Benefits (OPEB) cost is calculated based on the Annual Required Contribution (ARC) of the employer, and is an amount that is actuarially determined in accordance with the parameters of GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover the normal cost each year and to amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty years. The latest actuarial valuation, as of June 30, 2015, covers a three year period through fiscal year 2017. Additionally, the System's annual OPEB costs are listed in the table below:

	June 30, 2017	June 30, 2016	June 30, 2015
Annual required contribution	$ 591,931	$ 574,691	$ 557,952
Interest on OPEB obligation	125,650	105,855	86,578
Adjustment to ARC	(116,414)	(98,074)	(80,214)
Annual OPEB cost (end of year)	601,167	582,472	564,316
Net estimated employer contributions	(139,179)	(142,576)	(135,935)
Increase in net OPEB obligation	461,988	439,896	428,381
Net OPEB obligation - as of beg. of year	2,792,234	2,352,338	1,923,957
Net OPEB obligation - as of end of year	$ 3,254,222	$ 2,792,234	$ 2,352,338

Three-Year Trend Information

Year Ended	Annual OPEB Cost	Percentage Contributed	Net OPEB Obligation
6/30/2015	$ 564,316	24.1%	$ 2,352,338
6/30/2016	$ 582,472	24.5%	$ 2,792,234
6/30/2017	$ 601,167	23.2%	$ 3,254,222

Funded Status and Funding Progress

The most recent funded status of the System's retiree health care plan, under GASB Statement No. 45 as of June 30, 2015 is as follows:

Actuarial Valuation Date as of June 30	Actuarial Value of Assets (a)	Accrued Liability (ML) (b)	Unfunded AAL (MAO) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	Percentage of Covered Payroll ((b-a)/c)
2015	$0	$5,167,086	$5,167,086	0%	$2,608,493	198.1%

Under the reporting parameters, the System's retiree health care plan is 0% funded with an estimated actuarial accrued liability exceeding actuarial assets by $5,167,086 at June 30, 2015. The above funded status figures are required to be updated every three years. The three-year trend chart on page 52 was prepared by the System, while all other listed figures presented were prepared by the System's actuary, Gabriel, Roeder, Smith & Company. The System's postemployment benefit plan is a single-employer plan, and it is not administered through a trust or equivalent arrangement.

Actuarial Methods and Assumptions

The projected unit credit, level percent of payroll actuarial cost method is used to calculate the GASB ARC for the System's retiree health care plan. Using the plan benefits, the present health premiums and a set of actuarial assumptions, the anticipated future payments are projected. The projected unit credit method then provides for a systematic funding for these anticipated payments.

The yearly ARC is computed to cover the cost of benefits being earned by covered members as well as to amortize a portion of the unfunded accrued liability. If experience is in accordance with the assumptions used, the ARC will increase at approximately the same rate as active employee payroll, and the ARC as a percentage of payroll will remain basically level on a year to year basis. Projections of health benefits are based on the plan as understood by the System and include the types of benefits in force at the valuation date and the pattern of sharing benefit costs between the System and the System's employees to that point. Actuarial calculations reflect a long-term volatility in actuarial accrued liabilities and the System's retiree healthcare plan:

Actuarial Methods and Assumptions

Investment rate of return	4.5% net of expenses
Salary Increases	Graded rates based on years of service (range from 3.0 percent to 6.0 percent)
Payroll growth factor	3.0% per year
General inflation rate	3.0% per year
Actuarial Cost Method	Projected Unit Credit Cost Method
Amortization Method	Level Percentage of Pay
Amortization Period	30 Year, Open
Health Care Inflation Rate	Starting at 7.25% in 2016 and decreasing by ¼ % each year to 4.5% by 2027

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events in the future. Amounts determined regarding the funded status and the annual required contributions of the System's retiree health care plan are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future. The required schedule of funding progress for OPEB presented as required supplementary information (see schedule 5) provides multiyear trend information that shows whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

NOTE 9 — INVESTMENTS

Portions of the System's investments are classified as security investments. A security is a transferable financial instrument that evidences ownership or creditorship. Investments in commingled funds, limited partnerships, real estate trusts, and loans and mortgages are investments that are evidenced by contracts rather than securities. The fair values of the System's investments at June 30 are presented by type:

	2017	2016
Short-term investment funds	$ 54,125,554	$ 79,291,774
Government securities	72,675,493	92,416,960
Corporate bonds	202,121,498	200,401,238
Capital stocks	540,683,622	606,635,716
Commingled funds	653,822,339	422,324,923
Real assets	261,822,756	271,114,650
Alternative investments	809,591,991	724,612,264
Total investments	$ 2,594,843,253	$ 2,396,797,525

Rate of Return

For the fiscal year ended June 30, 2017, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was 12.2% vs. 0.9% at June 30, 2016. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. In addition, the money weighted rate of return is similar to the gross time-weighted return of 12.7% that appears in Table 1 on page 19. The two approaches are slightly different methods of calculating investment returns.

Investment Policy

The Board has the authority to establish the investment policy and the asset allocation policy. The general investment objective is to obtain a reasonable long term total return consistent with the degree of risk assumed while emphasizing the preservation of capital. The allocation is 35.0% Global Equity, 15.0% Fixed Income, 10.0% Real Estate, 12.5% Inflation Linked, 17.5% Private Equity and 10.0% Absolute Return. For the System's actual allocation, see the chart on page 18.

Expected Return Arithmetic Basis

Asset Class	Target Allocation	Real Return Arithmetic Basis	Long term Expected Portfolio Real Rate of Return
Global Equity	35.0%	6.3	2.21%
Private Equity	17.5%	10.7	1.87%
Core Fixed Income	7.5%	2.0	0.15%
High Yield	7.5%	3.7	0.28%
Real Estate	10.0%	7.1	0.71%
Absolute Return	10.0%	4.5	0.45%
Inflation-Linked Assets	12.5%	7.7	0.96%
Totals	100.0%		6.63%
Inflation			1.60%
Expected arithmetic nominal return			8.23%

These returns are developed on a 10-year forward looking basis, using historical risk and correlation adjusted to recent trends. Return expectations represent a passive investment in the asset class and do not reflect value added from active management. An optimizer is used to generate an efficient frontier using these estimates; the efficient frontier represents the asset class distribution which would generate the maximum return for a given level of risk. The Board chooses an asset allocation that aims to maximize the safety of promised benefits while minimizing the cost of funding those benefits.

In the first quarter of fiscal year 2018, a new target allocation was adopted by the Board, effective in October of 2017 which created a new asset class (Private Credit) and included other minor changes.

The Master Custodian

The System's Board, in accordance with the power and authority conferred under the Texas Statutes, engaged State Street Bank and Trust Company (Custodian) as custodian of the assets of the System, and in said capacity, the Custodian is a fiduciary of the System's assets with respect to its discretionary duties including safekeeping of the System's assets. The Custodian has established and maintains a custodial account to hold, or direct its agents to hold, for the account of the System all assets that the Board shall from time to time deposit with the Custodian. All rights, title and interest in and to the System's assets shall at all times be vested in the System.

In holding System assets, the Custodian shall act with the same care, skill, prudence and diligence under the prevailing circumstances that a prudent person acting in like capacity and familiar with matters of this type would use in the conduct of an enterprise with a like character and with like aims.

Further, the Custodian shall hold, manage and administer the System's assets for the exclusive purpose of providing the benefits to the members and the qualified survivors of the System.

The Board shall manage the investment program of the System in compliance with all applicable Federal and State statutes and regulations concerning the investment of pension assets. The Board has adopted an Investment Policy Statement to set forth the factors involved in the management of investment assets for the System and which is made part of every investment management agreement.

Custodial Risk

For an investment, custodial risk is the risk that, in the event of the failure of the counterparty, the System will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial risk if the securities are uninsured, are not registered in the name of the System, and are held by either the counterparty or the counterparty's trust department or agent but not in the System's name.

Concentration Risk

The allocation of assets among various asset classes is set by the Board. For major asset classes (e.g., global equity, fixed income, real estate, private equity, inflation-linked, and absolute return), the System will further diversify by employing managers with demonstrated skills in complementary areas of expertise. The managers retained will utilize varied investment approaches, but, when combined will exhibit characteristics that are similar, but not identical, to the asset class proxy utilized in the strategic asset allocation plan. The Investment Policy Statement of the System provides that no public market investment manager shall have more than 20.0% (at market value) of the System's assets.

Representative guidelines by type of investment are as follows:

U.S. Equity Managers

- A manager's portfolio shall contain a minimum of twenty-five issues.
- No more than 5.0% of the manager's portfolio at market shall be invested in American Depository Receipts (ADRs).
- No individual holding in a manager's portfolio may constitute more than 5.0% of the outstanding shares of an issuer.
- No individual holding may constitute more than 5.0% of a manager's portfolio at cost or 10.0% at market.
- Short sales, purchases on margin, non-negotiable or otherwise restricted securities are prohibited, other than where expressly permitted.
- While there are no restrictions on cash, a manager must notify the System if the cash position exceeds 10.0%.

International Equity Managers

- Not more than 5.0% at cost and 10.0% at market value of a manager's portfolio shall be invested in the securities of any one issuer.
- Not more than 30.0% of the assets of a manager's portfolio (at market value) shall be invested in any one country with the exception of Japan.
- While there are no restrictions on cash, a manager must notify the System if the cash position exceeds 10.0%.
- Forward foreign currency exchange contracts will be limited as follows:
    a) Forward and future exchange contracts of any currency may be used to hedge up to 100.0% of the currency exposure of the portfolio in aggregate or the currency exposure to any single country,
    b) Foreign exchange contracts with a maturity exceeding 12 months may not be made, and
    c) Currency options may be entered into in lieu of or in conjunction with forward sales of currencies. The same effective limitations specified in (a) and (b) above will apply to currency options.
- Fixed Income Managers
- No more than 10.0% of a manager's portfolio at market shall be invested in the securities of any single issuer, with the exception of the U.S. government and its agencies.

As of June 30, 2017, across all asset classes, the System held two securities with a market value over 5.0% of the System's fiduciary net position. The security, BlackRock MSCI ACWI Minimum Volatility Index, had a fair value of $203 million, representing 7.8% of the System's portfolio as of June 30, 2017. This investment also exceeded the 5.0% threshold in 2016, and was the only investment to do so that year. In addition, the BlackRock ACWI Index had a fair market value of $140 million, representing 5.4% of the System's portfolio as of June 30, 2017.

Interest Rate Risk

The System invests in fixed income securities including, but not limited to, investments representing instruments with an obligated fixed rate of interest including public and private debentures, mortgages, investments in life insurance general accounts and guaranteed investment contracts, with maturities greater than one year, and options/futures. Instruments may have an investment grade or non-investment grade rating. Purchases and sales, investment selection and implementation of investment strategies are delegated to the discretion of the investment manager, subject to compliance with its management agreement and the Investment Policy Statement.

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of the investment. Duration is a measure of a debt investment's exposure to fair value changes arising from changes in interest rates. It uses the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates and vice-versa. Duration is the measure of a bond price's sensitivity to a 100-basis point change in interest rates. The duration of the System's debt securities is managed by the active managers.

At June 30, 2017, the following table shows the System's investments by type, amount and the effective duration rate.

	Effective Duration	Domestic	International	Fair Value
Collateralized mortgage obligations	4.25	$ 8,700,210	$ -	$ 8,700,210
Convertible bonds	4.50	9,446,867	-	9,446,867
Corporate bonds	5.86	143,316,558	363,645	143,680,203
GNMA/FNMA/FHLMC	3.07	30,653,502	-	30,653,502
Municipal	7.50	782,602	-	782,602
Government issues	6.85	37,996,374	3,243,014	41,239,388
Misc. receivable (auto/credit card)	4.10	9,958,569	-	9,958,569
Bank Loan[1]	N/A	30,335,650	-	30,335,650
Total		$ 271,190,332	$ 3,606,659	$ 274,796,991

[1] The bank loan market, or "leveraged loan" market as it is sometimes known, comprises debt with below investment grade credit ratings. Bank loans generally rank senior to the company's other debt, and offer higher credit ratings, and less risk than high yield bonds. Bank loans typically use floating rather than fixed interest rates. Companies often tap this market to fund leveraged buyouts.

At June 30, 2016, the following table shows the System's investments by type, amount and the effective duration rate.

	Effective Duration	Domestic	International	Fair Value
Collateralized mortgage obligations	3.53	$ 9,464,489	$ -	$ 9,464,489
Convertible bonds	3.55	9,598,675	-	9,598,675
Corporate bonds	5.52	135,905,870	4,070,028	139,975,898
GNMA/FNMA/FHLMC	2.31	31,372,741	-	31,372,741
Municipal	8.79	1,677,616	-	1,677,616
Government issues	5.95	54,634,416	4,732,189	59,366,605
Misc. receivable (auto/credit card)	2.26	5,797,190	-	5,797,190
Other asset backed securities	2.46	266,066	-	266,066
Bank Loan[1]	N/A	33,033,965	2,264,953	35,298,918
Total		$ 281,751,028	$ 11,067,170	$ 292,818,198

[1]The bank loan market, or "leveraged loan" market as it is sometimes known, comprises debt with below investment grade credit ratings. Bank loans generally rank senior to the company's other debt, and offer higher credit ratings, and less risk than high yield bonds. Bank loans typically use floating rather than fixed interest rates. Companies often tap this market to fund leveraged buyouts.

Credit Risk

The quality ratings of investments in fixed income securities are set forth in the Investment Policy Statements as follows:

- All issues purchased by investment grade fixed income managers must be of investment grade quality BAA (Moody's) or BBB (S&P) unless expressly authorized by the Board, in which case a minimum B rating shall apply, with a maximum limit of non-investment grade credits of 20.0% at market.
- For global opportunistic fixed income/high yield securities, more than 50.0% of a manager's portfolio at market shall be invested in non-investment grade fixed income securities, i.e. those with ratings of BA1 (Moody's), BB+ (Standard &Poor's), or lower, or unrated bonds, including but not limited to corporate bonds, convertible bonds, and preferred stocks.

The quality ratings of investments in fixed income securities as described by nationally recognized statistical rating organizations at June 30, 2017 are as follows:

QUALITY RATING	ASSET BACKED SECURITIES	CORP BONDS & BANK LOANS	CMO	US GOV'T AGENCIES	GOV'T ISSUES	MUNICIPALS	TOTAL	% of HOLDINGS
AAA	$ 4,885,456	$ 431,684	$ 1,837,838	$ -	$ -	$ 363,806	$ 7,518,784	0.29%
AA	754,253	4,542,040	-	-	442,041	376,335	6,114,669	0.24%
A	-	15,789,985	430,527	-	2,284,689	42,461	18,547,662	0.71%
BBB	340,771	35,110,741	-	-	-	-	35,451,512	1.37%
BB	-	23,059,840	-	-	-	-	23,059,840	0.89%
B	-	39,926,933	-	-	101,526	-	40,028,459	1.54%
CCC	-	22,317,690	-	-	-	-	22,317,690	0.86%
CC	-	997,500	-	-	-	-	997,500	0.04%
C	-	138,750	-	-	-	-	138,750	0.01%
D	-	73,493	-	-	-	-	73,493	0.00%
NA*	3,978,089	41,074,064	6,431,845	30,653,502	38,411,132	-	120,548,632	4.65%
TOTAL FIXED INCOME SECURITIES	$ 9,958,569	$ 183,462,720	$ 8,700,210	$ 30,653,502	$ 41,239,388	$ 782,602	$ 274,796,991	10.59%
OTHER INVESTMENTS							$ 2,320,046,262	89.41%
TOTAL INVESTMENTS							$ 2,594,843,253	100.00%

*NA = Not Available

The quality ratings of investments in fixed income securities as described by nationally recognized statistical rating organizations at June 30, 2016 are as follows:

QUALITY RATING	ASSET BACKED SECURITIES	CORP BONDS & BANK LOANS	CMO	US GOV'T AGENCIES	GOV'T ISSUES	MUNICIPALS	TOTAL	% of HOLDINGS
AAA	$ 3,869,674	$ 710,900	$ 4,190,896	$ -	$ -	$ 643,019	$ 9,414,489	0.39%
AA	1,679,520	5,266,644	200,938	-	1,601,393	650,527	9,399,022	0.39%
A	-	17,843,787	448,873	-	2,387,731	384,070	21,064,461	0.88%
BBB	-	22,737,039	-	-	-	-	22,737,039	0.95%
BB	-	34,439,715	-	-	-	-	34,439,715	1.44%
B	-	32,749,433	-	-	79,817	-	32,829,250	1.37%
CCC	-	21,600,861	-	-	-	-	21,600,861	0.90%
CC	-	458,925	-	-	-	-	458,925	0.02%
C	-	-	-	-	-	-	-	0.00%
D	-	5,313,038	-	-	-	-	5,313,038	0.22%
NA*	514,062	43,753,149	4,623,782	31,372,741	55,297,664	-	135,561,398	5.66%
TOTAL FIXED INCOME SECURITIES	$ 6,063,256	$ 184,873,491	$ 9,464,489	$ 31,372,741	$ 59,366,605	$ 1,677,616	$ 292,818,198	12.22%
OTHER INVESTMENTS							$ 2,103,979,327	87.78%
TOTAL INVESTMENTS							$ 2,396,797,525	100.00%

*NA = Not Available

Foreign Currency Risk

International securities investment managers are expected to maintain diversified portfolios by sector and by issuer using the System's Investment Policy Statement.

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. Each investment manager, through the purchase of units in a commingled investment trust fund or international equity mutual fund, establishes investments in international equities. The System has an indirect exposure to foreign currency fluctuation as of June 30, 2017 and June 30, 2016 as follows:

	2017 Fair Value	2016 Fair Value
Australian Dollar	$ 3,231,720	$ 4,425,907
Brazilian Real	577	1,690,713
Canadian Dollar	5,674,371	8,518,545
Danish Krone	5,129,917	5,814,928
Euro Currency	66,971,157	77,078,050
Hong Kong Dollar	-	9,845,320
Indonesian Rupiah	-	805,525
Japanese Yen	9,637,241	25,813,750
Malaysian Ringgit	19,482	21
Mexican Peso	2,284,689	4,209,586
New Israeli Sheqel	33	506,910
New Taiwan Dollar	-	5,307,288
New Zealand Dollar	275	-
Norwegian Krone	-	2,718,326
Pound Sterling	30,425,317	52,627,417
Singapore Dollar	-	2,029,872
South African Rand	1,570,222	2,442,033
South Korean Won	95,681	4,200,041
Swedish Krona	2,462,658	4,936,370
Swiss Franc	11,801,532	14,730,333
Thailand Baht	2,159,398	1,202,625
Turkish Lira	-	1,644,756
	$ 141,464,270	$ 230,548,316

Schedule 8 on page 56 lists the System's investment and professional service providers.

Securities Lending

The System is authorized under its Investment Policy Statement to participate in a securities lending program through its agent and Custodian. Under this program, for an agreed upon fee, System-owned investments are loaned to a borrowing financial institution. During the years ended June 30, 2017 and 2016, the Custodian lent the System's securities and received cash and securities issued or guaranteed by the United States government as collateral. The cash collateral received on each loan is invested together with the cash collateral of other lenders, in a collective investment pool comprised of a liquidity pool and a duration pool. As of June 30, 2017, and June 30, 2016, the liquidity pool had an average duration for USD collateral of 29.38 and 42.78 days, and an average weighted final maturity of 107.80 and 82.66 days respectively. As of June 30, 2017 and 2016, the duration pool for USD collateral had an average duration of 22.55 and 44.57 days and an average weighted final maturity of 3,187 and 2,211 days respectively. Because the loans were terminable at will, their duration did not generally match the duration of the investments made with cash collateral.

Borrowers are required to deliver collateral for each loan equal to: (i) in the case of loaned securities denominated in United States dollars or whose primary trading market was located in the United States or sovereign debt issued by foreign governments, 102.0% of the market value of the loaned securities; and (ii) in the case of loaned securities not denominated in United States dollars or whose primary trading market was not located in the United States, 105.0% of the market value of the loaned securities. The Custodian does not have the ability to pledge or sell securities delivered for collateral, absent a borrower's default. The Board and the borrowers maintained the right to terminate all securities lending transactions on demand.

On March 26, 2009, the Board amended its securities lending agreement with its Custodian to clarify responsibilities regarding borrower defaults. The amendment requires that if at the time of a default by a borrower, the Custodian shall indemnify the System against the failure of the borrower to return the loaned securities by purchasing a number of replacement securities equal to the number of such unreturned loaned securities, to the extent that such replacement securities are available on the open market. To the extent that such proceeds are insufficient or the collateral is unavailable, the purchase of replacement securities shall be made at the Custodian's expense. If replacement securities are unavailable, the Custodian will credit to the System's account an amount equal to the market value of the unreturned loaned securities for which replacement securities are not purchased. The Board also approved a motion limiting the System's securities lending program utilization level (on-loan balance as a percentage of lendable assets) at 33.5%.

At year-end, the System had no credit risk exposure to borrowers because the amount of collateral received exceeded the value of securities on loan. The cash collateral held and the fair value of securities on loan as of June 30, 2017 (USD) was $47,371,287 and $54,432,020, respectively and $73,941,330 and $89,720,222 as of June 30, 2016, respectively.

The fair values of the underlying securities lent as of June 30, are as follows:

	2017				2016			
	Collateral Received			Fair Value of Cash and Securities on Loan	Collateral Received			Fair Value of Cash and Securities on Loan
	Cash	Securities	Total		Cash	Securities	Total	
Domestic Bond and Equities	$ 44,501,403	$ 8,274,712	$ 52,776,115	$ 51,184,963	$ 66,969,077	$ 16,949,580	$ 83,918,657	$ 82,247,700
International Equities	2,869,884	-	2,869,884	3,247,057	6,972,253	-	6,972,253	7,472,522
Total	$ 47,371,287	$ 8,274,712	$ 55,645,999	$ 54,432,020	$ 73,941,330	$ 16,949,580	$ 90,890,910	$ 89,720,222

Since the Custodian does not have the ability to pledge or sell securities delivered for collateral, absent a borrower's default, the securities collateral received are not shown on the Statements of Fiduciary Net Position.

Derivative Investing

The System's investment managers may invest in derivatives if permitted by the guidelines established by the System's Board. Derivatives are generally defined as contracts whose values depend on, or are derived from, the value of an underlying asset, reference rate or index. Short options positions will generally be hedged with cash, cash equivalents, current portfolio security holdings, or other options or futures positions.

During fiscal year 2017, the System recognized a gain of $209,190, while 2016 recognized a loss of $67,621 related to derivatives.

The System's investment guidelines allow fixed income managers to hold stock rights and warrants acquired as a result of reorganization. Domestic equity managers may use index futures as a cash flow hedge. None of the System's domestic investment managers held rights and warrants on behalf of the system during the fiscal year 2017. Two managers held such rights in fiscal year 2016.

One of the System's international money managers during fiscal year 2017, and one in fiscal year 2016, held foreign exchange forwards and stock rights and warrants to mitigate the risk associated with these investments.

As of June 30, 2017 and 2016, the System held derivatives with a notional value of $31,169 and $26,529 and a fair value of $687,729 and $478,975, respectively.

The following is a summary of derivatives held directly by the System:

Fair Value	**2017**		**2016**	
Classification	Amount	Notional	Amount	Notional
Common Stock	$ 687,729	$ 31,169	$ 478,975	$ 26,529

Changes in Fair Value

Investment Derivatives	**Classification**	2017	2016
FX Forwards	Investment revenue	$ 2,064	$ -
Rights	Investment revenue	(1,581)	(67,556)
Warrants	Investment revenue	208,707	(65)
		$ 209,190	$ (67,621)

In addition to the above, the System has exposure to derivatives through its investments in hedge funds, reported in alternative investments in the financial statements.

Forward Foreign Exchange Contracts

A currency forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to the possible nonperformance by one of the counter-parties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during fiscal years 2017 and 2016. Forwards are usually traded over-the-counter. These transactions are entered into in order to hedge risks from exposure to foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Forwards carry market risk resulting from adverse fluctuations in foreign exchange rates. Recognition of realized gain or loss depends on whether the currency exchange rate has moved favorably or unfavorably to the contract holder upon termination of the contract. Prior to termination of the contract, the System records the unrealized currency translation gain or loss based on the applicable forward exchange rates.

Mortgage-Backed Securities

A mortgage-backed security depends on the underlying pool of mortgage loans to provide the cash flow to make principal and interest payments on the security. A decline in interest rates can result in prepayments, called contraction risk. This risk occurs as mortgages are pre-paid or refinanced which reduces the expected return of the security. If interest rates rise, the likelihood of prepayments decreases, resulting in extension risk. Since loans in a pool underlying a security are being prepaid at a slower rate, investors are unable to capitalize on higher interest rates because their investments are locked in at a lower rate for a longer period of time. A collateralized mortgage obligation (CMO) is a type of mortgage-backed security that creates separate pools of pass-through rates for different classes of bondholders with varying maturities, called tranches. The repayments from the pool of pass-through securities are used to retire the bonds in the order specified by the bonds' prospectus.

The System may invest in mortgage-backed securities to enhance fixed-income returns. The mortgaged-backed securities are subject to credit risk, in that the borrower may be unable to meet its obligations.

Fair Value Measurement

GASB Statement No. 72, *Fair Value Measurement and Application*, specifies a hierarchy of valuation classifications based on whether the inputs to the valuation techniques used in each valuation classification are observable or unobservable. These classifications are summarized in three broad levels listed below:

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

Inputs used to measure fair value might fall in different levels of the fair value hierarchy, in which case the System defaults to the lowest level input that is significant to the fair value measurement in its entirety. These levels are not necessarily an indication of the risk or liquidity associated with the investments.

The following table presents fair value measurements as of June 30, 2017 (in thousands of dollars):

	Level 1	Level 2	Level 3	Total
Equities				
Limited Partnership Units	$ 114,625	$ -	$ -	$ 114,625
Common Stock	404,184	-	1,249	405,433
Other	20,010		125	20,135
Fixed Income				
Corporate Bonds	-	135,922	7,758	143,680
Other	-	130,696	420	131,116
Warrants	-	-	688	688
Total	$ 538,819	$ 266,618	$ 10,240	$ 815,677
Short Term Investment Funds measured at amortized cost				54,126
Investment held at NAV				1,725,040
Total Investments				$ 2,594,843

The following table presents fair value measurements as of June 30, 2016 (in thousands of dollars):

	Level 1	Level 2	Level 3	Total
Equities				
Limited Partnership Units	$ 112,465	$ -	$ -	$ 112,625
Common Stock	452,283	-	1,389	453,672
Other	40,030	-	97	40,127
Fixed Income				
Corporate Bonds	-	133,480	6,496	139,976
Other	-	186,472	257	186,729
Warrants	-	-	479	479
Spot Contracts	(2)	- -	-	(2)
Total	$ 604,776	$ 319,952	$ 8,718	$ 933,446
Short Term Investment Funds measured at amortized cost				42,316
Investments held at NAV				1,421,033
Total Investments				$ 2,396,795

Level 1 Limited Partnership investments consist of Master Limited Partnerships that are publicly traded and listed on a national securities exchange.

Level 1 Common Stock investments are valued using exchange listed prices or broker quotes in active markets.

Other Level 1 Equity investments are valued using exchange listed prices or broker quotes in active markets.

Level 2 Corporate Bonds are valued using evaluated prices which are based on a compilation of primarily observable market information or a broker quote in an inactive market.

Other Level 2 Fixed Income investments are valued using evaluated prices which are based on a compilation of primarily observable market information or a broker quote in an inactive market. The valuation of convertible securities may be imputed based on the conversion ratio or other security specific information or broker quotes in a non-active market.

Level 3 investments in all categories are securities in which no indications are available, and the company's financials and other market indicators are used to calculate valuation. These include common stocks and bonds of companies undergoing reorganization, tradable bank loans and similar instruments.

The following table presents investments measured at Net Asset Value as of June 30, 2017 (in thousands of dollars):

	NAV	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Real Estate Investment Trusts	$ 150	$ -	Quarterly	
Real Estate Limited Partnerships	250,484	186,186	Not Applicable	Not Applicable
Event Driven Hedge Funds	12,997	-	Quarterly	65-90 days
Global Macro Hedge Funds	52,584	-	Quarterly or Monthly	30-90 days
Equity Long / Short Hedge Funds	42,832	-	Quarterly or Semiannually	45-90 days
Credit Hedge Funds	27,772	-	Quarterly or Annually	60-90 days
Multi-Strategy Hedge Funds	47,993	-	Annually	45-90 days
Private Equity Funds	636,603	539,267	Not Applicable	Not Applicable
Common Collective Trusts	653,625	-	Typically Daily	Less than 1 month
TOTAL	$ $1,725,040	$ 725,453		

The following table presents investments measured at Net Asset Value as of June 30, 2016 (in thousands of dollars):

	NAV	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Real Estate Investment Trusts	$ 37,448	$ -	Quarterly	
Real Estate Limited Partnerships	213,762	232,323	Not Applicable	Not Applicable
Event Driven Hedge Funds	31,254	-	Quarterly	65-90 days
Global Macro Hedge Funds	51,645	-	Quarterly or Monthly	30-90 days
Equity Long / Short Hedge Funds	38,422	-	Quarterly or Semiannually	45-90 days
Credit Hedge Funds	29,900	-	Quarterly or Annually	60-90 days
Multi-Strategy Hedge Funds	43,084	-	Annually	45-90 days
Private Equity Funds	550,211	467,271	Not Applicable	Not Applicable
Common Collective Trusts	425,307	-	Typically Daily	Less than 1 month
TOTAL	$ 1,421,033	$ 699,594		

Real Estate Investment Trusts. This category consists of one private real estate investment trust (REIT). A REIT is a company that owns real estate, typically income-producing properties. REITs are diversified across property types such as multi-family, office, industrial, and retail. The fair values of REIT investments have been determined using the NAV per share of the investment. This asset is currently being liquidated by the portfolio manager.

Real Estate Limited Partnerships. This category includes investments in 37 limited partnerships that own direct real estate and real estate related debt instruments. Investments in Real Estate Limited Partnerships are diversified by property type, geographic location, and capital structure. The fair values of Real Estate Limited Partnership investments have been determined using the NAV of the System's interest in the partnership provided by the General Partner. Real Estate Limited Partnerships cannot be redeemed because they are private market investments. Distributions from Real Estate Limited Partnerships are determined by the General Partner. Real Estate Limited Partnerships typically have 10-year terms.

Event Driven Hedge Funds. This category consists of one hedge fund. Event Driven Hedge Funds seek to add value by exploiting pricing inefficiencies that may occur before or after a corporate event such as a bankruptcy, merger, acquisition or spinoff. Event Driven managers may invest in announced corporate events, or the manager may anticipate a corporate event and position the portfolio accordingly. Event Driven Hedge Fund managers may invest in either debt or equity positions, and often hedge out market risk. The fair values of Event Driven Hedge Fund investments have been determined using the NAV provided by the administrator of the hedge fund.

Global Macro Hedge Funds. This category includes investments in three hedge funds. Global Macro Hedge Funds invest in long and short positions in a wide variety of assets including equities, fixed income, currencies, commodities, and futures. Global Macro Hedge Fund managers seek to add value by accurately anticipating overall macroeconomic trends in various countries. The fair values of Global Macro Hedge Fund investments have been determined using the NAV provided by the administrator of the hedge fund. Two of HMEPS' Global Macro managers have monthly liquidity, and one has quarterly liquidity.

Equity Long / Short Hedge Funds. This category includes investments in four hedge funds. Equity Long / Short Hedge Funds employ a strategy that involves taking long positions in stocks that are expected to increase in value and short positions in stocks that are expected to decrease in value. Equity Long / Short Hedge Funds will often short stock market indexes in order to lessen total market risk. The fair values of Equity Long / Short Hedge Fund investments have been determined using the NAV provided by the administrator of the hedge fund. Two of HMEPS' Equity Long / Short managers have quarterly liquidity, and one has semiannual liquidity.

Credit Hedge Funds. This category includes investments in five hedge funds. Credit Hedge Fund managers look for relative value between senior and junior securities of the same issuer. They will also trade securities of equivalent credit quality from different corporate issues, or different tranches in complex capital structures such as mortgage-backed securities or collateralized loan obligations. Credit Hedge Funds typically focus on credit rather than interest rates. In fact, many managers will sell short interest rate futures or Treasury bonds to hedge their interest rate exposure. The fair values of Credit Hedge Fund investments have been determined using the NAV provided by the administrator of the hedge fund. HMEPS is redeeming one of its Credit Hedge Fund managers, and another is liquidating under court supervision.

Multi Strategy Hedge Funds. This category includes investments in two hedge funds. Multi Strategy Hedge Funds may employ any combination of the hedge fund strategies listed above. The fair values of Multi Strategy Hedge Fund investments have been determined using the NAV provided by the administrator of the hedge fund. Both of HMEPS' Multi Strategy managers have annual liquidity.

Private Equity Limited Partnerships. This category includes investments in 93 limited partnerships that own equity in privately held companies including equity in energy and commodity investments. Investments in Private Equity Limited Partnerships are diversified by industry sector, geographic location, and capital structure. The fair values of the Private Equity Limited Partnership investments have been determined using the NAV of the System's interest in the partnership provided by the General Partner. Private Equity Limited Partnerships cannot be redeemed because they are private market investments. Distributions from Private Equity Limited Partnerships are determined by the General Partner. Private Equity Limited Partnerships typically have 10-year terms.

Common Collective Trusts. This category includes investments in 13 common collective trusts. Common Collective Trusts may have active or passive strategies in publicly traded equity and fixed income securities. The fair values of Common Collective Trusts investments have been determined using the NAV provided by the administrator of the common collective trusts. Common Collective Trusts usually have higher liquidity than other investment strategies valued at NAV.

NOTE 10 — FURNITURE, FIXTURES AND EQUIPMENT

Furniture, fixtures and equipment are comprised as follows at June 30:

	2017	2016
Office furniture and equipment	$ 74,382	$ 74,382
Computer equipment	857,070	848,582
Leasehold improvements	141,829	139,820
	1,073,281	1,062,784
Less accumulated depreciation and amortization	(895,493)	(764,827)
	$ 177,788	$ 297,957

Depreciation expense for fiscal years 2017 and 2016 are $130,666 and $170,739, respectively.

NOTE 11 — COMMITMENTS

As described in Note 1, certain participants of the System are eligible to receive, upon request, a refund of their accumulated Group A and/or Group C contributions, without interest, upon termination of employment with the City, or System, prior to being eligible for pension benefits. As of June 30, 2017 and 2016, aggregate contributions for these eligible participants of the System were approximately $161,590,424 and $157,672,532, respectively.

The System's investments in limited partnerships and real estate trusts are included in the first table appearing in Note 9. In connection with those investments, the System has remaining commitments as of June 30, 2017 and 2016 of approximately $725 million and $700 million, respectively, pursuant to terms of the respective limited partnerships and real estate trusts.

The System leased office facilities under a five-year lease, ending October 31, 2016, and extended the term of the lease by ten years, ending October 31, 2026. This lease agreement began with a base rent of $14 per square foot for the first eighteen months. Subsequently, the rent is $23.50 per square foot for 12 months, subsequently increasing by $0.50 per square foot per year for the remainder of the term.

The payments under the lease will be:

Year Ending June 30,	Amount
2018	$ 448,615
2019	458,026
2020	467,438
2021	476,849
2022	486,261
Thereafter	2,214,840
Total	$ 4,552,029

Additional amounts are assessed for use of common areas, utilities and maintenance. Total rental expense, including these assessments, amounted to approximately $477,533 and $572,516 during the years ended June 30, 2017 and 2016, respectively.

The System has other annual and/or monthly lease services for copiers, miscellaneous office equipment, and offsite storage totaling approximately $53,426 and $42,270 for fiscal years 2017 and 2016, respectively. Each of these contracts contains a cancellation provision.

NOTE 12 — RISKS AND UNCERTAINTIES

The System invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, foreign currency, liquidity and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the value of investment securities will occur in the near term and that such change could materially affect the amounts reported in the statements of fiduciary net position.

The System's contribution rates are made, and the actuarial information included in the Notes and Schedules 1, 2 and 3 are based, on certain assumptions pertaining to interest rates, inflation rates and participant demographics, all of which are subject to change. Due to uncertainties inherent in the estimations and assumptions process, it is at least reasonably possible that changes in these estimates and assumptions in the near term could be material to the basic financial statements.

NOTE 13 — CONTINGENCIES

On March 20, 2015, the Texas Supreme Court in the Klumb v. Houston Municipal Employees Pension System case issued a decision confirming the authority of the System's Board to determined that persons employed by Houston First Corporation ("HFC"), Houston First Foundation ("HFF"), and CCSI, Inc. ("CCSI") constitute employees of the City of Houston for purposes of membership in the System's pension plan. Following unsuccessful attempts by the System to obtain compliance by the City with the Texas Supreme Court's ruling and its statutory duties to provide information and pay contributions into the plan for HFC, HFF and CCSI employees, the System filed Houston Municipal Employees Pension System v. City of Houston et al., No. 2016-35252, in the 333rd Judicial District Court of Harris County, Texas against the City and its representatives. The lawsuit seeks, among other things, writs of mandamus compelling the City and its representatives to provide payroll and other information regarding the HFC, HFF, and CCSI employees and to make the contributions and pick up payments owed for those employees. On September 17, 2015, the City filed a counterclaim and third-party claim against HMEPS and its Board alleging breach of agreement, violation of unspecified statutory provisions, and inverse condemnation. The City also subsequently filed a Plea to Jurisdiction, which HMEPS disputes, alleging that the court does not have jurisdiction to hear HMEPS' causes of action. HMEPS and its Board deny the City has any viable claims, and that such claims are barred by, among other things, the Klumb decision. On October 9, 2015, a hearing was held in the 333rd district court on the City's Plea to the Jurisdiction. Following arguments of counsel, the court denied the City's Plea to the Jurisdiction. The City immediately appealed. The appeal was assigned to the Fourteenth Court of Appeals.

On November 22, 2016, the Fourteenth Court of Appeals reversed and rendered in part, remanded in part and affirmed in part the trial court's denial of the Plea to the Jurisdiction and provided the information specified in the Statute is subject to the Texas Public Information Act for HFC, HFF and CCSA employees. The court of appeals reversed that the City is legally obligated under an ultra vires cause of action to make contributions different than the Statute as modified by the Meet and Confer Agreement between the System and the City. The System filed a Motion for Rehearing on the last point. The City also filed a Motion for Rehearing on the court of appeals' decision. The Court of Appeals denied both motions for rehearing.

The System filed a Petition for Review with the Texas Supreme Court on whether the System can maintain an ultra vires action against the City and its officials for their failure to pay pension contributions according to the rates and groups specified by the Meet and Confer Agreement. The City filed its own Petition for Review seeking reversal of the court of appeals' ruling that the City is subject to ultra vires actions for making contributions and providing employee information under the Statute and for enforcement of the Texas Public Information Act. The System and the City filed respective responses and replies. The Petitions for Review are fully briefed and are awaiting a decision from the Texas Supreme Court on whether to grant or deny them.

NOTE 14 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through October 12, 2017, the date the financial statements were available to be issued.

REQUIRED SUPPLEMENTAL INFORMATION

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY (UNAUDITED) (SCHEDULE 1)

Fiscal year ending June 30,	**2017**	**2016**	**2015**	**2014**
Total Pension Liability				
Service Cost	$ 75,960,564	$ 68,968,481	$ 59,465,512	$ 61,480,204
Interest on the Total Pension Liability	331,166,519	379,781,300	363,639,884	348,418,895
Benefit Changes	(724,683,000)	-	-	-
Difference between Expected and Actual Experience	(38,387,084)	(16,194,133)	(22,057,834)	-
Assumption Changes	562,237,000	324,938,905	-	-
Benefit Payments	(280,455,603)	(253,178,363)	(234,954,625)	(221,925,083)
Refunds	(718,176)	(1,105,306)	(1,549,404)	(1,213,474)
Net Change in Total Pension Liability	(74,879,780)	503,210,884	164,543,533	186,760,542
Total Pension Liability- Beginning	5,034,389,959	4,531,179,075	4,366,635,542	4,179,875,000
Total Pension Liability - Ending (a)	$ 4,959,510,179	$ 5,034,389,959	$ 4,531,179,075	$ 4,366,635,542
Plan Fiduciary Net Position				
Employer Contributions	$ 182,557,829	$ 159,958,607	$ 145,007,059	$ 128,274,419
Employee Contributions	15,901,600	15,873,664	16,198,216	16,579,600
Pension Plan Net Investment Income	290,910,717	27,639,567	73,370,310	352,522,858
Benefit Payments	(280,455,603)	(253,178,363)	(234,954,625)	(221,925,083)
Refunds	(718,176)	(1,105,306)	(1,549,404)	(1,213,474)
Pension Plan Administrative Expense	(6,826,559)	(7,360,139)	(7,007,422)	(6,414,668)
Other	1,271,670	1,651,651	1,040,548	-
Net Change in Plan Fiduciary Net Position	202,641,478	(56,520,319)	(7,895,318)	267,823,652
Fiduciary Net Position - Beginning	2,400,023,240	2,456,543,559	2,464,438,877	2,196,615,225
Fiduciary Net Position - Ending (b)	$ 2,602,664,718	$ 2,400,023,240	$ 2,456,543,559	$ 2,464,438,877
Net Pension Liability - Ending (a) - (b)	2,356,845,461	2,634,366,719	2,074,635,516	1,902,196,665
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	52.48 %	47.67%	54.21%	56.44%
Covered Employee Payroll	$ 604,895,264	640,528,652	$ 624,205,549	$ 598,245,952
Net Pension Liability as a Percentage of Covered Employee Payroll	389.63 %	411.28%	332.36%	317.96%

Notes to Schedule: NA

See accompanying independent auditors' report.

See accompanying note to required supplemental schedules.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

SCHEDULE OF NET PENSION LIABILITY (UNAUDITED) (SCHEDULE 2)

FY Ending June 30,	Total Pension Liability	Fiduciary Net Position	Net Position Liability	Fiduciary Net Position as a % of Total Pension Liability	Covered Payroll[1]	Net Pension Liability as a % of Covered Payroll
2014	$ 4,366,635,542	$ 2,464,438,877	$ 1,902,196,665	56.44%	$ 598,245,952	317.96%
2015	4,531,179,075	2,456,543,559	2,074,635,516	54.21%	624,205,549	332.36%
2016	5,034,389,959	2,400,023,240	2,634,366,719	47.67%	640,528,652	411.28%
2017	4,959,510,179	2,602,664,718	2,356,845,461	52.48%	604,895,264	389.63%

[1] The covered payroll reported prior to fiscal year 2014 is based on pensionable pay. With the adoption of GASB Statement No. 67, GASB changed the definition of Covered Payroll to be total gross compensation. The Covered Payroll for fiscal year 2014-2016 used this new definition. In 2017, GASB Statement No. 82 changed the definition of covered payroll to pensionable pay. Therefore, beginning in fiscal year 2017 the covered payroll shown is pensionable pay.

See accompanying independent auditor's report.
See accompanying note to required supplemental schedules.
Schedule is intended to show 10 years. Additional years will be displayed as they become available.

SCHEDULE OF EMPLOYER CONTRIBUTIONS (UNAUDITED) (SCHEDULE 3)

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll[1]	Actual Contribution as a % of Covered Payroll[2]
2008	$ 116,281,212	$ 73,271,799	$ 43,009,413	$ 483,815,000	$ 15.14%
2009	102,257,047	76,837,216	25,419,831	539,023,000	14.25%
2010	107,535,744	82,052,013	25,483,731	550,709,000	14.90%
2011	107,472,679	87,284,737	20,187,942	544,665,000	16.03%
2012	122,465,396	97,161,723	25,303,673	534,394,000	18.18%
2013	124,317,102	111,858,885	12,458,217	549,971,000	20.34%
2014	144,953,327	128,274,419	16,678,908	598,245,952	21.44%
2015	155,299,296	145,007,059	10,292,237	624,205,549	23.23%
2016	162,229,984	159,958,607	2,271,377	640,528,652	24.97%
2017	184,732,840	182,557,829	2,175,011	604,895,264	30.18%

[1] The covered payroll reported prior to fiscal year 2014 is based on pensionable pay. With the adoption of GASB Statement No. 67, GASB changed the definition of Covered Payroll to be total gross compensation. The Covered Payroll for fiscal year 2014-2016 used this new definition. In 2017, GASB Statement No. 82 changed the definition of covered payroll to pensionable pay. Therefore, beginning in fiscal year 2017 the covered payroll shown is pensionable pay.

[2] The Actual Contribution as a % of Covered Payroll does not correspond to the funding requirements of the Amended and Restated Meet and Confer Agreement and should not be used for funding purposes.

See accompanying independent auditor's report.

Note to Schedules 1 and 2 – The total pension liability contained in this schedule was provided by the System's retained actuary, Gabriel, Roeder, Smith & Company. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the System.

Note to Schedule 3 – The required employer contributions and percent of those contributions actually made are presented in the schedule. The information presented was used in the actuarial valuation for purposes of determining the actuarially determined contribution rate. The assumptions and methods used for this actuarial valuation were recommended by the actuary and adopted by the Board. Additional information as of the latest actuarial valuation is presented in the table below.

Valuation Date: July 1, 2015

Notes: Actuarially determined contribution rates are calculated as of July 1, which is 12 months prior to the beginning of the fiscal year in which they are contributed.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method	Entry Age Normal
Amortization method	Level Percentage of Payroll, Open (see notes)
Remaining amortization period	30 years
Asset valuation method	5 Year smoothed market, direct offset of deferred gains and losses
Inflation	2.5%
Salary increases	3.25% to 5.50% including inflation
Investment rate of return	8.00%
Retirement age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2009 – 2014.
Mortality	RP-2000 Mortality Table scaled by 125% for males and 112% for females. The rates are then projected on a fully generational basis by scale BB.

Other Information:

Note: The funding period will remain open until increases in the employer contribution rate result in the employer contribution rate being equal to the actuarially determined contribution, at which point the funding period will be closed. There were no benefit changes during the year.

Note: All post-retirement cost-of-living adjustments are non-compounding and are 3.0% of the original benefit for all persons receiving a pension or survivor benefit as of January 1 of the year in which the increase is made, provided the participant was an employee on or before December 31, 2004. Effective January 1, 2005, cost-of-living adjustments are increased annually by 2.0%, not compounded, for all persons receiving a benefit, provided the participant was an employee on or after this date. Retirees who received a 3.0% cost-of-living adjustment who are rehired after December 31, 2004 receive a 3.0% cost-of living adjustment on the subsequent benefit. Individuals participating in Group D do not have a cost-of-living provision.

SCHEDULE OF INVESTMENT RETURNS (UNAUDITED) (SCHEDULE 4)

FY Ending June 30,	Annual Return[1]
2017	12.18%
2016	0.9%
2015	3.47%
2014	16.42%

[1] Annual money-weighted rate of return, net of investment fees.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

SCHEDULE OF FUNDING PROGRESS FOR OPEB AND NOTES TO REQUIRED SCHEDULE (UNAUDITED) (SCHEDULE 5)

UAAL as an Actuarial Valuation Payroll Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll[1] (c)	Percentage of Covered Payroll ((b-a)/c)
June 30, 2015	$ 0	5,167,086	5,167,086	0%	2,608,493	198.1%
June 30, 2012	$ 0	4,424,447	4,424,447	0%	2,251,862	196.5%
June 30, 2010	$ 0	3,594,835	3,594,835	0%	2,062,917	174.3%

[1] With the adoption of GASB Statement No. 67, GASB changed the definition of Covered Payroll to be total gross compensation. The Covered Payroll for fiscal year 2014 and later uses this new definition.

The information presented in this schedule was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	**June 30, 2015**
Actuarial cost method	Projected unit credit
Amortization method	Level percent of payroll
Amortization period	30-Year period, open
Asset valuation method	Market value of assets
Actuarial assumptions:	
Investment rate of return	4.5%, net of expenses
Salary increases	Graded rates based on years of service
Payroll growth factor	3.0% per year
General inflation rate	3.0% per year
Health care inflation rate	Starting at 7.25% in 2016 and decreasing by ¼% each year to 4.5% by 2027

See accompanying independent auditor’s report.

OTHER SUPPLEMENTAL INFORMATION

INVESTMENT SUMMARY (SCHEDULE 6)

	June 30, 2017		
	Cost	Fair Value	Unrealized Appreciation (Depreciation)
Fixed income:			
Government securities	$ 74,209,295	$ 72,675,493	$ (1,533,802)
Corporate bonds	197,885,238	202,121,498	4,236,260
Total fixed income	272,094,533	274,796,991	2,702,458
Short-term investment funds	54,125,554	54,125,554	-
Capital stocks	468,638,051	540,683,622	72,045,571
Commingled funds	524,003,851	653,822,339	129,818,488
Real assets	265,833,005	261,822,756	(4,010,249)
Alternative investments	619,212,093	809,591,991	190,379,898
Total investments	$ 2,203,907,087	$ 2,594,843,253	$ 390,936,166

	June 30, 2016		
	Cost	Fair Value	Unrealized Appreciation (Depreciation)
Fixed income:			
Government securities	$ 91,567,927	$ 92,416,960	$ 849,033
Corporate bonds	206,806,317	200,401,238	(6,405,079)
Total fixed income	298,374,244	292,818,198	(5,556,046)
Short-term investment funds	79,291,774	79,291,774	-
Capital stocks	583,096,068	606,635,716	23,539,648
Commingled funds	328,376,440	422,324,923	93,948,483
Real assets	307,450,236	271,114,650	(36,335,586)
Alternative investments	621,672,880	724,612,264	102,939,384
Total investments	$ 2,218,261,642	$ 2,396,797,525	$ 178,535,883

Space and cost restrictions make it impractical to print the entire investment portfolio in this report. A portfolio listing is available for review at the System's office by appointment, upon request.

See accompanying independent auditor's report.

INVESTMENT SERVICES, PROFESSIONAL SERVICES, AND ADMINISTRATION EXPENSES (SCHEDULE 7)
YEARS ENDED JUNE 30, 2017 AND 2016

	2017	2016
Investment services:		
Custodial services*	$ 382,842	$ 375,160
Money management services*	5,210,780	5,506,914
Consulting services*	834,000	834,000
Legal services*	26,707	24,096
Other investment expenses	937,141	797,674
Total investment expenses	$ 7,391,470	$ 7,537,844
Professional services:		
Actuarial services*	$ 240,912	$ 133,623
Auditing and professional services*	24,620	80,687
Legal services*	168,879	469,156
Other professional services*	371,002	338,004
Total professional services	$ 805,413	$ 1,021,470
Administration expenses:		
Office costs	$ 483,977	$ 577,680
Insurance costs	170,773	163,160
Costs of staff and benefits	4,395,899	4,486,662
Costs of equipment and supplies	739,447	819,947
Depreciation and amortization	130,666	170,739
Costs of continuing education	100,384	120,481
Total administration expenses	$ 6,021,146	$ 6,338,669

* See details on the next page.

See accompanying independent auditors' report.

SUMMARY OF COSTS OF INVESTMENT AND PROFESSIONAL SERVICES (SCHEDULE 8)
YEAR ENDED JUNE 30, 2017 AND 2016

Investment Expenses

	2017	2016
Investment Manager Fees		
Ariel Investments, LLC	$ 220,582	$ 199,731
Baring Asset Management	314,103	264,374
BlackRock (formerly Barclays)	201,394	170,070
DDJ Capital Management, LLC	541,468	640,440
DePrince, Race and Zollo, Inc.	233,330	212,223
Earnest Partners, LLC	98,484	578,370
Enhanced Investment (INTECH)	226,566	233,527
Global Forest Partners, LP/ UBS Timber Investors	56,767	57,739
Loomis, Sayles and Company, LP	429,952	445,137
Neumeier Investment Counsel, LLC	579,700	496,960
OFI Institutional	521,883	492,253
Panagora Asset Management	154,183	166,947
Profit Investment Management	-	147,553
Pugh Capital Management	132,250	127,561
Smith Graham & Company	346,539	319,528
Thomas White International, Ltd	255,694	355,796
Tortoise Capital Advisors	775,068	521,310
UBS Global Asset (formerly Brinson Part)	4,770	26,624
State Street Global Advisors	118,047	50,771
	$ 5,210,780	$ 5,506,914
Custodial Services		
State Street Bank and Trust Company	$ 382,842	$ 375,160
Investment Consulting Fees		
Wilshire Associates, Inc.	284,000	284,000
Cliffwater LLC	550,000	550,000
	$ 834,000	$ 834,000
Legal Services (Investment)		
Locke Lord LLP	$ 26,707	$ 24,096

Professional services

	2017	2016
Actuary		
Gabriel, Roeder, Smith & Co.	$ 240,912	$ 133,623
Auditing and Professional Services		
Doeren Mayhew CPAs and Advisors	$ -	$ 12,022
McConnell & Jones, LLP	28,795	64,490
Election-America Inc.	(4,175)	4,175
	$ 24,620	$ 80,687
Legal Services		
Baker Botts, LLP	$ 117,726	$ 466,645
Jackson Walker LLP	51,153	2,511
	$ 168,879	$ 469,156
Other Professional Services		
Harris Law Firm	$ 36,000	$ 13,500
HillCo Partners, LLC	102,000	101,500
Locke Lord LLP	190,002	170,004
LT Communications	43,000	53,000
	$ 371,002	$ 338,004

See accompanying independent auditor’s report.

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SECTION THREE

INVESTMENT INFORMATION

The Board of Trustees (“Board”) of the Houston Municipal Employees Pension System (“System”) has adopted an Investment Policy Statement (“IPS”) as a framework for the investment of the System’s assets. The authority to amend the IPS rests solely with the Board. The following provides an outline of the IPS.

PURPOSE

The IPS assists the Board in its role as fiduciary for the System’s investments by: a) specifying the Board’s expectations, objectives and guidelines for the System, b) clarifying the responsibilities of the Board, the staff, the consultants and vendors, c) setting forth an investment structure for managing the portfolio, d) encouraging effective communications, and e) establishing criteria to select, remove, monitor and evaluate performance of money managers and vendors on a regular basis.

INVESTMENT OBJECTIVES

The investment objective of the total portfolio is to produce an annualized investment return over the long term that exceeds the actuarial return rate assumption for the System. This will help the Board to achieve its overall objective of providing adequate retirement benefits to the members of the System.

The performance of the System’s investments is compared with a policy portfolio comprised of market indices, which are consistent with the overall investment policy. The policy portfolio reflects a passive implementation of the investment policy. Effective October 1, 2017, the Board approved an updated asset allocation for the System’s investments, along with an updated policy portfolio. However, in fiscal year 2017, the System operated under the previous policy portfolio that had been effective since July 1, 2013.

Comparisons of total fund performance are also made with a universe of public pension funds implementing generally comparable investment policies. The public pension fund universe used for comparative purposes is the Wilshire TUCS Master Trusts – Public Universe.

Asset Allocation

The System’s investment allocation provides an efficient allocation of assets that is designed to achieve overall portfolio risk and return objectives. The Board periodically undertakes strategic studies to address the appropriateness of asset classes to be considered for inclusion in the asset allocation, and to define the targeted percentage to each asset class to achieve the desired level of diversification.

Although the System’s updated asset allocation became effective October 1, 2017, this section discusses the previous asset allocation in effect during fiscal year 2017. The target and actual allocations are included in table 2.

Diversification

The System invests in six major asset classes (Equities, Fixed Income, Real Estate, Private Equity, Inflation-Linked, and Absolute Return) and engages the services of numerous professional investment managers (including in both public markets and private partnerships) with demonstrated skills and expertise in managing portfolios within each asset class as a method to maximize overall fund diversification. The managers retained are expected to utilize varied investment approaches that, when combined, will exhibit characteristics that are similar to the asset class proxy utilized in the strategic asset allocation plan. As of June 30, 2017, the System had investments with 83 investment managers, several of which manage multiple mandates. Cash inflows and outflows are directed within the targeted asset class to the various managers so that actual characteristics of the portfolio will be consistent with the strategic plan. No investment manager is permitted to have more than 20% of the fair value of the System’s assets.

Rebalancing

The IPS requires a periodic adjustment, or rebalancing, of assets be made to ensure conformance with policy target levels. Such rebalancing is necessary to reflect sizable cash flows and performance imbalances among the various asset classes that may occur over time. During fiscal year 2017, Staff directed the rebalancing of assets within the asset allocation targets in response to market dynamics and the System's liquidity needs.

Investment Manager Guidelines – Public Markets

Investment managers are subject to guidelines and objectives incorporated in the investment management agreements entered into by the Board and the respective investment managers. Investment managers are expected to perform their fiduciary duties as prudent people skilled in such matters and, further, are expected to comply with all applicable State and Federal statutes governing the investment of retirement funds. Within the context of the guidelines, investment managers have full discretion with respect to the purchase and sale of individual securities and portfolio weightings. Portfolios are to be managed in a manner similar to other portfolios within an organization with similar guidelines and performance objectives.

The Board requires that all investment managers seek best execution for all trades ordered on behalf of the System.

Manager Evaluation

Managers of portfolios are evaluated quarterly against predetermined benchmarks such as an appropriate market index or a comparable peer group. All public market managers are required to provide written reports to HMEPS of their activities and performance. In addition, System personnel and professional consultants engaged by the Board monitor managers' performance, material changes in the managers' organization and conformity with their guidelines and objectives.

Managers who do not meet expectations will be placed on probation (for public market managers) or watchlist (for private market managers). Staff and the consultant will increase monitoring of these managers, evaluating factors such as changes in the assets in the portfolio, changes in investment style, peer universe ranking and others.

Investment Performance Evaluation

The Board reviews System investment performance on a periodic basis to evaluate conformity to the goals and objectives established in the strategic plan. The Board recognizes that financial markets from time to time may not support attainment of those goals and objectives. During such times, progress toward conformity is evaluated by comparing the System's performance to the policy portfolio and to the Wilshire TUCS Master Trusts – Public Universe. Investment results are calculated using a time-weighted rate of return based on the market rate of return.

Proxy Voting

The Board authorizes each investment manager to vote all proxies relating to shares of securities under management. Each manager is expected to promptly vote all proxies and related actions in a manner consistent with the long-term interests of the System and its participants and beneficiaries. Each investment manager is required to keep detailed records of all voting of proxies and related actions and to comply with all related regulatory obligations. The System's management staff periodically reviews each investment manager's policies and actions in respect to proxy voting.

INVESTMENT RESULTS

Long-Term Results

The 10-year period ended June 30, 2017 encompassed the 2008 financial crisis and has produced volatile returns, both for the markets as a whole, and also for the System. The System generated double digit positive returns in six of the past ten fiscal years, and outperformed its peer group in seven of those ten years. Due to the diversification of assets, the System's 5-year annualized return is 9.3%. The 10-year return stands at 6.1%.

As shown in the investment results table, HMEPS' total fund performance compares very favorably to the median public fund, as represented by the Wilshire TUCS Master Trusts – Public Universe. Over the ten-year period, HMEPS is in the top 15% of funds in the Wilshire TUCS Master Trusts – Public Universe.

HMEPS' consistent long-term performance relative to its peers is best illustrated by the growth of $1,000 invested in HMEPS' total fund, the policy portfolio and median public fund during the past 10 years. The ending points indicate that $1,000 invested in HMEPS' total fund would have grown to $1,809, while the same $1,000 would have grown to $1,807 and $1,673 respectively in the policy portfolio and the median public fund.

Fiscal Year 2017 Results

For the fiscal year ended June 30, 2017, the System returned 12.7%. This rate of return exceeded both the System's policy benchmark return of 12.0%, and the return of the median fund in the Wilshire TUCS Master Trusts – Public Universe of 12.4%.

The Investment Section was written by Chief Investment Officer Gregory Brunt, CFA, Sr. Financial Analyst Brad Bangen, and Financial Analyst Jumana Aumir, CFA.

SCHEDULE OF ASSET ALLOCATION

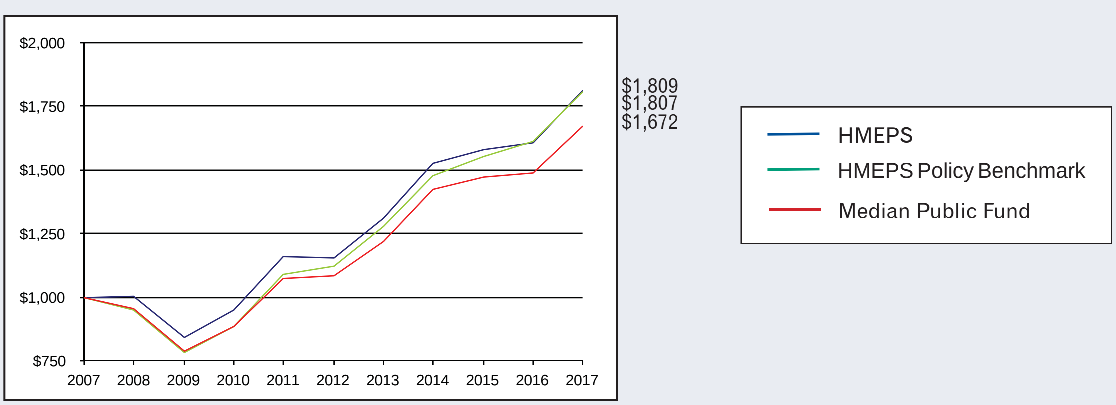
TABLE 1

(Calculated based on a time-weighted rate of return based on the market rate of return)

	Allocation		Investment Performance			
Asset Class	Target	Actual	1 Yr.	3 Yrs.	5 Yrs.	10 Yrs.
Global Equity	35.0 %	35.7 %	16.3 %	5.8 %	n/a %	n/a %
MSCI All Country World IMI			19.0	4.9%	n/a	n/a
MSCI All Country World Min Volatility			6.1	0.1	n/a	n/a
Fixed Income	15.0	14.6	7.8	4.0	5.5	6.1
Barclays Aggregate Index			-0.3	2.5	2.2	4.5
Merrill Lynch High Yield Master II Index			12.8	4.5	6.9	7.5
Private Equity[1]	17.5	20.6	16.0	11.1	11.1	9.0
S&P 500 Index + 3%			20.9	12.6	17.6	10.2
Real Estate[2]	10.0	10.4	9.2	11.0	11.0	2.1
NCREIF Property Index			7.0	10.2	10.5	6.4
Inflation-Linked[3]	12.5	10.6	8.2	-4.8	3.9	n/a
CPI + 4%[4]			5.6	4.9	5.3	n/a
Absolute Return[5]	10.0	7.1	7.1	0.8	4.0	n/a
LIBOR + 4%[6]			5.0	4.6	4.5	n/a
Cash	-	1.0	n/a	n/a	n/a	n/a
Total Portfolio	100.0	100.0	12.7	5.8	9.4	6.1
Policy Benchmark			12.0	6.9	10.0	6.1
Median of Wilshire Public Fund Universe/TUCS			12.4	5.4	8.9	5.6

1. The Global Equity composite was created on July 1, 2013. It combined the previously separate Domestic Equity and Global Equity composites.
2. Beginning October 1, 2008, Private Equity is separate from Absolute Return. Prior returns were combined in the Private Equity composite.
3. Beginning October 1, 2008, Real Estate is separate from Inflation-Linked. Prior returns were combined in the Real Estate composite.
4. The Inflation-Linked composite was created on October 1, 2008. Prior returns are included in the Real Estate composite.
5. Prior to April 1, 2011, the benchmark for Inflation-Linked was CPI + 5%. Longer term benchmark returns reflect a blend of both benchmarks.
6. The Absolute Return composite was created on October 1, 2008. Prior returns are included in the Private Equity composite.

TABLE 2



SCHEDULE OF TOP INVESTMENTS AS OF JUNE 30, 2017

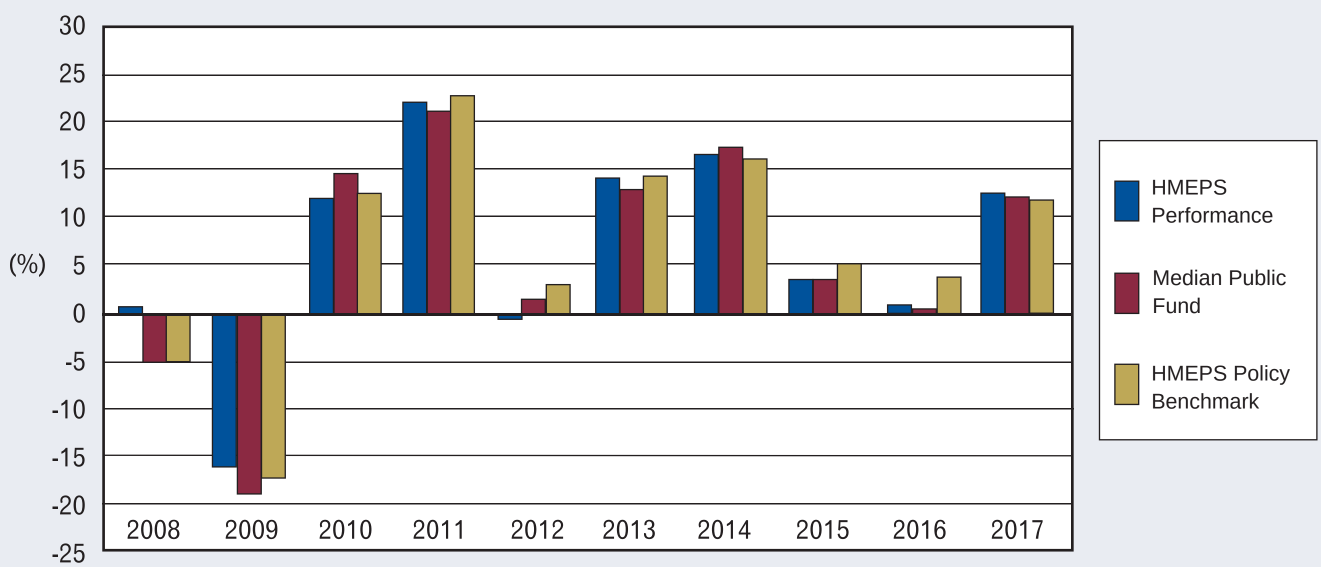
*SCHEDULE OF TOP PUBLIC EQUITY INVESTMENTS AS OF JUNE 30, 2017**

Name of Investment	Fair Value of Investment	Percent of Portfolio
BlackRock MSCI ACWI MIC Index	$ 203,192,911	7.8%
BlackRock ACWI ex-US Index	140,346,437	5.4%
Blackrock Equity Index Fund A	30,277,492	1.2%
Blackrock MSCI Emerging Markets Free Fund	30,161,621	1.2%
State Street Global Advisors Global Natural Resources	27,036,941	1.0%
State Street Global Advisors Bloomberg Roll Select	25,179,340	1.0%
State Street Global Advisors REIT Index	19,766,723	0.8%
Enterprise Product Partners	10,953,075	0.4%
Magellan Midstream Partners	9,660,506	0.4%
Plains All American Pipeline	8,267,616	0.3%

*SCHEDULE OF TOP DEBT INVESTMENTS AS OF JUNE 30, 2017**

Name of Investment	Fair Value of Investment	Percent of Portfolio
BlackRock U.S. Debt Index (Barclays Aggregate)	$ 45,902,258	1.9%
GMO Emerging Country Debt	19,403,680	0.6%
Alliance Bernstein Emerging Market	17,955,175	0.7%
US Treasury N/B 11/18 1.375	5,061,568	0.3%
US Treasury N/B 09/17	3,677,057	0.3%
US Treasury N/B 06/19 1.625	3,510,553	0.3%
Century Aluminum Company Secured 144A 06/21 7.5	3,275,400	0.2%
US Treasury N/B 06/22 2.125	3,249,915	0.2%
US Treasury N/B 02/20 3.625	3,200,134	0.1%
US Treasury N/B 11/23 2.75	3,138,434	0.1%

* A complete list of the System's holdings is available at the System's office by appointment.



COMPARISON OF INVESTMENT RETURNS - YEARS ENDED JUNE 30

(Calculated based on a time-weighted rate of return based on the market rate of return)

Period Ending 06-30	HMEPS Total Fund	HMEPS Policy Portfolio	Median of Wilshire Public Fund Univ./ TUCS	HMEPS Global Equity	MSCI ACWI IMI	MSCI ACWI Min Vol	HMEPS Fixed Income	Barclays Capital Aggregate Bond Index	Merrill Lynch High Yield Master II Index	HMEPS Private Equity	S&P 500 Index	HMEPS Real Estate	NCREIF Property Index	HMEPS Inflation-Linked	Consumer Price Index	HMEPS Absolute Return	LIBOR
2008	0.47%	-4.88%	-4.92%	n/a	n/a	n/a	1.96%	7.13%	-2.09%	11.87%	-13.12%	18.19%	9.20%	n/a	n/a	n/a	n/a
2009	-16.02%	-17.55%	-19.19%	n/a	n/a	n/a	0.36%	6.06%	-3.53%	-20.93%	-26.22%	-40.37%	-19.57%	n/a	n/a	n/a	n/a
2010	12.24%	13.00%	14.71%	n/a	n/a	n/a	17.00%	9.50%	27.53%	16.82%	14.43%	-9.52%	-1.48%	21.52%	1.05%	23.39%	0.34%
2011	22.17%	22.89%	21.19%	n/a	n/a	n/a	9.33%	3.90%	15.40%	22.54%	30.68%	10.92%	16.73%	39.72%	3.56%	13.94%	0.33%
2012	-0.14%	3.23%	1.25%	n/a	n/a	n/a	6.31%	7.48%	6.51%	11.00%	5.44%	3.78%	12.00%	-21.96%	1.66%	-0.86%	0.46%
2013	13.58%	13.99%	12.27%	n/a	n/a	n/a	5.99%	-0.69%	9.57%	7.85%	20.59%	12.80%	10.73%	14.52%	1.75%	10.87%	0.31%
2014	16.39%	15.61%	16.83%	21.92%	20.92%	13.84%	9.22%	4.37%	11.80%	14.31%	24.61%	9.11%	11.21%	22.33%	2.07%	7.28%	0.24%
2015	3.38%	4.96%	3.38%	2.22%	0.81%	6.59%	1.13%	1.86%	-0.55%	10.36%	7.42%	10.88%	12.96%	-9.14%	0.12%	2.65%	0.25%
2016	1.65%	4.02%	1.07%	-0.31%	-3.87%	11.55%	3.33%	6.00%	1.71%	7.05%	3.99%	12.95%	10.64%	-12.18%	1.01%	-6.92%	19.00%
2017	12.73%	11.95%	12.41%	16.34%	19.01%	6.05%	7.80%	-0.31%	12.75%	16.02%	17.90%	9.15%	6.98%	8.24%	1.63%	7.13%	1.02%
3 Yrs.	5.81%	6.92%	5.42%	5.84%	4.87%	8.04%	4.05%	2.48%	4.48%	11.08%	9.61%	10.98%	10.16%	-4.76%	0.92%	0.78%	0.59%
5 Yrs.	9.38%	9.99%	8.93%	n/a	n/a	n/a	5.45%	2.21%	6.91%	11.06%	14.63%	10.97%	10.49%	3.89%	1.32%	4.01%	0.47%
10 Yrs.	6.11%	6.07%	5.57%	n/a	n/a	n/a	6.14%	4.48%	7.54%	9.04%	7.18%	2.13%	6.42%	n/a	n/a	n/a	n/a

SCHEDULE OF FEES AND COMMISSIONS PAID IN FISCAL YEAR 2017

Broker Name	Number of Shares	Commissions ($)	Cents/Share
Able Noser	320,455	9,614	3.00
Barclays Capital	809,594	2,978	0.37
BNP Paribas Securities Services	6,683,811	27,200	0.41
Caanaccord Genuity Corp.	143,607	4,191	2.92
Capital Institutional Services Inc. Equities	23,475,523	27,245	0.12
Charles Schwab & Co. Inc.	367,475	4,755	1.29
Citigroup Global Markets Inc.	664,232	6,545	0.99
CL Securities Taiwan Company Ltd.	908,000	3,766	0.41
Convergex LLC	4,357,157	87,077	2.00
Craig - Hallum	87,975	3,519	4.00
Credit Suisse Securities	871,156	11,608	1.33
Davidson D.A. + Company Inc.	71,200	2,848	4.00
Deutsche Bank Securities Inc.	427,593	5,027	1.18
FBR Capital Markets & Co.	58,083	2,222	3.83
Goldman Sachs & Co.	1,875,986	9,721	0.52
Guzman & Co.	221,684	4,639	2.09
ICAP DO Brasil DTVM Ltd.	171,500	2,559	1.49
Instinet LLC	2,405,294	13,889	0.58
J.P. Morgan Securities Inc.	950,375	13,559	1.43
Jefferies & Co.	2,134,781	11,160	0.52
J.P. Morgan Securities Plc.	3,434,151	6,937	0.20
Korea Investment and Securities	32,180	6,196	19.25
Macquarie Bank Ltd.	3,503,667	2,298	0.07
Merril Lynch & Co.	1,779,872	9,476	0.53
Morgan Stanley Co.	570,480	9,969	1.75
Needham and Co. LLC LLC	60,525	2,417	3.99
OTHERS	3,388,655	41,421	1.22
Piper Jaffray	122,762	4,828	3.93
Robert W. Baird Co.	53,200	2,031	3.82
Rosenblatt Securities	169,813	3,421	2.01
Sanford C. Bernstein	1,042,778	4,526	0.43
Sidoti & Co.	137,425	5,459	3.97
Societe Generale	197,428	2,294	1.16
State Street Bank and Trust	8,294,268	37,400	0.45
Stifel Nicolaus	110,585	4,311	3.90
UBS Securities	2,700,696	46,780	1.73
Weeden & Co.	196,381	4,592	2.34
Other	3,388,655	41,421	1.22
Grand Total	72,800,347	448,479	
Average Cents/Share			0.62

Public Market Investments	Market Value	Fees	Basis Points
Global Equity	$ 928,732,368	$ 3,347,873	36
Fixed Income	379,004,724	802,032	21
Inflation Linked	174,987,188	893,115	51
Other Public Market	47,082,473	106,709	23
Non-Public Market Instruments	1,071,181,755	61,537	1
Total	$ 2,600,988,508	$ 5,211,266	

Custodian Bank	
State Street Bank & Trust Company	$ 382,842
Consultant Services	
Wilshire Associates, Inc.	284,000
Cliffwater LLC	550,000
Legal Services	26,707
Other Investment Expenses	937,141
Total Investment Expenses	$ 7,391,470

HOUSTON
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SECTION FOUR

ACTUARIAL INFORMATION

GRS

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Gabriel Roeder Smith & Company

June 19, 2017

Board of Trustees

Houston Municipal Employees Pension System

1201 Louisiana, Suite 900

Houston, TX 77002

Dear Members of the Board:

This Risk Sharing Valuation Study (RSVS, or sometimes referred to as the actuarial valuation in the report) describes the current actuarial condition of the Houston Municipal Employees Pension System (HMEPS), determines the City Contribution Rate, and analyzes changes in this contribution rate. The results presented herein may not be applicable for other purposes. Valuations are prepared annually, as of July 1, the first day of the HMEPS plan year. This report was prepared at the request of the Board and is intended for use by the HMEPS staff and those designated or approved by the Board. This report may be provided to parties other than HMEPS staff only in its entirety and only with the permission of the Board, or as required by law.

Based on the changes to the HMEPS statute, the employer contribution is now comprised of two pieces. The first piece is the amortization of the Legacy Liability as of July 1, 2016 determined as part of the July 1, 2016 Risk Sharing Valuation Study. The Legacy Liability is amortized over a 30-year period beginning on July 1, 2017. These amortization payments are fixed and grow at the assumed payroll growth rate of 2.75%. The second part of the contribution is the City Contribution Rate determined by the valuation and implemented by the Board. The City Contribution Rate becomes effective twelve months after the valuation date, i.e., the rate determined by this July 1, 2016 actuarial valuation will be used by the Board when establishing the City Contribution Rate for the year beginning July 1, 2017 and ending June 30, 2018.

The contribution rate for fiscal year 2017 was established under the Amended and Restated Meet & Confer Agreement (ARM&CA) between the Board and the City of Houston. The City will contribute the greater of the 2016 fiscal year contribution increased by $10 million or 29.36% of payroll in fiscal year 2017. It is expected that the 29.36% of payroll will be the ultimate contribution for fiscal year 2017.

Based on the revised statutes that govern HMEPS, the estimated City contribution for FY 2018 is estimated to be $175.5 million. This is comprised $124.0 million for the Legacy Liability amortization payment and $51.5 million based on the City Contribution Rate of 8.17% of pay and an estimated payroll of $630.7 million.

Financing objectives and funding policy

The Legacy Liability as of July 1, 2016 is established as part of this RSVS. As specified by statute, the Legacy Liability is amortized over 30 years beginning on July 1, 2017. The Legacy Liability payments are fixed payments that grow at 2.75% per year.

Each future valuation will establish either a liability gain layer or a liability loss layer. These layers will represent unexpected increases/decreases in the unfunded actuarial accrued liability (after subtracting out any remaining Legacy Liability or any remaining prior years' liability layers). These bases will be amortized over a 30-year period beginning one year after the valuation date using a level percentage of payroll amortization method. Because the Legacy Liability is equal to the UAAL as of July 1, 2016 there is no liability gain/loss layer established with this valuation.

The contribution rate and liabilities are computed using the Entry Age Normal actuarial cost method. The employer contribution is the sum of two pieces: the Legacy Liability amortization payment, and the City Contribution Rate. The City Contribution Rate is comprised of two pieces: (i) the employer normal cost rate and (ii) the amortization of the liability gain/loss layers. Both the normal cost rate and the amortization of the liability gain/loss layers are determined as a level percentage of pay. Each liability gain/loss layer is amortized over a 30-year period beginning one year after the valuation date for which the layer was established. The amortization rate is adjusted for the one-year deferral in contribution rates.

Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches 100%. The funded ratio as of July 1, 2016 is 55.5%. This is an increase from the 54.2% funded ratio from the prior year's valuation. The funded ratio includes recognition of $250 million in Pension Obligation Bonds proceeds as a receivable. These proceeds are expected to be received by December 31, 2017. The funded status alone is not appropriate for assessing the need for or the amount of future contributions and is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

The calculated City Contribution Rate for FY 2018 is 8.17%. This excludes the contribution for the Legacy Liability. When the amortization payment for the Legacy Liability is included, it is estimated that the FY 2018 rate will be approximately 27.84% of pay. This rate is less than the 31.81% rate calculated in the 2015 valuation for fiscal year 2017. This decrease is due to the change in the plan provisions and the inclusion of the Pension Obligation Bond proceeds as a receivable. Please see Table 6 for a detailed analysis of the change in the calculated employer contribution rate from the prior year to this year.

Plan Experience

As part of each valuation, we examine the System's experience relative to the assumptions. The aggregate results of these analyses are disclosed in Tables 5 & 6. This past fiscal year the System had an experience liability loss of approximately $7.5 million and an experience loss on the actuarial value of assets of approximately $76.1 million. Note, due to the magnitude of the changes to benefit provisions, funding policies, and actuarial assumptions, the fiscal year 2016 experience information is less meaningful. Thus we have provided less detail in this year's report.

Benefit Provisions

The benefit provisions reflected in this valuation are those in effect following the passage and signing into law of SB 2190. There have been substantial changes in the benefit provisions since the prior valuation date that have a material financial impact on HMEPS. The primary changes are as follows:

- Modification of cost-of-living adjustment (COLA) to be 50% of the five-year average on investments less 5%; e.g. if five-year average is 7.0% the COLA is 1% [(7%-5%) x 50%], but not more than 2% or less than 0%
- Increases in the member contribution rates to 8.0%, 4.0% and 3.0% respectively for Groups A, B and D
- One third of the Group D 3.0% contribution (or 1.0%) will be a contribution to a notional cash-balance account
- Group D members receive a COLA (except those who terminated prior to the effective date of the 2017 legislation)
- Deferred Retirement Option Plan accounts and cash-balance accounts will be credited with half of the five-year average of the investment returns, but not more than 7.5% or less than 2.5%
- Survivor benefits were decreased from 100% to 80% or 50%, depending on date of termination of employment and marital status at termination of employment

The benefit provisions are summarized in Appendix B.

Assumptions and Methods

Except as noted below, the actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the plan's actuary. Except as noted below, the current assumptions were adopted by the Board in 2016 following a regularly scheduled experience study. The rationale for all of the current assumptions is included in that report, dated February 25, 2016.

As part of the legislation enacting the benefit changes, the investment return assumption (7.0%) was set into statute (Article 6243h, Vernon's Texas Civil Statutes). This assumption is now considered a prescribed assumption under the actuarial standards of practice. With the lowering of the investment return assumption from 8.0% to 7.0% we believe it is appropriate to make changes to other economic assumptions that are correlated with the investment return assumption. In particular, we are recommending the inflation assumption be decreased from 2.50% to 2.25% and that corresponding decreases in the salary increase assumptions and payroll growth assumptions also be made.

The actuarial assumptions represent estimates of future experience and are not market measures. The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results (and future measures) can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations are intended to provide information for rational decision making.

This report does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

All assumptions and methods are described in Appendix A.

GASB 67

The System was required to begin complying with Governmental Accounting Standards Board Statement No. 67 with the fiscal year ending June 30, 2014. The GASB No. 67 information for the fiscal year ending June 30, 2016 was provided to HMEPS in a separate report dated October 14, 2016 and is not contained in this report.

Data

Member data for retired, active and inactive members was supplied as of July 1, 2016 by the HMEPS staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data.

Asset information as of July 1, 2016 was taken from the Comprehensive Annual Financial Report (CAFR) for the Year Ended June 30, 2016.

Certification

We were asked to determine if an unanticipated actuarial cost occurred in the administration of the Deferred Retirement Option Plan (DROP). It is our opinion that the administration of the DROP had no material unanticipated actuarial costs during the prior fiscal year.

All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. The trend data schedules shown in the Notes section of the HMEPS CAFR are based on our valuation reports, but were prepared by HMEPS staff. We certify that the information presented herein is accurate and fairly portrays the actuarial position of HMEPS as of July 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices, and the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. Mr. Newton is an Enrolled Actuary and also a Member of the American Academy of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries. Both of the undersigned are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Company

Joseph P. Newton, FSA, EA, MAAA
Senior Consultant

Lewis Ward
Consultant

RISK SHARING VALUATION STUDY

The purpose of the Risk Sharing Valuation Study (RSVS) is to determine the City Contribution Rate for the fiscal year beginning one year after the valuation date. In addition, since this is the initial RSVS this study also determines two additional items.

- The initial RSVS determines the Corridor and Corridor midpoint to be used in all future RSVS
- The initial RSVS determines the Legacy Liability as well as the schedule of Legacy Liability payments for fiscal year 2018 – 2047 (contribution amounts are scheduled amounts unless revised per the state statute)

The first exhibit in this section shows the RSVS Corridor. Column 3 shows the Corridor Midpoint which for fiscal year 2018 is 8.17% of pay. Columns 2 and 4 show the Corridor Minimum and Corridor Maximum respectively. Column 5 shows the actual City Contribution Rate for the fiscal year.

The next exhibit shows the individual pieces and total City Contribution Rate. While only one year of information is shown, this table is intended to show historic information in the future.

The third exhibit shows the Liability Gain/Loss Layers established by each RSVS. Columns 2 and 3 show the original liability layer and any remaining liability layer respectively. Column 4 is the payment on that particular layer for the fiscal year beginning one year after the valuation date. The payment is determined using a level percentage of payroll and the remaining amortization period as shown in column 5. The payments reflect the one year delay between the determination of the payment and the beginning of the fiscal year in which the payment is made. The dollar amounts of the payments are summed and then converted to a percentage of payroll based on the projected payroll for the fiscal year beginning one year after the valuation date.

The final exhibit is the Legacy Liability schedule. This table shows the amortization schedule of the Legacy Liability for each of the next 30 years. Column 2 shows the remaining Legacy Liability as of that measurement date while Column 3 shows the payment on the Legacy Liability for the fiscal year beginning one year after the valuation date.

The unfunded actuarial accrued liability is equal to the sum of the Remaining Layer column on the Liability Gain/Loss Layers exhibit and the Remaining Legacy Liability column as of the valuation date.

RISK SHARING VALUATION - CORRIDOR

Fiscal Year Ending	Corridor Minimum	Corridor Midpoint	Corridor Maximum	Actual City Contribution Rate
(1)	(2)	(3)	(4)	(5)
June 30, 2018	3.17%	8.17%	13.17%	8.17%
June 30, 2019	3.27%	8.27%	13.27%	
June 30, 2020	3.32%	8.32%	13.32%	
June 30, 2021	3.36%	8.36%	13.36%	
June 30, 2022	3.41%	8.41%	13.41%	
June 30, 2023	3.44%	8.44%	13.44%	
June 30, 2024	3.48%	8.48%	13.48%	
June 30, 2025	3.51%	8.51%	13.51%	
June 30, 2026	3.54%	8.54%	13.54%	
June 30, 2027	3.57%	8.57%	13.57%	
June 30, 2028	3.59%	8.59%	13.59%	
June 30, 2029	3.61%	8.61%	13.61%	
June 30, 2030	3.63%	8.63%	13.63%	
June 30, 2031	3.65%	8.65%	13.65%	
June 30, 2032	3.67%	8.67%	13.67%	
June 30, 2033	3.69%	8.69%	13.69%	
June 30, 2034	3.70%	8.70%	13.70%	
June 30, 2035	3.71%	8.71%	13.71%	
June 30, 2036	3.72%	8.72%	13.72%	
June 30, 2037	3.73%	8.73%	13.73%	
June 30, 2038	3.74%	8.74%	13.74%	
June 30, 2039	3.74%	8.74%	13.74%	
June 30, 2040	3.75%	8.75%	13.75%	
June 30, 2041	3.76%	8.76%	13.76%	
June 30, 2042	3.77%	8.77%	13.77%	
June 30, 2043	3.78%	8.78%	13.78%	
June 30, 2044	3.79%	8.79%	13.79%	
June 30, 2045	3.79%	8.79%	13.79%	
June 30, 2046	3.80%	8.80%	13.80%	
June 30, 2047	3.81%	8.81%	13.81%	

RISK SHARING VALUATION - CITY CONTRIBUTION RATE

Fiscal Year Ending	Employer Normal Cost	Amortization Payment	City Contribution Rate
(1)	(2)	(3)	(4)
June 30, 2018	8.17%	0.00%	8.17%

RISK SHARING VALUATION - LIABILITY (GAIN)/LOSS LAYERS

Valuation Year Base Established	Original Layer	Remaining Layer	Current Year's Payment [1]	Years Remaining From Date Established
(1)	(2)	(3)	(4)	(5)
July 1, 2016	$ -	$ -	$ -	N/A
Total		$ -	$ -	
Projected Payroll for Fiscal Year +1			$ 630,651,218	
Amortization Payments as % of Projected Pay			0.00%	

[1] This is the payment to be made for the fiscal year beginning one year after the valuation date.

RISK SHARING VALUATION - LEGACY LIABILITY

Fiscal Year End		Remaining Legacy Liability		Current Year's Payment[1]
(1)		(2)		(3)
June 30, 2016	$	2,109,103,348		Determined by M&C
June 30, 2017		2,123,880,499	$	124,030,357
June 30, 2018		2,144,254,135		127,441,192
June 30, 2019		2,162,525,731		130,945,824
June 30, 2020		2,178,451,118		134,546,835
June 30, 2021		2,191,766,369		138,246,872
June 30, 2022		2,202,186,338		142,048,661
June 30, 2023		2,209,403,104		145,955,000
June 30, 2024		2,213,084,295		149,968,762
June 30, 2025		2,212,871,302		154,092,903
June 30, 2026		2,208,377,355		158,330,458
June 30, 2027		2,199,185,471		162,684,546
June 30, 2028		2,184,846,251		167,158,371
June 30, 2029		2,164,875,526		171,755,226
June 30, 2030		2,138,751,826		176,478,494
June 30, 2031		2,105,913,679		181,331,653
June 30, 2032		2,065,756,717		186,318,273
June 30, 2033		2,017,630,566		191,442,026
June 30, 2034		1,960,835,534		196,706,682
June 30, 2035		1,894,619,048		202,116,115
June 30, 2036		1,818,171,846		207,674,309
June 30, 2037		1,730,623,900		213,385,352
June 30, 2038		1,631,040,048		219,253,449
June 30, 2039		1,518,415,320		225,282,919
June 30, 2040		1,391,669,929		231,478,199
June 30, 2041		1,249,643,912		237,843,850
June 30, 2042		1,091,091,395		244,384,556
June 30, 2043		914,674,442		251,105,131
June 30, 2044		718,956,486		258,010,522
June 30, 2045		502,395,281		265,105,812
June 30, 2046		263,335,367		272,396,221
June 30, 2047		-		-

[1] Contribution amount for fiscal year that begins one year after valuation date

RISK SHARING VALUATION - CITY CONTRIBUTION INFORMATION

Fiscal Year of City Payment	City Contribution Rate	City Contribution Amount	City Contribution Amount as % of Expected Payroll	Estimated Total City Contribution ($)	Estimated Total City Contribution Amount as % of Expected Payroll
(1)	(2)	(3)	(4)	(5)	(6)
June 30, 2018	8.17%	$ 124,030,357	19.67%	$ 175,546,778	27.84%
June 30, 2019	8.27%	127,441,192	19.67%	181,046,673	27.94%
June 30, 2020	8.32%	130,945,824	19.67%	186,330,592	27.99%
June 30, 2021	8.36%	134,546,835	19.67%	191,726,607	28.03%
June 30, 2022	8.41%	138,246,872	19.67%	197,349,343	28.08%
June 30, 2023	8.44%	142,048,661	19.67%	202,992,116	28.11%
June 30, 2024	8.48%	145,955,000	19.67%	208,870,563	28.15%
June 30, 2025	8.51%	149,968,762	19.67%	214,842,569	28.18%
June 30, 2026	8.54%	154,092,903	19.67%	220,985,542	28.21%
June 30, 2027	8.57%	158,330,458	19.67%	227,301,329	28.24%
June 30, 2028	8.59%	162,684,546	19.67%	233,714,836	28.26%
June 30, 2029	8.61%	167,158,371	19.67%	240,309,433	28.28%
June 30, 2030	8.63%	171,755,226	19.67%	247,090,007	28.30%
June 30, 2031	8.65%	176,478,494	19.67%	254,061,943	28.32%
June 30, 2032	8.67%	181,331,653	19.67%	261,230,596	28.34%
June 30, 2033	8.69%	186,318,273	19.67%	268,601,525	28.36%
June 30, 2034	8.70%	191,442,026	19.67%	276,083,121	28.37%
June 30, 2035	8.71%	196,706,682	19.67%	283,773,345	28.38%
June 30, 2036	8.72%	202,116,115	19.67%	291,677,814	28.39%
June 30, 2037	8.73%	207,674,309	19.67%	299,802,585	28.40%
June 30, 2038	8.74%	213,385,352	19.67%	308,146,935	28.41%
June 30, 2039	8.74%	219,253,449	19.67%	316,723,730	28.41%
June 30, 2040	8.75%	225,282,919	19.67%	325,532,176	28.42%
June 30, 2041	8.76%	231,478,199	19.67%	334,585,805	28.43%
June 30, 2042	8.77%	237,843,850	19.67%	343,883,912	28.44%
June 30, 2043	8.78%	244,384,556	19.67%	353,440,601	28.45%
June 30, 2044	8.79%	251,105,131	19.67%	363,255,304	28.46%
June 30, 2045	8.79%	258,010,522	19.67%	373,342,814	28.46%
June 30, 2046	8.80%	265,105,812	19.67%	383,702,236	28.47%
June 30, 2047	8.81%	272,396,221	19.67%	394,349,585	28.48%

Item	July 1, 2016	July 1, 2015
Membership		
Number of:		
Active members	12,103 [1]	11,827
Retirees and beneficiaries	10,289	10,023
Inactive members	5,606	5,495
Total	27,998	27,345
Covered payroll (annualized)	$ 608,210	$ 584,025
Calculated Employer Contribution Rates	8.17 % [2]	31.81 %
Assets		
Market value	$ 2,400,023	$ 2,456,544
Actuarial value	2,625,896 [3]	2,582,510
Estimation of return on market value	1.2 %	2.8 %
Estimation of return on actuarial value	-3.8 %	6.8 %
Employer contribution	$ 159,959	$ 145,007
Member contribution	$ 15,874	$ 16,198
Ratio of actuarial value to market value	109.4 %	105.1 %
External cash flow as % of market value assets	-3.6 %	-3.4 %
Actuarial Information		
Unfunded actuarial accrued liability (UAAL)	$ 2,109,103	$ 2,183,209
GASB funded ratio	55.5 %	54.2 %
Employer Normal Cost %	8.17 %	8.11 %
Amortization rate [4]	0.00 %	23.70 %
City Contribution Rate	8.17 %	31.81 %
Estimated Total City Contribution for Fiscal Year	2018	2017
City Contribution Rate	$ 51,524,205	N/A
Legacy Liability Payment	$ 124,030,357	N/A
Total	$ 175,554,562	N/A

Note: Dollar amounts in $000, unless otherwise noted

[1] Counts include an additional 170 Group D members.

[2] For 7-1-2015 column this rate is determined in accordance with the ARM&CA.
For 7-1-2016 column this rate is the City Contribution Rate determined in accordance with the State statute.

[3] AVA has been marked to market with a receivable of $250 million in POB proceeds discounted from December 31, 2017.

[4] 30 years for 7-1-2015, beginning July 1, 2016 amortization rate of liability layers, excluding Legacy Liability.

STATEMENT OF PLAN NET POSITION

		July 1, 2016
A. ASSETS		
1. Current Assets		
a. Cash and short term investments		
1) Cash on hand	$	7,551
2) Short term investments		79,292
b. Accounts Receivable		
1) Sale of investments		6,048
2) Other		7,330
c. Total Current Assets	$	100,221
2. Long Term Investments		
a. US. Government securities	$	$92,417
b. Corporate bonds		200,401
c. Capital stocks		664,796
d. Commingled Funds		364,165
e. LP's, real estate trusts, loans and mortgages		995,727
f. Total long term investments	$	2,317,506
3. Other Assets		
a. Collateral on securities lending	$	73,941
b. Furniture, fixtures and equipment, net		298
c. Total other assets	$	74,239
4. Total Assets	$	2,491,966
B. LIABILITIES		
1. Current Liabilities		
a. Amounts due on asset purchases	$	12,133
b. Accrued liabilities		5,869
c. Collateral on securities lending		73,941
2. Total Liabilities		91,943
3. Net Position Held in Trust	$	2,400,023
C. TARGET ASSET ALLOCATION FOR CASH & LONG TERM INVESTMENTS		
1. Cash		0.0%
2. Fixed Income		15.0%
3. Real Estate		10.0%
4. Private Equities		17.5%
5. Global Equities		35.0%
6. Alternative Investments		22.5%
7. Total		100.0%

Note: Dollar amounts in $000
Columns may not add due to rounding.

RECONCILIATION OF PLAN NET POSITION

		Year Ending June 30, 2016
1. Fair value of assets at beginning of year	$	2,456,544
2. Revenue for the year		
a. Contributions		
i. Member contributions	$	15,874
ii. Employer contributions (see note)		159,959
iii. Total	$	175,833
b. Net investment income		
i. Interest	$	17,753
ii. Dividends		18,843
iii. Earnings from LP's and real estate trusts		1,034
iv. Net appreciation (depreciation) on investments		(2,454)
v. Net proceeds from lending securities		349
vi. Less investment expenses		(7,538)
vii. Other		1,303
c. Total revenue	$	205,123
3. Expenditures for the year		
a. Refunds	$	1,105
b. Benefit payments		253,179
c. Administrative and miscellaneous expenses		7,360
d. Total expenditures	$	261,644
4. Increase in net position (Item 2c - Item 3d)	$	(56,521)
5. Market value of assets at end of year (Item 1 + Item 4)	$	2,400,023

Note: Dollar amounts in $000

Employer contribution does not include amounts contributed to the replacement benefit plan.

Columns may not add due to rounding.

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

		July 1, 2016
1.	Actuarial value of assets at beginning of year	$ 2,582,510
2.	Net new investments	
	a. Contributions	$ 175,833
	b. Benefits and refunds paid	(261,644)
	c. Subtotal	(85,811)
3.	Assumed investment return rate for fiscal year	8.00%
4.	Assumed investment income for fiscal year	$ 203,235
5.	Expected Actuarial Value at end of year (1+ 2 + 4)	$ 2,699,934
6.	Fair value of assets at end of year	$ 2,400,023
7.	Difference (6 - 5)	$ (299,911)

8. Development of amounts to be recognized as of July 1, 2016:

Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income	Offsetting of Gains/ (Losses)	Net Deferrals Remaining	Years Remaining	Recognized For This Valuation	Remaining After This Valuation
	(1)	(2)	(3) = (1) + (2)	(4)	(5) = (3) / (4)	(6) = (3) - (5)
2012	$ (13,041)	$ 0	$ (13,041)	1	$ (13,041)	$ (0)
2013	0	0	0	2	0	0
2014	0	0	0	3	0	0
2015	(112,925)	0	(112,925)	4	(28,231)	(84,694)
2016	(173,945)	0	(173,945)	5	(34,789)	(139,156)
Total	$ (299,911)	$ 0	$ (299,911)		$ (76,061)	$ (223,850)

9.	Preliminary actuarial value of plan net position, end of year (Item 6 - Item 8 Column 6)	$ 2,623,873
10.	Asset gain (loss) for year (Item 9 - Item 5)	$ (76,061)
11.	Asset gain (loss) as % of actual actuarial assets	(2.90%)
12.	Ratio of actuarial value to fair value	109.4%
13.	Final Actuarial value of plan net assets	
	a. Change to mark actuarial value of assets to market	$ (223,850)
	b. Estimated 2016 POB proceeds discounted to valuation date	225,873
	c. Final actuarial value of assets (Item 9 + Item 13a + Item 13b)	2,625,896

Notes: Remaining deferrals in Column (1) for prior years are from last year's report column (6) of page 80. The number in the current year is the difference between the remaining deferrals for prior years and the total Excess/(Shortfall) return shown in Item 7. Column 2 is a direct offset of the current year's excess/(shortfall) return against prior years' excess/(shortfall) of the opposite type.

ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS

			July 1, 2016
1.	Active members		
	a.	Retirement benefits	$ 2,127,351
	b.	Deferred termination benefits	137,067
	c.	Refunds	12,647
	d.	Death benefits	72,880
	e.	Disability benefits	11,980
	f.	Total	$ 2,361,925
2.	Members in Pay Status		
	a.	Service retirements	$ 2,408,724
	b.	Disability retirements	36,248
	c.	Beneficiaries	260,026
	d.	Total	$ 2,704,998
3.	Inactive members		
	a.	Vested terminations	$ 185,737
	b.	Nonvested terminations	3,754
	c.	Total	$ 189,491
4.	Total actuarial present value of future benefits		$ 5,256,414

Note: Dollar amounts in $000

GRS

CALCULATION OF TOTAL ACTUARIAL GAIN OR LOSS

1.	Unfunded actuarial accrued liability (UAAL) as of July 1, 2015	$	2,183,209
2.	Employer normal cost and administrative expense for year[1]		41,987
3.	Employer Contributions during year ending June 30, 2016[1]		(159,959)
4.	Interest on UAAL for one year		174,657
5.	Interest on Item 2 and Item 3 for one-half year		(4,628)
6.	Expected UAAL as of July 1, 2016 (1+2+3+4+5)	$	2,235,266
7.	Actual UAAL as of July 1, 2016	$	2,109,103
8.	Actuarial gain/(loss) for the period (6 - 7)		126,163
	SOURCE OF GAINS/(LOSSES)		
9.	Asset gain/(loss) (See page 80)		(76,061)
10.	Plan changes	$	816,049
11.	Assumption changes	$	(608,392)
12.	Method change	$	(223,850)
13.	Receivable for Pension Obligation Bonds proceeds	$	225,873
14.	Total liability gain/(loss) for the period	$	(7,456)
15.	Actuarial gain/(loss) for the period	$	126,163

Note: Dollar amounts in $000

[1] Employee contributions excluded due to use of replacement life normal cost method for ongoing plan. New members (Group D) do not contribute to the plan for fiscal year 2016.

CHANGE IN CALCULATED CONTRIBUTION RATE SINCE THE PRIOR VALUATION

1.	Calculated Contribution Rate as of July 1, 2015		31.81%
2.	Change in Contribution Rate During Year		
	a. Change in Employer Normal Cost	N/A	
	b. Addition of administrative expenses	N/A	
	c. Recognition of prior years' asset losses	N/A	
	d. Actuarial loss from current year asset performance	N/A	
	e. Actuarial loss from liability sources	N/A	
	f. Impact of City contributing less than actuarially determined rate	N/A	
	g. Effect of projected payroll growing slower than expected	N/A	
	h. Effect of resetting amortization period to 30 years	N/A	
	i. Change in Actuarial Assumptions and Methods	N/A	
	j. Impact of Pension Reforms	(3.97%)	
	k. Total Change		(3.97%)
3.	Calculated Contribution Rate as of July 1, 2016		27.84%

NEAR TERM OUTLOOK

Valuation as of July 1,	Unfunded Actuarial Accrued Liability (UAAL, in 000s)	Funded Ratio	City Contribution Rate[1]	Corridor Midpoint	Market Value of Fund (in 000s)	For Fiscal Year Ending June 30,	Projected Compensation	Employer Contributions	Employee Contributions	Benefit Payments[2]	Net External Cash Flow
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2016	$ 2,109,103	55.5%	8.17%	8.17%	$ 2,625,896	2017	$ 613,772	$ 180,204	$ 15,785	$ 297,508	$ (101,519)
2017	2,123,880	56.0%	8.27%	8.27%	2,705,541	2018	630,651	175,547	34,167	313,329	(103,615)
2018	2,144,254	56.5%	8.32%	8.32%	2,788,645	2019	647,994	181,047	33,707	331,163	(116,409)
2019	2,162,526	57.0%	8.36%	8.36%	2,864,385	2020	665,814	186,331	33,283	349,427	(129,814)
2020	2,178,451	57.4%	8.41%	8.41%	2,931,614	2021	684,124	191,727	32,897	367,533	(142,910)
2021	2,191,766	57.7%	8.44%	8.44%	2,990,054	2022	702,937	197,349	32,539	385,900	(156,012)
2022	2,202,186	58.0%	8.48%	8.48%	3,039,085	2023	722,268	202,992	32,208	404,229	(169,028)
2023	2,209,403	58.2%	8.51%	8.51%	3,078,138	2024	742,130	208,871	31,917	422,292	(181,504)
2024	2,213,084	58.4%	8.54%	8.54%	3,107,070	2025	762,539	214,843	31,670	397,556	(151,044)
2025	2,212,871	58.9%	8.57%	8.57%	3,169,464	2026	783,509	220,986	31,467	408,377	(155,925)
2026	2,208,377	59.4%	8.59%	8.59%	3,231,207	2027	805,055	227,301	31,321	417,117	(158,494)

These projections are based on the HMEPS statute as amended by SB 2190 of the 2017 Legislature.

[1] Contribution rate goes into effect 12 months after the valuation date

[2] Includes refunds taken by terminating members and plan administrative expenses

Note: Dollar amounts in $000.

ANALYSIS OF NORMAL COST

	July 1, 2016 (1)	July 1, 2015 (2)
1. Gross normal cost rate		
a. Retirement benefits	7.39%	5.59%
b. Deferred termination benefits	1.41%	0.88%
c. Refunds[1]	0.63%	0.00%
d. Disability benefits	0.13%	0.08%
e. Death benefits	0.42%	0.37%
f. Administrative expenses	1.19%	1.19%
g. Total	11.17%	8.11%
2. Employee Contribution rate[1]	3.00%	0.00%
3. Employer Normal Cost (including Administrative expenses)	8.17%	8.11%

[1] For the July 1, 2015 valuation, refund of employee contributions were excluded due to use of replacement life normal cost method for ongoing plan. New members (Group D) did not contribute to the plan at that time. Effective with July 1, 2016 valuation, refunds are included because new members now contribute 3% in total to the plan.

HISTORICAL CITY CONTRIBUTION RATES

Valuation Date (1)	Calculated Contribution Rate[1] (2)	Time Period for Contribution Rate (3)	Actual Contribution Rate (4)
July 1, 1987	5.83%	January 1, 1988 through December 31, 1988	5.15%
July 1, 1988	6.27	January 1, 1989 through December 31, 1989	5.15
July 1, 1989	6.88	January 1, 1990 through December 31, 1990	6.27
July 1, 1990	6.23	January 1, 1991 through December 31, 1991	6.27
July 1, 1991	8.77	January 1, 1992 through June 30, 1993	6.27
July 1, 1992	9.11	July 1, 1993 through June 30, 1994	9.11
July 1, 1993	9.30	July 1, 1994 through June 30, 1995	9.30
July 1, 1994	8.80	July 1, 1995 through June 30, 1996	8.80
July 1, 1995	9.20	July 1, 1996 through June 30, 1997	9.20
July 1, 1996	9.10	July 1, 1997 through June 30, 1998	9.10
		July 1, 1998 through June 30, 1999	9.10
July 1, 1998	9.30	July 1, 1999 through June 30, 2000	9.30
July 1, 1999	9.80	July 1, 2000 through June 30, 2001	10.00
July 1, 2000	9.50	July 1, 2001 through June 30, 2002	10.00
July 1, 2001	17.70	July 1, 2002 through June 30, 2003	10.00
July 1, 2002	31.80	July 1, 2003 through June 30, 2004	14.70
July 1, 2003	52.89	July 1, 2004 through June 30, 2005	92.55[2,3]
July 1, 2004	29.43	July 1, 2005 through June 30, 2006	15.49[3]
July 1, 2005	24.10	July 1, 2006 through June 30, 2007	15.89[3]
July 1, 2006	24.63	July 1, 2007 through June 30, 2008	15.52[4]
July 1, 2007	19.47	July 1, 2008 through June 30, 2009	14.63[4]
July 1, 2008	19.20	July 1, 2009 through June 30, 2010	14.65[4]
July 1, 2009	20.07	July 1, 2010 through June 30, 2011	16.30[4]
July 1, 2010	22.36	July 1, 2011 through June 30, 2012	17.74[5]
July 1, 2011	23.45	July 1, 2012 through June 30, 2013	21.10[5]
July 1, 2012	26.10	July 1, 2013 through June 30, 2014	23.70[5]
July 1, 2013	27.50	July 1, 2014 through June 30, 2015	25.11[5]
July 1, 2014	27.38	July 1, 2015 through June 30, 2016	27.09[5]
July 1, 2015	31.81	July 1, 2016 through June 30, 2017	N/A
July 1, 2016	27.84	July 1, 2017 through June 30, 2018	N/A

1. Rate determined by the actuarial valuation is for the fiscal year beginning on the July 1st next following the valuation date.

2. Includes $300 million note.

3. As pursuant to the funding schedule from the 2004 Meet and Confer Agreement.

4. As pursuant to the funding schedule from the Fourth Amendment.

5. As pursuant to the funding schedule from the Amended and Restated Meet and Confer Agreement.

Note: beginning with the July 1, 2016 valuation, the calculated contribution rate is comprised of the fixed Legacy Liability contribution amount and the City Contribution Rate. The rate shown is an estimate based on the conversion of the fixed Legacy Liability contribution amount to a percentage of projected payroll.

CALCULATION OF ANNUAL REQUIRED CONTRIBUTION RATE

			July 1, 2016 (1)		July 1, 2015 (2)	
1.		Annualized salaries on valuation date	$ 608.210		$ 584,025	
2.		Projected payroll for upcoming fiscal year[1]	$ 613,772		$ 590,674	
3.		Present value of future pay	$ 4,482,435		$ 4,141,116	
4.		Employer normal cost rate	8.17	%	6.92	%
5.		Actuarial accrued liability for active members				
	a.	Present value of future benefits for active members	$ 2,361,925		$ 2,315,047	
	b.	Less: present value of future employer normal costs	(426,297)		(270,476)	
	c.	Less: present value of future employee contributions	(95,117)		(111,712)	
	d.	Actuarial accrued liability	$ 1,840,511		$ 1,932,859	
6.		Total actuarial accrued liability for:				
	a.	Retirees and beneficiaries	$ 2,704,998		$ 2,638,305	
	b.	Inactive participants	$ 189,491		194,555	
	c.	Active members (Item 5d)	$ 1,840,511		1,932,859	
	d.	Total	$ 4,734,999		$ 4,765,719	
7.		Actuarial value of assets	$ 2,625,896[2]		$ 2,582,510	
8.		Unfunded actuarial accrued liability (UAAL) (Item 6d - Item 7)	$ 2,109,103		$ 2,183,209	
9.		Assumed payroll growth rate	2.75	%	3.00	%
10.		Estimated Employer Contribution requirement				
	a.	UAAL amortization payment as % of projected pay	19.67	%	23.70	%
	b.	Employer normal cost	8.17	%	8.11	%
	c.	Contribution requirement (a + b)	27.84	%	31.81	%

Note: Dollar amount in $000

[1] The projected payroll is the actual pay received for the just completed fiscal year (including pay for any member who received pay during the year: i.e. active, terminated, retired, etc.). This pay is then increased by the payroll growth rate and by the ratio of the current number of active members to the average number of active members during the prior fiscal year.

[2] Actuarial value of assets marked to market at July 1, 2016. Includes receivable of $250 million Pension Obligation Bonds to be received by December 31, 2017.

HISTORICAL SOLVENCY TEST

	Aggregated Accrued Liabilities For				Portions of Accrued Liabilities Covered by Reported Assets		
Valuation Date	Active Members Contributions	Retirees Beneficiaries and Vested Terminations[1]	Members (City Financed Portion)	Actuarial Value of Assets	(5)/(2)	[(5)-(2)]/(3)	[(5)-(2)-(3)]/(4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
July 1, 1996	$ 45,819	$ 438,486	$ 558,154	$ 857,332	100.0%	100.0%	67%
July 1, 1998	34,781	502,335	703,025	1,095,617	100.0%	100.0%	79%
July 1, 1999	33,985	599,270	706,678	1,222,240	100.0%	100.0%	83%
July 1, 2000	38,292	646,611	824,470	1,376,020	100.0%	100.0%	84%
July 1, 2001	36,449	804,901	1,114,456	1,490,179	100.0%	100.0%	58%
July 1, 2002	35,888	893,568	1,585,733	1,519,717	100.0%	100.0%	37%
July 1, 2003	44,388	1,115,801	2,118,063	1,510,264	100.0%	100.0%	17%
July 1, 2004	62,062	1,355,157	1,216,599	1,501,235	100.0%	100.0%	7%
July 1, 2005	48,150	1,577,345	1,099,777	1,777,656	100.0%	100.0%	14%
July 1, 2006	58,043	1,729,863	1,106,389	1,867,293	100.0%	100.0%	7%
July 1, 2007	69,544	1,824,992	1,234,178	2,193,745	100.0%	100.0%	24%
July 1, 2008	81,182	1,904,333	1,310,855	2,310,384	100.0%	100.0%	25%
July 1, 2009	95,268	1,974,714	1,381,428	2,284,442	100.0%	100.0%	16%
July 1, 2010	107,421	2,058,813	1,466,236	2,273,142	100.0%	100.0%	7%
July 1, 2011	118,202	2,154,959	1,517,167	2,328,804	100.0%	100.0%	4%
July 1, 2012	124,848	2,312,548	1,529,468	2,344,128	100.0%	96.0%	0%
July 1, 2013	132,238	2,431,950	1,565,395	2,382,585	100.0%	92.5%	0%
July 1, 2014	139,203	2,538,225	1,611,151	2,490,521	100.0%	92.6%	0%
July 1, 2015	143,097	2,832,860	1,789,762	2,582,510	100.0%	86.1%	0%
July 1, 2016	146,407	2,894,489	1,694,103	2,400,023	100.0%	77.9%	0%

Note: Dollar amounts in $000

1. Column (3) included AAL for DROP participants until 2003, now in Column (4)

SCHEDULE OF FUNDING PROGRESS

Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annualized Salaries	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
July 1, 1996	$857,332	$1,042,459	$185,127	82.2%	$367,610	50.4%
July 1, 1998	1,095,617	1,240,141	144,524	88.3%	397,698	36.3%
July 1, 1999	1,222,240	1,339,933	117,693	91.2%	407,733	28.9%
July 1, 2000	1,376,020	1,509,373	133,353	91.2%	432,604	30.8%
July 1, 2001	1,490,179	1,955,806	465,627	76.2%	418,234	111.3%
July 1, 2002	1,519,717	2,515,189	995,472	60.4%	399,794	249.0%
July 1, 2003	1,510,264	3,278,251	1,767,987	46.1%	390,314	453.0%
July 1, 2004	1,501,235	2,633,817	1,132,582	57.0%	366,190	309.3%
July 1, 2005	1,777,656	2,725,272	947,616	65.2%	404,565	234.2%
July 1, 2006	1,867,293	2,894,295	1,027,002	64.5%	422,496	243.1%
July 1, 2007	2,193,745	3,128,713	934,968	70.1%	448,925	208.3%
July 1, 2008	2,310,384	3,296,370	985,986	70.1%	483,815	203.8%
July 1, 2009	2,284,442	3,451,410	1,166,968	66.2%	539,023	216.5%
July 1, 2010	2,273,142	3,632,470	1,359,328	62.6%	550,709	246.8%
July 1, 2011	2,328,804	3,790,328	1,461,524	61.4%	544,665	268.3%
July 1, 2012	2,344,128	3,966,864	1,622,736	59.1%	534,394	303.7%
July 1, 2013	2,382,585	4,129,583	1,746,998	57.7%	549,971	317.7%
July 1, 2014	2,490,521	4,288,579	1,798,058	58.1%	568,992	316.0%
July 1, 2015	2,582,510	4,765,719	2,183,209	54.2%	584,025	373.8%
July 1, 2016	2,625,896	4,734,999	2,109,103	55.5%	608,210	346.8%

Note: Dollar amounts in $000

DISTRIBUTION OF GROUP A ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25													
25-29				1		15	5						21
				$35,000		$36,560	$49,731						$39,621
30-34	1	5	5	8	3	111	102	1					236
	$31,512	$46,491	$54,078	$37,967	$45,430	$45,402	$42,529	$77,434					$44,193
35-39	4	4	6	9	9	167	238	44	1				482
	$55,468	$55,202	$42,581	$47,342	$35,606	$51,029	$51,252	$49,433	$66,240				$50,635
40-44	3	9	7	12	6	136	249	109	36	2			569
	$36,254	$40,760	$51,882	$58,212	$47,109	$50,891	$52,904	$48,703	$54,235	$75,639			$51,540
45-49	6	2	7	9	4	154	307	158	116	48	2		813
	$30,425	$37,373	$43,414	$44,105	$38,898	$51,552	$54,146	$53,511	$58,633	$53,607	$44,105		$53,620
50-54	6	7	4	10	17	172	322	200	161	150	53	4	1,106
	$45,808	$37,856	$48,416	$54,191	$42,879	$52,501	$53,116	$52,889	$59,825	$57,387	$52,367	$58,967	$54,220
55-59	5	4	10	7	10	135	308	198	177	131	92	34	1,111
	$49,966	$31,141	$37,744	$60,789	$75,761	$50,496	$52,913	$53,923	$60,147	$62,307	$61,247	$66,827	$56,203
60-64	2	3	5	5	5	98	248	147	127	98	39	27	804
	$36,379	$51,824	$51,625	$40,059	$41,281	$50,801	$54,083	$54,264	$59,983	$69,763	$69,189	$68,228	$57,532
65 & Over		1		1	2	64	132	68	66	27	20	14	395
		$54,612		$69,795	$66,896	$54,501	$57,962	$58,291	$62,346	$71,540	$65,390	$81,547	$60,397
Total	27	35	44	62	56	1,052	1,911	925	684	456	206	79	5,537
	$42,301	$42,700	$45,958	$49,965	$48,603	$50,650	$52,875	$53,201	$59,694	$61,980	$60,701	$69,516	$54,381

Average:	Age:	51.58	Number of participants:	Fully Vested:	5,313	Males:	3,008
	Service:	15.53		Not Vested:	224	Females:	2,529

Note: A former Group A employee who is rehired on or after January 1, 2008 is still a Group A employee.

Note: The chart includes four employees who were formerly members of Group C. The chart also includes employees who switch from Group B to Group A.

GRS

DISTRIBUTION OF GROUP B ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25													
25-29	2	1		3		3							9
	$28,704	$34,478		$25,807		$31,897							$29,444
30-34	1					5	5						11
	$27,165					$36,923	$39,183						$37,063
35-39	1	2				2	2	20	2				29
	$36,317	$34,626				$56,791	$25,714	$49,222	$51,550				$46,832
40-44	1		4	4	2	8	1	57	39				116
	$24,394		$42,074	$48,159	$45,497	$46,827	$27,435	$46,006	$46,049				$45,661
45-49	3	1	2	1	2	10	1	81	122	43			266
	$36,081	$41,163	$30,230	$35,501	$36,153	$38,747	$25,367	$45,254	$49,457	$50,089			$47,307
50-54	3	4	3	4	7	11		72	109	99	41	1	354
	$75,559	$46,987	$42,425	$32,050	$50,582	$50,609		$45,240	$48,194	$51,804	$47,887	$61,140	$48,713
55-59	3	5	2	5	4	13	1	63	113	73	37	12	331
	$52,293	$46,872	$54,337	$73,096	$47,317	$55,760	$170,324	$48,831	$48,770	$49,398	$54,088	$50,395	$50,602
60-64	1	2	1	4	2	6	1	46	68	58	19	9	217
	$47,258	$40,606	$44,283	$51,840	$65,903	$62,241	$88,613	$49,397	$48,462	$55,200	$51,771	$73,137	$52,466
65 & Over			4	1	1	1	1	14	38	19	4	1	84
			$45,686	$25,398	$41,949	$38,341	$104,742	$46,535	$55,495	$51,402	$68,568	$58,084	$53,125
Total	15	15	16	22	18	59	12	353	491	292	101	23	1,417
	$45,623	$43,228	$43,233	$46,909	$48,911	$48,294	$55,319	$46,826	$49,086	$51,599	$51,708	$60,096	$49,225

Average:	Age:	53.33	Number of participants:	Fully vested:	1,331	Males:	680
	Service:	21.28		Not vested:	86	Females:	737

Note: A former Group B employee who is rehired on or after January 1, 2008 is still a Group B employee.

DISTRIBUTION OF GROUP D ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25	93	48	36	11	8	3							199
	$32,997	$31,979	$31,433	$32,169	$36,173	$41,366							$32,676
25-29	239	135	158	95	63	83							773
	$36,739	$36,919	$37,511	$37,695	$38,455	$38,168							$37,339
30-34	208	139	158	109	77	253							944
	$40,471	$42,970	$43,534	$44,728	$43,954	$44,877							$43,308
35-39	142	109	107	78	52	192							680
	$46,378	$47,591	$45,993	$45,599	$49,630	$50,017							$47,699
40-44	118	100	87	68	44	169							586
	$43,933	$50,788	$48,991	$51,406	$53,296	$52,392							$49,863
45-49	109	80	62	61	53	163							528
	$44,535	$49,760	$46,367	$53,712	$52,547	$50,167							$49,145
50-54	100	62	72	51	43	161							489
	$44,234	$51,017	$46,154	$44,757	$47,208	$54,903							$49,205
55-59	78	63	58	64	31	137							431
	$48,572	$55,433	$44,246	$51,732	$62,649	$52,825							$51,826
60-64	27	28	34	35	18	106							248
	$48,975	$38,705	$64,205	$46,986	$58,293	$58,011							$54,161
65 & Over	3	10	11	12	10	55							101
	$48,887	$43,205	$62,073	$58,785	$50,577	$61,072							$57,739
Total	1,117	774	783	584	399	1,322							4,979
	$41,694	$45,103	$44,381	$46,374	$48,457	$50,579							$46,096

Average:	Age:	40.63	Number of participants:	Fully vested:	1,322	Males:	2,779
	Service:	3.45		Not Vested:	3,657	Females:	2,200

Note: An additional 170 Group D members are not shown in this table because we did not receive sufficient data to categorize the members.

DISTRIBUTION OF ALL ACTIVE MEMBERS BY AGE AND BY YEARS OF SERVICE ALL EMPLOYEES

Attained Age	0 No. & Avg. Comp.	1 No. & Avg. Comp.	2 No. & Avg. Comp.	3 No. & Avg. Comp.	4 No. & Avg. Comp.	5-9 No. & Avg. Comp.	10-14 No. & Avg. Comp.	15-19 No. & Avg. Comp.	20-24 No. & Avg. Comp.	25-29 No. & Avg. Comp.	30-34 No. & Avg. Comp.	35 & Over No. & Avg. Comp.	Total No. & Avg. Comp.
Under 25	93	48	36	11	8	3							199
	$32,997	$31,979	$31,433	$32,169	$36,173	$41,366							$32,676
25-29	241	136	158	99	63	101	5						803
	$36,673	$36,901	$37,511	$37,308	$38,455	$37,743	$49,731						$37,310
30-34	210	144	163	117	80	369	107	1					1,191
	$40,365	$43,093	$43,858	$44,266	$44,010	$44,927	$42,373	$77,434					$43,426
35-39	147	115	113	87	61	361	240	64	3				1,191
	$46,557	$47,630	$45,812	$45,779	$47,561	$50,523	$51,039	$49,367	$56,446				$48,866
40-44	122	109	98	84	52	313	250	166	75	2			1,271
	$43,584	$49,960	$48,915	$52,224	$52,282	$51,597	$52,802	$47,777	$49,978	$75,639			$50,231
45-49	118	83	71	71	59	327	308	239	238	91	2		1,607
	$43,602	$49,358	$45,621	$52,237	$51,066	$50,470	$54,052	$50,712	$53,929	$51,944	$44,105		$51,105
50-54	109	73	79	65	67	344	322	272	270	249	94	5	1,949
	$45,183	$49,534	$46,127	$45,426	$46,462	$53,565	$53,116	$50,864	$55,130	$55,168	$50,413	$59,401	$51,961
55-59	86	72	70	76	45	285	309	261	290	204	129	46	1,873
	$48,783	$53,489	$43,605	$53,972	$64,200	$51,856	$53,293	$52,694	$55,714	$57,688	$59,194	$62,540	$54,206
60-64	30	33	40	44	25	210	249	193	195	156	58	36	1,269
	$48,078	$40,012	$62,134	$46,640	$55,499	$54,767	$54,222	$53,104	$55,965	$64,348	$63,483	$69,455	$56,007
65 & Over	3	11	15	14	13	120	133	82	104	46	24	15	580
	$48,887	$44,242	$57,703	$57,187	$52,424	$57,378	$58,313	$56,284	$59,843	$63,222	$65,919	$79,983	$58,881
Total	1,159	824	843	668	473	2,433	1,923	1,278	1,175	748	307	102	11,933
	$41,759	$44,967	$44,441	$46,725	$48,492	$50,554	$52,890	$51,440	$55,261	$57,928	$57,743	$67,392	$50,312

Average:	Age:	47.13	Number of participants:	Fully vested:	7,966	Males:	6,467
	Service:	11.06		Not Vested:	3,967	Females:	5,466

Note: An additional 170 Group D members are not shown in this table because we did not receive sufficient data to categorize the members.

HISTORICAL ACTIVE PARTICIPANT DATA

Valuation Date	Active Count	Average Age	Average Service	Annualized Salaries	Average Salary	Percent Changes
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1989	11,356	N/A	N/A	$235,400	$20,729	3.2%
1990	12,037	40.0	N/A	$258,556	$21,480	3.6%
1991	12,488	40.3	N/A	$284,914	$22,815	6.2%
1992	12,913	40.5	N/A	$314,686	$24,370	6.8%
1993	13,112	40.9	N/A	$340,249	$25,949	6.5%
1994	14,027	40.9	N/A	$366,561	$26,133	0.7%
1995	14,364	41.3	N/A	$378,511	$26,351	0.8%
1996	14,067	41.8	N/A	$367,610	$26,133	(0.8%)
1998[1]	13,764	42.8	9.8	$394,919	$28,692	9.8%
1999[1]	13,286	42.9	9.8	$396,617	$29,852	4.0%
2000[1]	13,126	43.7	10.3	$421,591	$32,119	7.6%
2001[1]	12,928	43.9	10.3	$413,021	$31,948	(0.5%)
2002	12,527	44.7	11	$399,794	$31,915	(0.1%)
2003	12,120	45.2	11.2	$390,314	$32,204	0.9%
2004	11,856	45.1	10.3	$366,190	$30,886	(4.1%)
2005[2]	11,974	44.8	9.6	$404,565	$33,787	9.4%
2006	12,145	44.8	9.3	$422,496	$34,788	3.0%
2007	12,376	45.2	9.3	$448,925	$36,274	4.3%
2008	12,653	45.2	9.3	$483,815	$38,237	5.4%
2009	13,333	45.1	9.2	$539,023	$40,428	5.7%
2010	12,913	45.8	10.0	$550,709	$42,648	5.5%
2011	12,345	46.5	10.6	$544,665	$44,120	3.5%
2012	11,670	46.8	11.1	$534,394	$45,792	3.8%
2013	11,781	46.9	11.1	$549,971	$46,683	1.9%
2014	11,949	46.9	11.1	$568,992	$47,618	2.0%
2015	11,827	47.1	11.2	$584,025	$49,381	3.7%
2016	12,103	47.1	11.1	$608,210	$50,253	1.8%

Note: Dollar amounts in $000

1. Excludes DROP participants

2. Beginning with the 2005 valuation, a change in methodology now annualizes payroll for new entrants. If the methodology had not been changed, the covered payroll for 2005 would have been $376,208,345 and the average payroll would have been $31,419.

RETIREES, BENEFICIARIES, AND DISABLED PARTICIPANTS ADDED TO AND REMOVED FROM ROLLS

	Added to Rolls		Removed from Rolls		Rolls-End of Year			
Valuation July 1,	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	% Increase in Annual Allowances	Average Annual Allowances
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1996	416	$ 3,119	239	$ 1,438	4,618	$ 38,815	6.4%	$ 8,405
1998	693	5,840	441	3,212	4,870	43,394	11.8%	8,910
1999	432	2,131	303	1,515	4,999	46,732	7.7%	9,348
2000	360	3,412	255	1,380	5,104	49,970	6.9%	9,790
2001	652	8,937	299	1,030	5,457	57,877	15.8%	10,606
2002	777	15,061	306	2,476	5,928	72,256	24.8%	12,189
2003	598	11,497	311	1,873	6,215	84,519	17.0%	13,599
2004	942	25,189	279	2,624	6,878	107,084	26.7%	15,569
2005	861	18,054	216	1,926	7,523	123,212	15.1%	16,378
2006	654	14,722	397	2,246	7,780	135,688	10.1%	17,441
2007	440	10,280	249	3,007	7,971	142,961	5.4%	17,935
2008	464	11,052	280	3,420	8,155	150,592	5.3%	18,466
2009	474	11,430	289	3,667	8,340	158,356	5.2%	18,988
2010	476	12,040	290	3,938	8,526	166,458	5.1%	19,524
2011	502	13,202	311	4,451	8,717	175,210	5.3%	20,100
2012	654	16,299	293	3,993	9,078	187,515	7.0%	20,656
2013	695	15,566	346	5,051	9,427	198,030	5.6%	21,007
2014	619	15,370	361	5,717	9,685	207,683	4.9%	21,444
2015	771	17,334	433	5,534	10,023	219,484	5.7%	21,898
2016	928	29,096	324	5,842	10,289	230,937	11.2%	22,445

Note: Dollar amounts in $000

MEMBERSHIP DATA

	July 1, 2016 (1)	July 1, 2015 (2)	July 1, 2014 (3)
1. Active members			
a. Number	12,103 *	11,827	11,949
b. Number vested	7,966	8,352	8,818
c. Annualized salaries	$ 608,210,000	$ 584,025,000	$ 568,992,000
d. Average salary	50,253	49,381	47,618
e. Average age	47.1	47.1	46.9
f. Average service	11.1	11.2	11.1
2. Inactive participants			
a. Vested	3,432	3,202	3,313
b. Total annual benefits (deferred)	$ 24,273,639	$ 22,450,520	$ 23,048,675
c. Average annual benefit	7,073	7,011	6,957
d. NonVested	2,174	2,293	2,219
3. Service retirees			
a. Number	8,084	7,819	7,498
b. Total annual benefits	$ 198,363,966	$ 188,491,161	$ 178,109,613
c. Average annual benefit	24,538	24,107	23,754
d. Average age	68.5	68.5	68.5
4. Disabled retirees			
a. Number	336	350	371
b. Total annual benefits	$ 3,560,156	$ 3,643,233	$ 3,749,983
c. Average annual benefit	10,596	10,409	10,108
d. Average age	64.8	64.8	64.8
5. Beneficiaries and spouses			
a. Number	1,869	1,854	1,816
b. Total annual benefits	$ 29,012,963	$ 27,349,358	$ 25,823,664
c. Average annual benefit	15,523	14,752	14,220
d. Average age	67.8	68.3	69.7

* Counts include an additional 170 Group D members.

ESTIMATION OF INVESTMENT RETURN YIELD (NET OF EXPENSES)

Item		July 1, 2016	July 1, 2015
(1)		(2)	(3)
A. Market value yield			
1.	Beginning of year net market assets	$ 2,456,544	$ 2,464,439
2.	Net Investment income (net of all expenses)[1]	29,290	67,404
3.	End of year market assets	2,400,023	2,456,544
4.	Estimated market value yield	1.21%	2.78%
B. Actuarial value yield			
1.	Beginning of year actuarial assets	$ 2,582,510	$ 2,490,521
2.	Net Investment income (net of all expenses)[1]	(96,676)	167,288
3.	End of year actuarial assets	2,400,023[2]	2,582,510
4.	Estimated actuarial value yield	-3.81%	6.82%

[1] Net investment income for 2015 is net of investment and administrative expenses
[2] Reflects actuarial value of assets being marked to market but is prior to recognition of POB receivable

Note: Dollar amounts in $000

HISTORY OF INVESTMENT RETURNS

For Fiscal Year Ending	Market Value	Actuarial Value
(1)	(2)	(3)
June 30, 2003	2.34%	1.69%
June 30, 2004	18.10%	4.16%
June 30, 2005	12.85%	4.12%
June 30, 2006	16.41%	8.95%
June 30, 2007	17.85%	21.51%
June 30, 2008	(0.25%)	8.97%
June 30, 2009	(20.14%)	2.60%
June 30, 2010	11.21%	3.54%
June 30, 2011	21.56%	6.27%
June 30, 2012	(0.89%)	4.46%
June 30, 2013	13.02%	5.39%
June 30, 2014	16.04%	7.95%
June 30, 2015	2.78%	6.82%
June 30, 2016	1.21%	(3.81%)
Average Compound Return - last 5 years	6.22%	4.08%
Average Compound Return - last 10 years	5.55%	6.20%

Note: Investment returns are estimations made by the actuary. Prior to June 30, 2016 these are dollar-weighted returns net of administrative and investment expenses. Beginning with June 30, 2016 the returns are net of investment expenses only.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

The following methods and assumptions were used in preparing the July 1, 2016, actuarial valuation. These assumptions were adopted by the Board effective for the July 1, 2016 valuation.

1. Valuation Date

The valuation date is July 1st of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method (Prescribed Method under Actuarial Standards of Practice)

The actuarial valuation uses the Entry Age Normal actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the unfunded actuarial liability.

a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (7.0 percent), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.

b. The employer contributions required to support the benefits of the Plan are determined using a level funding approach, and consist of a normal cost contribution and an accrued liability contribution.

c. The normal contribution is determined using the "entry age normal" method. Under this cost method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his behalf based on the benefits provisions for new employees hired on or after January 1, 2008.

d. The actuarial accrued liability (AAL) for each member is the difference between their present value of future benefits (PVFB), based on the tier of benefits that apply to the member, and their present value of future normal costs determined using the normal cost rate described in item c above. For inactive and retired members their AAL is equal to their PVFB.

e. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

3. Actuarial Value of Assets

The actuarial value of assets is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual income. The actual calculation is based on the difference between actual market value and the expected actuarial value of assets each year, and recognizes the cumulative excess return (or shortfall) at a minimum rate of 20% per year. Each year a base is set up to reflect this difference. If the current year's base is of opposite sign to the deferred bases then it is offset dollar for dollar against the deferred bases. Any remaining bases are then recognized over the remaining period for the base (5 less the number of years between the base year and the valuation year). This is intended to ensure the smoothed value of assets will converge towards the market value in a reasonable amount of time.

Expected earnings are determined using the assumed investment return rate and the beginning of year actuarial value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of investment expenses.

The actuarial value of assets was marked to market value as of July 1, 2016 by recognizing all deferred investment shortfalls on that date. The method described above will begin again with the 2017 valuation. In addition, the actuarial value of assets includes an expected $250 million in Pension Obligation Bonds (POBs), discounted from December 31, 2017 to the valuation date at 7%.

4. Economic Assumptions

a. Investment return: 7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of all investment expenses.

b. Salary increase rate: A 2.25% inflation component, plus a 0.75% general increase, plus a service-related component as follows:

Years of Service	Service-related Component	Total Annual Rate of Increase Including 2.25% Inflation Component and 0.75% General Increase Rate
(1)	(2)	(3)
1	2.25%	5.25%
2	2.25	5.25
3	2.75	5.75
4	2.25	5.25
5	1.75	4.75
6	1.50	4.50
7	1.25	4.25
8	1.00	4.00
9	0.75	3.75
10-24	0.50	3.50
25+	0.00	3.00

c. Payroll growth rate: In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.75% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

The investment return assumption is established in statute at 7.0% and therefore is considered prescribed assumption under the Actuarial Standards of Practice.

5. Demographic Assumptions

a. Retirement Rates

RETIREMENT RATES

Expected Retirements per 100 Lives

	Group A & B Members		Group D Members	
Age	Males	Females	Males	Females
(1)	(2)	(3)	(4)	(5)
45-49	15	12	0	0
50-54	10	11	3	3
55	10	11	4	4
56	10	11	5	5
57	10	11	6	6
58	10	11	7	7
59	10	11	8	8
60	12	11	10	10
61	14	11	13	13
62	16	20	35	35
63	18	18	25	18
64	20	12	18	20
65	20	22	20	20
66-69	20	20	20	19
70-74	20	25	20	19
75+	100	100	100	100

b. DROP Participation

65% of eligible members are assumed to enter DROP.

c. DROP Entry Date

Those active members (not already in DROP) are assumed to enter DROP when first eligible. For members who have already entered DROP, the actual DROP entry date supplied in the data is used.

d. DROP Interest Credit

Interests are credited as 50% of the average five-year investment return, with a minimum of 2.5% and a maximum of 7.5%. Assumed to be 4.00% per year.

e. Mortality rates (active members)

Based on the Retired Pensioners 2000 Mortality Table (combined). Rates are scaled by 90% for male and 80% for female. 90% of the rates are assumed to be for non-service related deaths and 10% for service related deaths.

Sample rates are shown below:

MORTALITY RATES (ACTIVE MEMBERS)

Age	Non-service related Male	Non-service related Female	Service related Male	Service related Female
20	0.000279	0.000138	0.000031	0.000015
25	0.000305	0.000149	0.000034	0.000017
30	0.000360	0.000190	0.000040	0.000021
35	0.000626	0.000342	0.000070	0.000038
40	0.000874	0.000508	0.000097	0.000056
45	0.001221	0.000809	0.000136	0.000090
50	0.001732	0.001207	0.000192	0.000134
55	0.002935	0.001956	0.000326	0.000217
60	0.005465	0.003640	0.000607	0.000404
65	0.010317	0.006988	0.001146	0.000776
70	0.017987	0.012054	0.001999	0.001339
75	0.030646	0.020236	0.003405	0.002248

Mortality rates (retired members and beneficiaries):

Healthy Retirees and beneficiaries: Gender-distinct RP2000 Combined Healthy Mortality Tables with Blue Collar Adjustment. Male rates are multiplied by 125% and female rates are multiplied by 112%. The rates are projected on a fully generational basis by scale BB to account for future mortality improvements.

Disabled Retirees: Gender-distinct RP2000 Combined Healthy Mortality Tables with Blue Collar Adjustment. Male rates are multiplied by 125% and female rates are multiplied by 112%. The rates are projected on a fully generational basis by scale BB to account for future mortality improvements. Rates are set-forward five years. A minimum rate of 0.04 is applied to male and 0.03 to female.

Sample rates are shown below:

MORTALITY RATES (RETIRED MEMBERS AND BENEFICIARIES)

Attained Age in 2014	Healthy Male	Healthy Female	Disabled Male	Disabled Female
45	0.002149	0.001489	0.040000	0.030000
50	0.002891	0.002108	0.040000	0.030000
55	0.005029	0.002918	0.040000	0.030000
60	0.009369	0.004815	0.040000	0.030000
65	0.016403	0.009835	0.040000	0.030000
70	0.027069	0.017625	0.043632	0.030000
75	0.043632	0.029215	0.071367	0.046301
80	0.071367	0.046301	0.116414	0.078599
85	0.116414	0.078599	0.194603	0.131126
90	0.194603	0.131126	0.298126	0.198245
95	0.298126	0.198245	0.412954	0.255008
100	0.412954	0.255008	0.497358	0.328290

f. Termination Rates and Disability Rates

Termination rates (for causes other than death, disability or retirement):

Termination rates are a function of the member’s age and service. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates at selected ages are shown below.

Probability of Decrement Due to Withdrawal - Male Members
Years of Service

Age	0	1	2	3	4	5	6	7	8	9	10+
20	0.3244	0.2682	0.2300	0.2060	0.1926	0.1824	0.1617	0.1507	0.1400	0.1278	0.0541
30	0.2585	0.2146	0.1808	0.1563	0.1396	0.1275	0.1143	0.1057	0.0985	0.0919	0.0449
40	0.2003	0.1645	0.1351	0.1124	0.0954	0.0832	0.0750	0.0683	0.0634	0.0603	0.0357
50	0.1559	0.1258	0.1013	0.0824	0.0681	0.0577	0.0510	0.0454	0.0411	0.0383	0.0265
60	0.1341	0.1083	0.0887	0.0740	0.0634	0.0557	0.0469	0.0407	0.0344	0.0277	0.0173

Probability of Decrement Due to Withdrawal - Female Members
Years of Service

Age	0	1	2	3	4	5	6	7	8	9	10+
20	0.2811	0.2574	0.2344	0.2123	0.1912	0.1711	0.1506	0.1282	0.1040	0.0784	0.1385
30	0.2155	0.1943	0.1736	0.1539	0.1356	0.1188	0.1032	0.0879	0.0730	0.0585	0.0795
40	0.1688	0.1460	0.1250	0.1063	0.0903	0.0770	0.0664	0.0581	0.0517	0.0472	0.0367
50	0.1510	0.1223	0.0984	0.0791	0.0645	0.0544	0.0481	0.0452	0.0453	0.0481	0.0339
60	0.1794	0.1373	0.1049	0.0812	0.0653	0.0570	0.0540	0.0552	0.0601	0.0682	0.0339

Rates of Decrement Due to Disability

Age	Males	Females	Service-related Males	Service-related Females
20	0.000004	0.000006	0.000000	0.000001
25	0.000009	0.000013	0.000001	0.000002
30	0.000073	0.000065	0.000005	0.000008
35	0.000318	0.000102	0.000022	0.000013
40	0.000650	0.000234	0.000045	0.000029
45	0.001259	0.000528	0.000087	0.000066
50	0.002195	0.001256	0.000151	0.000157
55	0.003171	0.002021	0.000219	0.000253
60	0.004188	0.002436	0.000289	0.000305

Rates of disability are reduced to zero once a member becomes eligible for retirement.

6. Other Assumptions

a. Projected payroll for contribution purposes: The aggregate projected payroll for the fiscal year following the valuation date is calculated by increasing the actual payroll paid during the previous fiscal year to all members (actives, terminated and retired) by the payroll growth rate and multiplying by the ratio of current active members to the average number of active members during the previous fiscal year.

b. Percent married: 70% of employees are assumed to be married. (No beneficiaries other than the spouse assumed). The 70% assumption is intended to provide sufficient margin to cover the costs of any surviving children benefits.

c. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

d. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.

e. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

f. There will be no recoveries once disabled.

g. No surviving spouse will remarry.

h. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

i. Administrative expenses: The administrative expenses of the plan are added into the employer contribution rate as a percentage of payroll.

j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

k. Decrement timing: Decrements of all types are assumed to occur mid-year.

l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

m. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

n. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

o. Benefit Service: All members are assumed to accrue 1 year of service each year. Fractional service is used to determine the amount of benefit payable.

p. Retiree DROP Balances Payout Duration: It is assumed that retirees will receive their DROP balances in equal installments over the eight years following retirement.

q. COLA is assumed to be 1.00% per year for almost all members effective 7/1/2017. Group D members who terminated prior to the effective date of the 2017 legislation are not eligible for a COLA.

7. Participant Data

Participant data was supplied on electronic files. There were separate files for (i) active members, (ii) inactive members, and (iii) members and beneficiaries receiving benefits.

The data for active members included birth date, sex, most recent hire date, salary paid during last fiscal year, hours worked by the employee, and employee contribution amounts. For retired members and beneficiaries, the data included date of birth, sex, amount of monthly benefit, and date of retirement. Also included was the member’s Group and for members participating in DROP, their account balances and monthly DROP income.

All healthy and disabled retirees are assumed to have 100% joint and survivor, prorated by the 70% marriage assumption and reflecting the 3 year spousal age differential. All non-children beneficiaries are assumed to have life only benefits and all children beneficiaries’ annuities are assumed to stop at age 21.

Salary for the prior fiscal year as well as an annualized rate of pay is provided in the data. The annualized rate increased by one-year’s salary increase is the rate of pay the member is assumed to earn in the upcoming fiscal year.

Except as noted below, assumptions were made to correct for missing, or inconsistent data. These had no material impact on the results presented.

We received salary information on City of Houston employees employed by HFC, HFF, and CCSI. Where we had additional information because of prior HMEPS service, we added the salary information and treated the records as active employees. For the 170 records where we had no additional information, we assumed these records were Group D members and we grossed up the Group D liabilities and payroll to reflect these additions.

8. Group Transfers

We assume no current Group B members will transfer to Group A.

9. Change in Assumptions Since Prior Valuation

- The actuarial assumptions were modified since the prior valuation. In particular the investment return assumption was decreased from 8.00% to 7.00%.
- The inflation assumption was lowered to 2.25%.
- The ultimate salary scale assumption was changed to 3.00%.
- The payroll growth rate assumptions were changed to 2.75%.
- The Actuarial Value of Assets was marked to Market Value, plus an expected $250 million in Pension Obligation Bonds (POBs), discounted from December 31, 2017 at 7%.
- COLAs are assumed to be 1.00% per year for all members
- DROP crediting rate is 4.00% per year

SUMMARY OF PLAN PROVISIONS

The provisions summarized in this section apply to persons who are members (active employees). Former members may have been covered under different plan provisions, depending on their dates of separation from service.

1. Covered Members

Any person who is a participant of Group A, under the original act.

Persons who became employees of the City of Houston after September 1, 1981 and prior to September 1, 1999, and elected officials of the City of Houston who assumed office after September 1, 1981 and prior to September 1, 1999, participate in Group B, but may make an irrevocable election to participate in Group A instead.

Persons who become employees of the City and persons who are elected as City officials after September 1, 1999 and prior to January 1, 2008 become members of Group A. Certain persons who were or became a Director of a City Department, Chief Administrative Officer, or Executive Director of HMEPS on or after September 1, 1999 and prior to January 1, 2005 participate in Group C. Effective January 1, 2005, all Group C participation ceased and all Group C participants became Group A participants. Accruals earned by Group C participants prior to January 1, 2005 are retained, but all future accruals are based on the Group A formulas.

All future references to Group C participants in this appendix are intended to reflect this change in the Group C status.

Covered employees newly hired on or after January 1, 2008 will be members of Group D.

A former employee who is rehired on or after January 1, 2008 is a member of the group in which such employee participated at the time of his/her immediately preceding separation from service.

2. Monthly Final Average Salary (FAS)

The sum of the seventy-eight highest biweekly salaries paid to a member during his period of credited service, divided by thirty-six. Salary includes base pay, longevity pay, and any shift differential pay. If there are fewer than seventy-eight biweekly salaries, the FAS is determined by multiplying the average of all biweekly salaries paid to the member during the period of credited service by 26 and dividing the product by 12.

3. Credited Service

All services and work performed by an employee, including prior service. For members of Group A and former Group C, all services and work performed after September 1, 1943 must have been accompanied by corresponding contributions to HMEPS by the employee or legally authorized repayments must have been made.

Credited service for former participants in Group C means the number of years of eligible service after the executive official's effective date of participation in Group C. A former Group C member receives two times the number of actual years of credited service in Group C solely for the purpose of fulfilling the eligibility requirements in Group C.

If former Group D and pre-1997 Group B members who forfeited their previous credited service are rehired they will regain a year of forfeited credited service for each year of service earned upon reemployment.

4. Normal Retirement

a. Eligibility — For participants in Group A or Group B, or, a former Group C member who became a Group A member as of January 1, 2005, the earliest of:

(i) age 62 and 5 years of Credited Service

(ii) 5 years of Credited Service, and age plus years of Credited Service equal 70 or more, provided that, prior to January 1, 2005, the participant had at least five years of credited service and the combination of age and years of credited service was equal to or greater than 68.

(iii) 5 years of Credited Service, and age plus years of Credited Service equal 75 or more with minimum age 50.

For participants in Group D

Age 62 and 5 years of Credited Service

b. Benefit — Prior to January 1, 2005:

Group A: 3.25% of FAS for each of the first 10 years of Credited Service plus 3.50% of FAS for Credited Service greater than 10 years but less than 20 years plus 4.25% of FAS for each year of Credited Service greater than 20 years (excludes period of DROP participation). Maximum benefit is 90% of FAS for all future retirees.

Group B: 1.75% of FAS for each of the first 10 years of Credited Service plus 2.00% of FAS for Credited Service greater than 10 years but less than 20 years, plus 2.75% of FAS for each year of Credited Service greater than 20 years (excludes period of DROP participation). Maximum benefit is 90% of FAS for all future retirees.

Group C: Double the rate for Group A

<u>All accruals after January 1, 2005:</u>

All accruals under the prior multipliers were frozen as of January 1, 2005 and the following benefit multipliers apply to service on or after that date:

Group A: 2.50% of FAS for each of the first 20 years of Credited Service plus 3.25% of FAS for each year of Credited Service greater than 20 years (excludes period of DROP participation). Maximum benefit is 90% of FAS for all future retirees.

Group B: 1.75% of FAS for each of the first 10 years of Credited Service plus 2.00% of FAS for Credited Service greater than 10 years but less than 20 years, plus 2.50% of FAS for each year of Credited Service greater than 20 years (excludes period of DROP participation). Maximum benefit is 90% of FAS for all future retirees.

Group D: 1.80% of FAS for each of the first 25 years of Credited Service, plus 1.00% of FAS for each year of Credited Service greater than 25 years. Maximum benefit is 90% of FAS for all future retirees.

5. Early Retirement (Group D only)

a. Eligibility (i) at least ten years of Credited Service; or

(ii) at least five years of Credited Service and a combination of age and service equals or is greater than 75.

b. Benefit Accrued normal retirement benefit reduced by 0.25% for each month you are less than age 62.

6. Vested Pension

a. Eligibility 5 years of Credited Service.

b. Benefit Group A and Group C: Either the accrued normal retirement benefit with payments beginning at the normal retirement eligibility date or a refund of employee contributions, if any, without interest.

Group B and Group D: Accrued normal retirement benefit payable at the normal retirement eligibility date.

If the actuarial present value of a pension is less than $20,000, a terminated participant who is not eligible to begin receiving a pension may request an early lump sum distribution of the pension. Such early lump sum distribution is irrevocable. Credited Service associated therewith can be reinstated after reemployment and pursuant to the rules of the plan.

7. Withdrawal Benefit

If a nonvested member withdraws from service with less than 5 years, a refund of the member's contributions is made without interest, upon request.

8. Service-Connected Disability Retirement

a. Eligibility Any age

b. Benefit Current:

Group A: Accrued normal retirement benefit, but not less than 20% of final monthly salary at time of disability plus 1% of final monthly salary per year of Credited Service, to a maximum of 40% of final monthly salary.

Group B and Group D: Accrued normal retirement benefit, but not less than 20% of final monthly salary at time of disability.

After July 1, 2017:

Accrued normal retirement benefit, but not less than 20% of final monthly salary at time of disability plus 1% of final monthly salary per year of Credited Service, to a maximum of 40% of final monthly salary.

9. Non-service-Connected Disability Retirement

a. Eligibility 5 years of Credited Service.

b. Benefit Accrued normal retirement benefit payable immediately.

10. Pre-retirement Survivor Benefits

A. Service-connected

a. Eligibility Any age or Credited Service

b. Benefit Current:

If there is a surviving spouse, 100% of FAS payable to the spouse. 10% of FAS is payable to each qualifying dependent to a maximum of 20% for all dependents. Surviving spouse's benefit will be reduced by the amount of dependent benefits. If no surviving spouse, dependent benefits are 50% of the amount a surviving spouse would have received for each dependent to a maximum of 100% for all dependents in the aggregate.

Effective July 1, 2017:

If there is a surviving spouse, the spousal survivor benefit is 80% of the participant's final average salary, payable immediately.

B. Non service-connected

a. Eligibility 5 years of Credited Service

b. Benefit Current:

Benefits for survivorship of vested Group D members after January 1, 2008:

Death of active employee: If there is a surviving spouse, 100% of accrued pension is payable to the spouse. 10% of accrued pension is payable to each qualifying dependent to a maximum of 20% for all dependents. Surviving spouse's benefit will be reduced by the amount of dependent benefits. If no surviving spouse, dependent benefits are 50% of the amount a surviving spouse would have received for each dependent to a maximum of 100% for all dependents in the aggregate.

Death of terminated vested employee (not yet retired): If participant selected Optional Annuity then benefit will be paid based on selected option. If the participant did not select an optional annuity then if there is a surviving spouse the participant will be deemed to have selected the 50% J&S Optional Annuity. If the participant did not select an Optional Annuity and there is no surviving spouse then no benefit is payable.

For all other Groups on or after August 1, 2001:

If there is a surviving spouse, 100% of accrued normal retirement benefit payable to the spouse and 10% of accrued normal retirement benefit to each qualifying dependent to a maximum of 20% for all dependents in the aggregate. The surviving spouse's benefit will be reduced by dependent benefits, if any. If there is no surviving spouse, each dependent will receive 50% of the benefit a surviving spouse would have received subject to a maximum of 100% of a surviving spouse's benefit for all dependents in the aggregate.

Effective July 1, 2017:

If an active Group A, Group B or Group D member with at least 5 years of credited service dies while still in service with the City (off-duty death), the spousal survivor benefit will be 80% of the normal accrued pension, payable immediately, provided that the spouse was married to the participant for at least one continuous year as of the date of death. If such spouse was married less than one continuous year as of the date of death, the survivor benefit is 50% of the normal accrued pension.

If a Group A or Group B deferred participant (not yet receiving a pension benefit) dies, the spousal survivor benefit is 50% of the normal accrued pension, payable at the participant's eligibility date. However, the surviving spouse can elect an earlier actuarially equivalent benefit.

11. Postretirement Survivor Benefits

<u>All Groups except Option-Eligible Participants Prior to June 30, 2017:</u>

If there is a surviving spouse, 100% of the retirement benefit the deceased retiree was receiving at the time of death payable to the spouse and 10% of that retirement benefit payable to each qualifying dependent to a maximum of 20% for all dependents. The surviving spouse's benefit will be reduced by dependent benefits, if any. If there is no surviving spouse, each dependent will receive 50% of the benefit a surviving spouse would have received subject to 100% of a surviving spouse's benefit for all dependents in the aggregate.

<u>All Groups except Option-Eligible Participants On or After July 1, 2017:</u>

If there is a surviving spouse, 80% of the retirement benefit the deceased retiree was receiving at the time of death payable immediately, provided that the spouse was married to the retiree at the time of death and for at least one continuous year as of the date of separation from service (the marriage requirement applies for separations from service on or after July 1, 2017). If such spouse was married less than one continuous year as of the date of separation from service (the marriage requirement applies for separations from service on or after July 1, 2017), the spousal survivor benefit is 50% of the retirement benefit being received by the retiree at the time of death.

<u>Option-Eligible Participants:</u>

Life only to the retiree. Option-Eligible Participants may elect other options based on actuarial factors.

All Group D members, Group A & B members who terminate after June 30, 2011 eligible for a normal retirement benefits and who are not married at their termination of service, and Group B members who terminated prior to September 1, 1997 and who are eligible for a normal retirement benefit are Option-Eligible Participants.

12. Benefit Adjustments

Prior to June 30, 2017:

Each year, effective February 1, monthly benefits will be increased 3.0%, not compounded, for all retirees and survivors. This will affect all members currently in payment status and members who enter payment status in the future. For members hired on or after January 1, 2005 future increases will be 2.0%, not compounded. However, pre-2005 retirees who are rehired will receive a 3% COLA on their subsequent benefit instead. No COLA for Group D members.

On or after July 1, 2017:

COLAs are calculated as half of the average five-year investment return less five percentage points, with a minimum of 0% and a maximum of 2%, not compounded. Group D retirees, who terminated after the effective date of the 2017 Legislation, will receive COLAs in the future. For employees who are participating in DROP, COLAs will be delayed until the earlier of their age at retirement or age 62 as of January 1 of the year in which the increase is made.

13. Contribution Rates. (all rates occur as of the first full pay period on or after the applicable effective date)

a. Members Effective July 1, 2017, 7% of salary for Group A members, 2% of salary for Group B members and 2% of salary for Group D members. For Group D, beginning January 1, 2018, in addition to the 2%, employees contribute 1% to a notional account that will be credited with the DROP Credit interest. Effective July 1, 2018, the total contribution increases to 8% of salary for Group A members and 4% of salary for Group B members.

b. City Beginning in 1993, the rate required to fund the Retirement Fund on an actuarial reserve basis. However, effective September 1, 1999, the minimum contribution rate is equal to the greater of 10% of covered payroll or twice the contribution rate a Group A member is required to make by statute. Under the ARM&CA between the Board and the City of Houston, the City will contribute the greater of $108.5 million or 21.36% of payroll in fiscal year 2013. Contributions in future fiscal years increase by the greater of $10 million or 2% of payroll over the prior year's rate until such time that the City's contribution rate equals the actuarially determined contribution rate.

Effective July 1, 2017, the City's contribution obligation is set by state statute as described in the RSVS Section.

14. Deferred Retirement Option

a. Eligibility

Participants (other than Group D) who are eligible to retire but who have not retired and who remain in service with the City may participate in the DROP.

b. Monthly DROP Credit

An amount equal to the accrued normal retirement benefit as of the effective date of DROP participation. The Monthly DROP Credit is credited to a notional account (DROP Account) on the last calendar day each month.

c. DROP Credit Interest

Interest is credited to the DROP Account at the beginning of each day based on the DROP Account balance at the end of the previous day and posted monthly on the last calendar day of each month. Effective July 1, 2017, the annual interest rate effective beginning January 1 each year is half of the average five-year investment return, not less than 2.50% and not greater than 7.5%. The assumed DROP Credit interest is 4.00%.

d. DROP Credits-COLA

On or after July 1, 2017:

COLAs will not be given if the DROP participant is younger than age 62. When the DROP participant attains at least age 62 as of January 1 of the year of the increase, COLAs are calculated as half of the average five-year investment return less five percentage points, with a minimum of 0% and a maximum of 2%, not compounded.

Between January 1, 2005 and December 31, 2016

The Monthly DROP Credit for participants who entered the DROP effective on or before January 1 of the then current year will be increased effective February 1 each year by 3.0%, not compounded.

The Monthly DROP Credit for Group A and Group B participants who were first hired on or after January 1, 2005 who entered the DROP effective on or before January 1 of the then current year will be increased effective February 1 each year by 2.0%, not compounded.

e. DROP Account Balance

The sum of a participant's Monthly DROP (DROP Benefit) Credits, Monthly DROP Credit Adjustments, applicable interest, and employee contributions as applicable.

15. DROP Benefit Pay-out A terminated DROP participant may elect to:

a. Receive the entire DROP Account Balance in a lump sum.

b. Receive the DROP Account Balance in periodic payments as approved by the Pension Board.

c. Receive a portion of the DROP Account balance in a lump sum and the remainder in periodic payments as approved by the Pension Board.

d. Receive a partial payment of not less than $1,000, no more than once each ninety (90) days.

e. Defer election of a payout option until a future date.

16. Post DROP Retirement

The Final Pension is the accrued normal retirement benefit as of the effective date of DROP participation, increased with COLAs since DROP entry.

Changes in Plan Provisions Since Prior Year

1. Prospective Cost of Living Adjustments (COLAs) are calculated as 50% of the average five-year investment return less five percentage points, with a minimum of 0% and a maximum of 2%. COLAs will be delayed until age 62 for participants while actively employed in the DROP.
2. The DROP Interest Credit formula is 50% of the average five-year investment return, with a minimum of 2.50% and a maximum of 7.50%.
3. The prospective employee contribution rate will be 8% for employees in Group A, 4% for employees in Group B, and 2% for employees in Group D. For Group D, in addition to the 2% employee contribution, employees contribute 1% to a notional account that will be credited with the DROP interest crediting rate.
4. For all new survivors of Group A/B members after 6/30/2017, 80% or 50% of the benefit is payable, depending on date of termination of employment and marital status at termination of employment.

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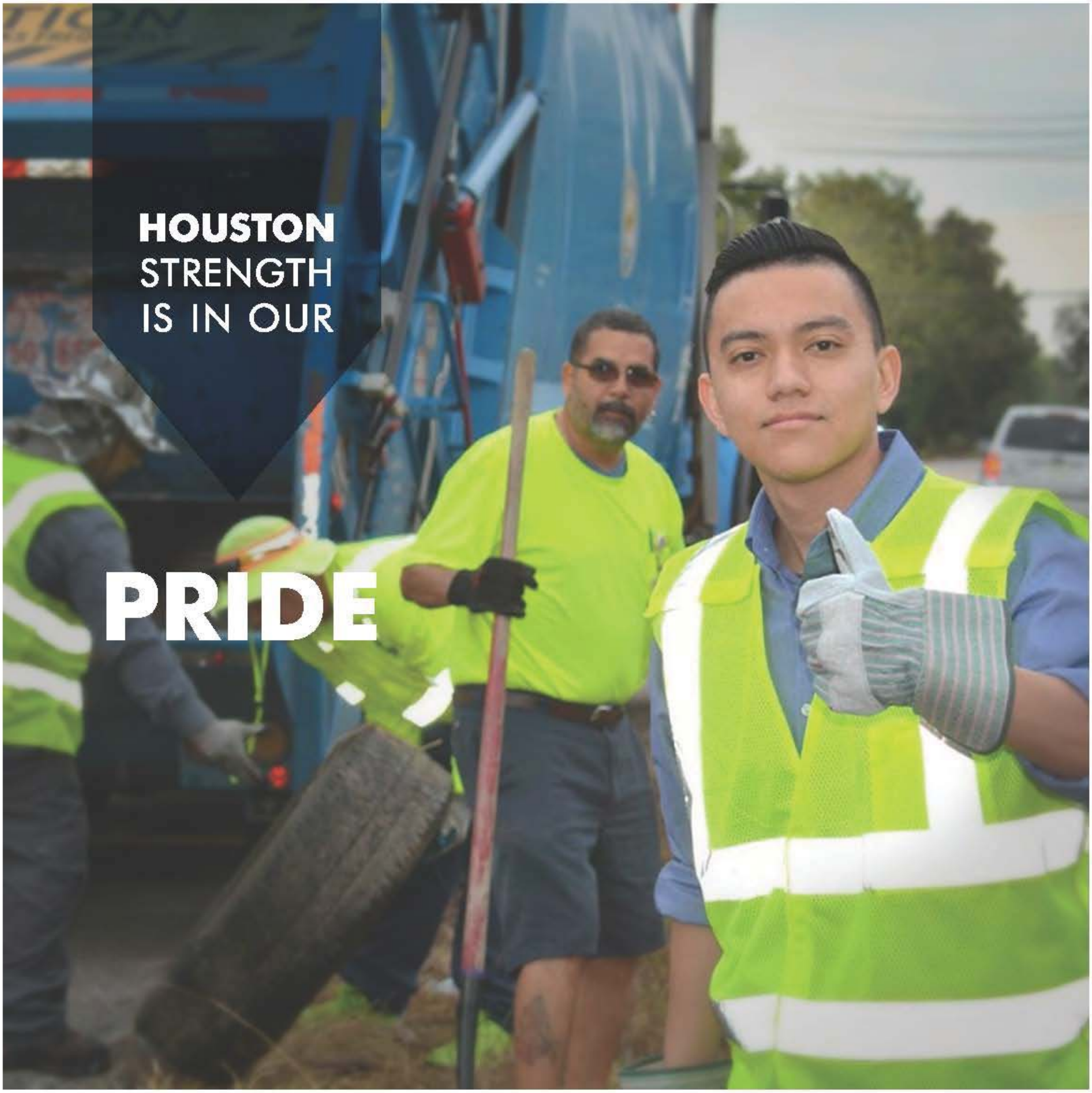

HOUSTON
STRENGTH
IS IN OUR
PRIDE

SECTION FIVE

STATISTICAL INFORMATION

INTRODUCTION

The Statistical section of the Comprehensive Annual Financial Report presents detailed information related to the System's financial statements. The schedules within the Statistical section are classified as Financial Trends and Participant Information. All information was derived from Audited Annual Financials and/or our benefit administration system, and/or the annual actuarial valuations.

FINANCIAL TRENDS

The Changes in Fiduciary Net Position schedule shows the additions and deductions from fiduciary net position and the resulting changes in fiduciary net position for the ten years ending June 30, 2017.

Additions to Fiduciary Net Position include city and member contributions to the System which are external sources of additions to plan net positions. Additions also include earnings from the System's investment activity and are the System's internal sources of, and typically the larger component of, additions to plan net positions.

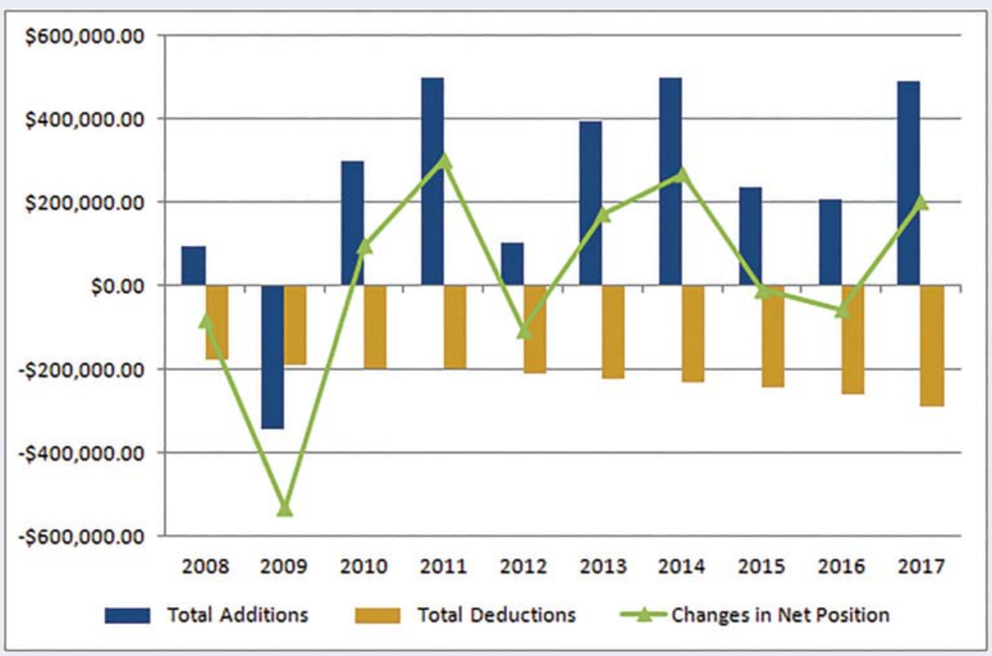
Deductions from Fiducuary Position are primarily comprised of benefit payments and refunds paid to participants.

OPERATING INFORMATION

Participant data for the last ten years ending June 30, 2016 can be found starting on page 118 and include several schedules regarding benefit payments to participants and participant demographics. The date of the participant information is consistent with the latest actuarial valuation date of July 1, 2016.

CHANGES IN FIDUCIARY NET POSITION (IN THOUSANDS)

YEARS ENDED JUNE 30



FINANCIAL TRENDS

SCHEDULE OF CHANGES IN FIDUCIARY NET POSITION ($000)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Additions (Reductions)										
Employer contributions	$ 73,272	$ 76,837	$ 82,052	$ 87,285	$ 97,161	$ 111,859	$ 128,274	$ 145,007	$ 159,958	$ 182,558
Member contributions	21,176	20,449	19,736	19,326	18,473	17,041	16,580	16,198	15,874	15,901
Investment income (loss)	(29,133)	(440,298)	195,433	391,095	(11,963)	263,891	351,792	73,854	27,988	290,911
Other income	29,839	489	557	1,185	654	1,246	730	557	1,303	1,272
Total additions (reductions) to the net position	95,154	(342,523)	297,778	498,891	104,325	394,037	497,376	235,616	205,123	490,642
Deductions										
Benefit payments	169,483	180,361	191,048	189,199	200,014	213,178	221,925	234,955	253,179	280,456
Refund of contributions	1,760	1,795	1,285	1,620	2,206	1,266	1,213	1,549	1,105	718
Professional services fees	638	792	805	1,103	1,048	871	597	822	1,021	805
Cost of administration	5,837	6,420	6,290	6,020	6,264	6,341	5,818	6,185	6,339	6,021
Total deductions to net position	177,718	189,368	199,428	197,942	209,532	221,656	229,553	243,511	261,644	288,000
Change in fiduciary net position	$ (82,564)	$ (531,891)	$ 98,350	$ 300,949	$ (105,207)	$ 172,381	$ 267,823	$ (7,895)	$ (56,521)	$ 202,642

OPERATING INFORMATION

SCHEDULE OF BENEFIT PARTICIPANTS AND ANNUITIES BY TYPE (IN THOUSANDS)

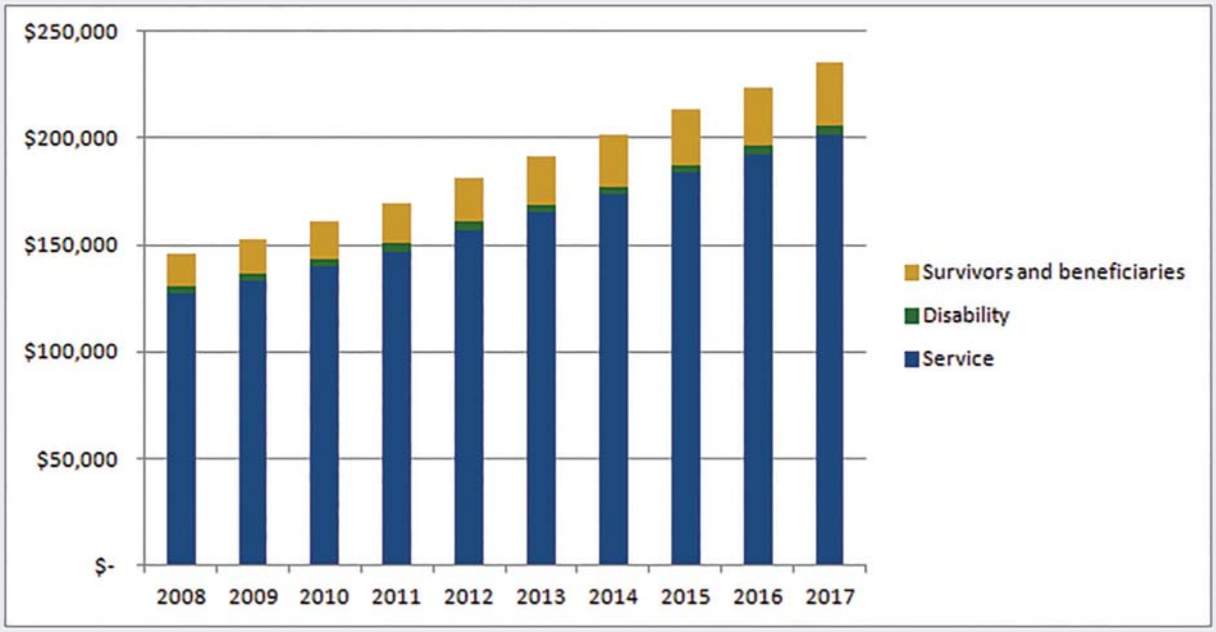
Participants by Benefit Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Service	6,186	6,336	6,482	6,663	7,031	7,258	7,522	7,821	8,084	8,376
Disability	428	415	404	398	391	387	373	350	336	323
Survivor	1,541	1,589	1,640	1,656	1,656	1,782	1,827	1,854	1,893	1,902
Total Annuity Count	8,155	8,340	8,526	8,717	9,078	9,427	9,722	10,025	10,313	10,601
Inactive Eligible Participants	2,931	2,884	2,815	3,178	3,237	3,298	3,305	3,313	3,468	3,468
Total Eligible for Benefits	11,086	11,224	11,341	11,895	12,315	12,725	13,027	13,338	13,781	14,069

Benefit Payments by Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Service	$ 127,083	$ 133,209	$ 139,779	$ 146,863	$ 157,214	$ 164,924	$ 173,749	$ 183,613	$ 192,759	$ 201,890
Disability	3,624	3,652	3,650	3,698	3,769	3,864	3,808	3,722	3,626	3,613
Survivor	15,025	16,160	17,724	19,174	20,533	22,383	24,262	25,777	27,346	30,329
Total Annuity Payments	145,732	153,021	161,153	169,735	181,516	191,171	201,819	213,112	223,731	235,832
Lump Sum Payments	625	1,067	641	449	156	200	177	201	252	351
DROP Payments	23,126	26,273	29,254	19,015	18,342	21,807	19,929	21,641	29,195	44,274
Other Benefit Payments	23,751	27,340	29,895	19,464	18,498	22,007	20,106	21,842	29,447	44,625
Total Benefit Payments	$ 169,483	$ 180,361	$ 191,048	$ 189,199	$ 200,014	$ 213,178	$ 221,925	$ 234,954	$ 253,178	$ 280,457
Refunds of Contributions	$ 1,760	$ 1,795	$ 1,285	$ 1,620	$ 2,206	$ 1,266	$ 1,213	$ 1,549	$ 1,105	$718

Average Benefit Payments by Type	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Service	$ 20,544	$ 21,024	$ 21,564	$ 22,042	$ 22,360	$ 22,723	*$ 23,099*	*$ 23,477*	*23,845*	*24,103*
Disability	8,467	8,800	9,035	9,291	9,639	9,984	*10,209*	*10,634*	*10,792*	*11,186*
Survivor	9,750	10,170	10,807	11,579	12,399	12,561	*13,280*	*13,903*	*14,446*	*15,946*
Combined Average Annuity Payments	$ 17,870	$ 18,348	$ 18,901	$ 19,472	$ 19,995	$ 20,279	*$ 20,759*	*$ 21,258*	*$ 21,694*	*$ 22,246*

BENEFIT PAYMENTS BY TYPE (IN THOUSANDS)

YEARS ENDED JUNE 30

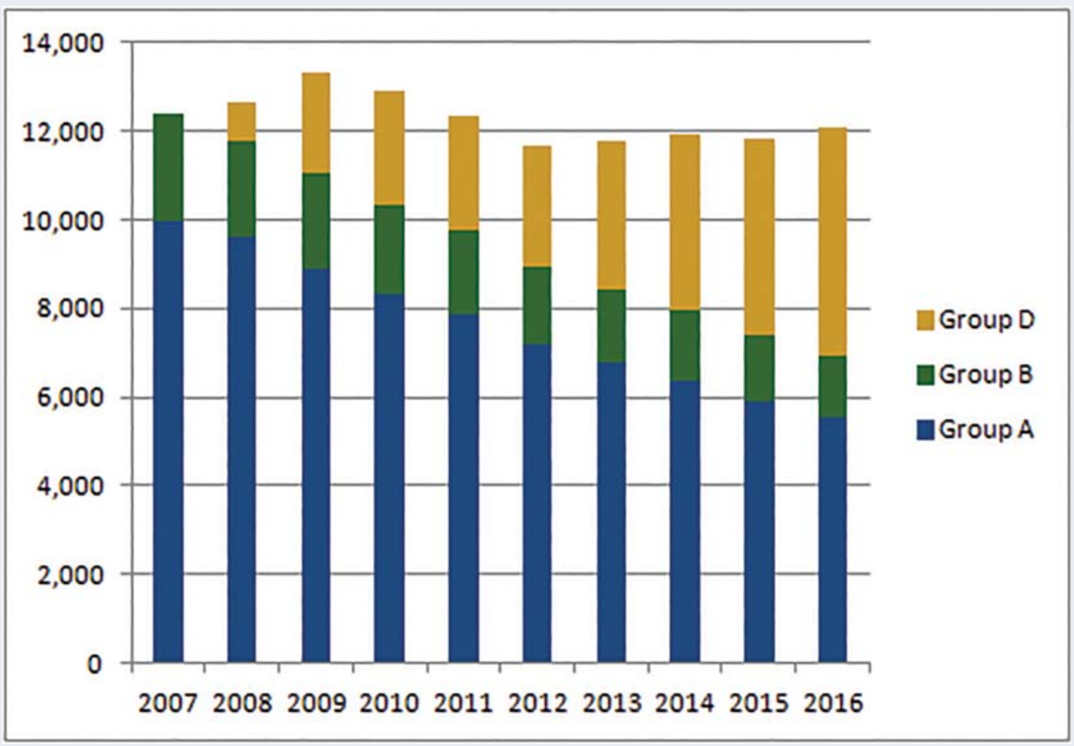


BENEFIT RECIPIENTS BY TYPE AND AGE - YEAR ENDED JUNE 30, 2016

Age on June 30	Service	Disability	Survivor	Total
Under 40	0	1	97	98
40 - 44	0	4	13	17
45 - 49	0	6	20	26
50 - 54	157	27	68	252
55 - 59	811	51	105	967
60 - 64	1,677	64	220	1,961
65 - 69	2,163	68	205	2,436
70 - 74	1,489	51	253	1,793
75 - 79	880	42	248	1,170
80 - 84	532	16	209	757
85 & Over	375	6	291	672
Total	8,084	336	1,729	10,149

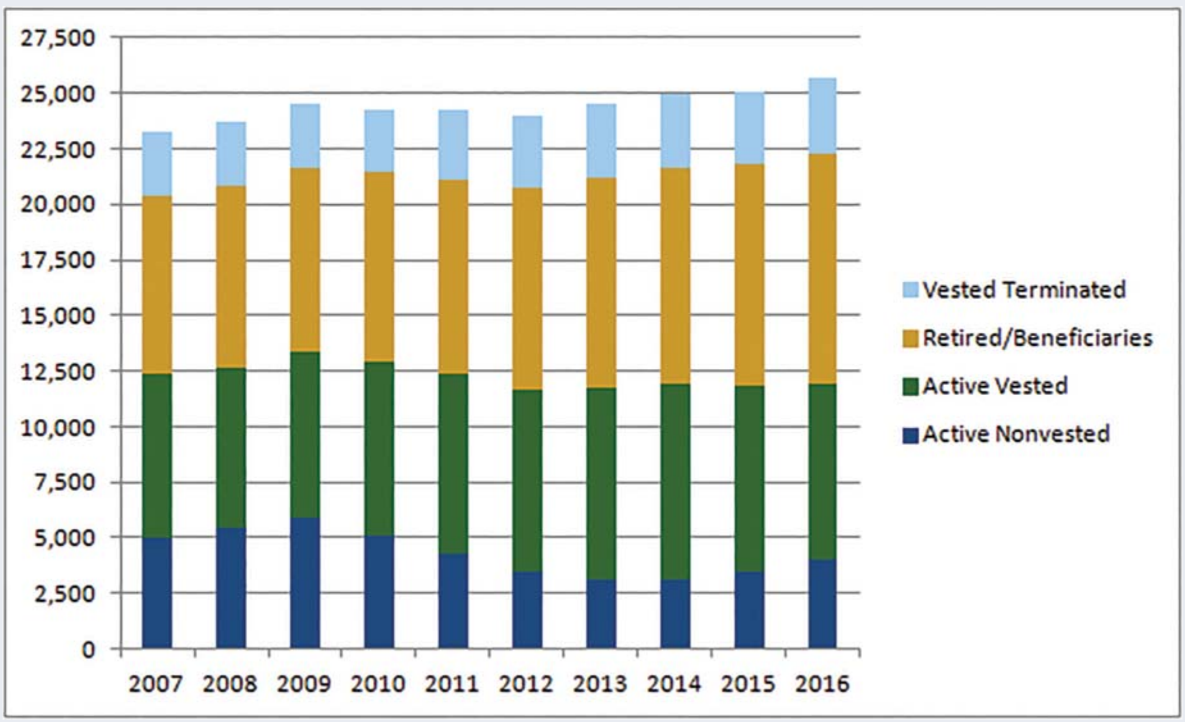
HISTORICAL ACTIVE PARTICIPANT DATA

Valuation Date	Active Vested/Nonvested Group A	Group B	Group D	Number of Participants	Annual Payroll ($000)	Average Salary ($)	% Salary Increase
July 1, 2007	9,947	2,429		12,376	448,925	36,274	4.3
July 1, 2008	9,587	2,195	871	12,653	483,815	38,237	5.4
July 1, 2009	8,906	2,153	2,274	13,333	539,023	40,428	5.7
July 1, 2010	8,323	1,999	2,591	12,913	550,709	42,648	5.5
July 1, 2011	7,857	1,932	2,556	12,345	544,665	44,120	3.5
July 1, 2012	7,167	1,759	2,744	11,670	534,394	45,792	3.8
July 1, 2013	6,777	1,666	3,338	11,781	549,971	46,683	1.9
July 1, 2014	6,366	1,590	3,993	11,949	568,992	47,618	2.0
July 1, 2015	5,911	1,489	4,427	11,827	584,025	49,381	3.7
July 1, 2016	5,537	1,417	5,149	12,103	608,210	50,253	1.8



HISTORICAL TOTAL MEMBERSHIP DATA AND BAR CHART

Fiscal Year	Active Nonvested	Active Vested	Retired/ Beneficiaries	Vested Terminated	Totals
2007	5,002	7,374	7,971	2,922	23,269
2008	5,419	7,234	8,155	2,931	23,739
2009	5,941	7,392	8,340	2,884	24,557
2010	5,101	7,812	8,526	2,815	24,254
2011	4,237	8,108	8,717	3,178	24,240
2012	3,512	8,158	9,078	3,237	23,985
2013	3,154	8,627	9,427	3,298	24,506
2014	3,131	8,818	9,685	3,313	24,947
2015	3,475	8,352	10,023	3,202	25,052
2016	3,967	8,136	10,289	3,432	25,824



AVERAGE BENEFIT PAYMENTS BY YEARS OF CREDITED SERVICE

Members Retiring During Fiscal Years

		Years of Credited Service						
		5-10	11-15	16-20	21-25	26-30	30+	All Members
2007	Average monthly benefit	$ 550	$ 956	$ 1,350	$ 2,042	$ 3,360	$ 3,252	$ 1,354
	Average monthly salary	$ 2,867	$ 2,893	$ 2,958	$ 2,943	$ 3,555	$ 3,476	$ 2,962
	Average DROP balance	$ 37,590	$ 56,962	$ 81,073	$ 135,316	$ 273,677	$ 368,268	$ 107,410
	Number of DROP retirees	26	50	39	51	19	3	188
	Number of retirees	81	102	63	73	24	4	347
2008	Average monthly benefit	$ 532	$ 1,036	$ 1,503	$ 2,342	$ 3,721	$ 1,826	$ 1,519
	Average monthly salary	$ 2,967	$ 3,169	$ 3,138	$ 3,279	$ 3,956	$ 2,527	$ 3,191
	Average DROP balance	$ 37,547	$ 67,218	$ 122,902	$ 155,089	$ 422,202	$ 10,629	$ 137,606
	Number of DROP retirees	12	38	46	56	13	1	166
	Number of retirees	62	92	88	76	20	2	340
2009	Average monthly benefit	$ 582	$ 881	$ 1,526	$ 1,839	$ 2,320	$ 2,400	$ 1,290
	Average monthly salary	$ 3,278	$ 3,032	$ 3,267	$ 3,166	$ 3,383	$ 2,959	$ 3,189
	Average DROP balance	$ 42,190	$ 55,623	$ 173,415	$ 164,178	$ 283,627	$ 19,301	$ 140,745
	Number of DROP retirees	14	31	34	50	13	1	143
	Number of retirees	76	89	76	86	21	3	351
2010	Average monthly benefit	$ 572	$ 1,107	$ 1,579	$ 2,631	$ 3,309	$ -	$ 1,579
	Average monthly salary	$ 3,512	$ 3,478	$ 3,796	$ 4,154	$ 4,342	$ -	$ 3,769
	Average DROP balance	$ 66,061	$ 87,798	$ 174,978	$ 244,143	$ 312,750	$ -	$ 181,870
	Number of DROP retirees	21	30	34	44	21	-	150
	Number of retirees	84	81	76	64	32	-	337
2011	Average monthly benefit	$ 593	$ 925	$ 1,611	$ 2,378	$ 2,310	$ 2,789	$ 1,486
	Average monthly salary	$ 3,474	$ 3,247	$ 3,578	$ 3,794	$ 3,266	$ 3,996	$ 3,505
	Average DROP balance	$ 52,041	$ 97,571	$ 181,686	$ 241,297	$ 249,370	$ 320,514	$ 182,068
	Number of DROP retirees	15	27	42	50	15	2	151
	Number of retirees	82	91	97	83	35	7	395
2012	Average monthly benefit	$ 548	$ 972	$ 1,463	$ 2,097	$ 2,775	$ 2,279	$ $1,476
	Average monthly salary	$ 3,319	$ 3,114	$ 3,483	$ 3,544	$ 3,789	$ 3,123	$ $3,413
	Average DROP balance	$ 28,933	$ 97,805	$ 109,125	$ 172,352	$ 135,562	$ -	$ $121,920
	Number of DROP retirees	19	53	81	72	33	-	258
	Number of retirees	97	124	148	120	58	6	553
2013	Average monthly benefit	$ 577	$ 1,083	$ 1,524	$ 2,406	$ 2,492	$ 2,936	$ 1,450
	Average monthly salary	$ 3,660	$ 3,565	$ 3,503	$ 3,877	$ 3,573	$ 4,000	$ 3,648
	Average DROP balance	$ 33,482	$ 96,989	$ 163,551	$ 196,720	$ 70,570	$ 37,305	$ 137,474
	Number of DROP retirees	17	44	59	52	13	2	187
	Number of retirees	110	114	113	84	31	12	461
2014	Average monthly benefit	$ 582	$ 1,082	$ 1,523	$ 2,283	$ 2,695	$ 3,424	$ 1,395
	Average monthly salary	$ 3,229	$ 3,238	$ 3,505	$ 3,741	$ 3,625	$ 4,402	$ 3,423
	Average DROP balance	$ 92,531	$ 118,155	$ 119,035	$ 276,187	$ 131,517	$ 104,467	$ 153,977
	Number of DROP retirees	23	46	72	51	27	1	220
	Number of retirees	126	116	123	78	35	4	482
2015	Average monthly benefit	$ 625	$ 1,158	$ 1,871	$ 2,412	$ 2,950	$ 2,762	$ 1,636
	Average monthly salary	$ 3,365	$ 3,586	$ 3,756	$ 3,791	$ 3,847	$ 3,330	$ 3,639
	Average DROP balance	$ 55,711	$ 112,360	$ 172,535	$ 186,044	$ 136,625	$ 97,841	$ 153,083
	Number of DROP retirees	19	47	93	78	24	4	265
	Number of retirees	109	107	131	109	29	7	492
2016	Average monthly benefit	$ 674	$ 1,039	$ 1,972	$ 2,802	$ 3,627	$ 2,915	$ 1,807
	Average monthly salary	$ 3,973	$ 3,278	$ 3,983	$ 3,957	$ 4,477	$ 3,466	$ 3,846
	Average DROP balance	$ 52,494	$ 72,536	$ 158,655	$ 318,208	$ 253,977	$ 165,445	$ 194,300
	Number of DROP retirees	22	36	91	78	22	8	257
	Number of retirees	100	96	124	101	29	12	462
10 Years Ended 6/30/2016	Average monthly benefit	$ 583	$ 1,024	$ 1,592	$ 2,323	$ 2,956	$ 2,458	$ 1,499
	Average monthly salary	$ 3,364	$ 3,260	$ 3,497	$ 3,625	$ 3,781	$ 3,128	$ 3,459
	Average DROP balance	$ 49,858	$ 86,302	$ 145,696	$ 208,953	$ 226,988	$ 112,377	$ 151,045
	Avg Number of DROP retirees	$ 19	$ 40	$ 59	$ 58	$ 20	$ 2	$ 199
	Average Number of retirees	$ 93	$ 101	$ 104	$ 87	$ 31	$ 6	$ 422
	Total number of retirees	927	1,012	1,039	874	314	57	4,220

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