



Denver Employees Retirement Plan

COMPREHENSIVE ANNUAL FINANCIAL REPORT



Fiscal Year Ended December 31, 2016

A Component Unit of the City and County of Denver, Colorado

Denver Employees Retirement Plan

(A Component Unit of the City and County of Denver, Colorado)

Comprehensive Annual Financial Report

Fiscal Year Ended December 31, 2016

Guadalupe Gutierrez-Vasquez
Retirement Board Chair

Steven E. Hutt
Executive Director

Prepared by the Plan Staff

Table of Contents

Introductory Section	
Primary Plan Sponsor and Elected Officials.....	5
Letter of Transmittal.....	6
Retirement Board.....	8
Advisory Committee.....	9
Professional Services and Investment Managers.....	10
Certificate of Achievement for Excellence in Financial Reporting.....	11
Organizational Structure.....	12
Financial Section	
Independent Auditors' Report on Financial Statements and Supplementary Information.....	15
Management's Discussion and Analysis.....	18
Basic Financial Statements:	
Statement of Fiduciary Net Position.....	22
Statement of Changes in Fiduciary Net Position.....	23
Notes to Financial Statements.....	24
Required Supplementary Information:	
Schedule of Changes in Net Pension Liability and Related Ratios.....	40
Schedule of Net Pension Liability.....	41
Schedule of Employer Contributions and Notes (Pension).....	42
Schedule of Investment Returns.....	43
Schedule of Funding Progress (OPEB).....	44
Schedule of Employer Contributions (OPEB).....	45
Supplementary Information:	
Schedule of Administrative Expenses.....	46
Schedule of Investment Expenses.....	47
Investment Section	
Investment Consultant's Statement.....	50
Mission Statement.....	52
Investment Responsibilities.....	52
Investment Objectives.....	52
Asset Allocation Target.....	53
Chart of Allocation Target.....	53
Chart of Allocation by Asset Class.....	54
Asset Target Allocation by Managed Account.....	55
Top Ten Stock and Bond Holdings.....	56
Investment Performance.....	57
Schedule of Investment Commissions.....	58
Schedule of Investment Fees.....	59
Actuarial Section	
Actuary's Certification Letter.....	62
Valuation Methods and Assumptions.....	64
Analysis of Financial Experience.....	74
Schedules of Retirees – Beneficiaries and Active Members.....	75
Solvency Test.....	76
Summary of Principal Plan Provisions.....	77
Schedule of Funding Progress.....	81
Schedule of Employer Contributions – Pension and Retiree Medical.....	82
Statistical Section	
Changes in Fiduciary Net Position.....	86
Schedule of Benefit Expenses by Type.....	88
Schedule of Retired Members by Type of Benefit – Pension and Health Insurance Reduction.....	90
Schedule of Retired Members by Attained Age and Type of Pension Benefit.....	92
Average Monthly Benefit Payment – Pension.....	93
Average Monthly Benefit Payment – Health Insurance Reduction.....	94
Principal Participating Employers.....	95
Location of Plan Retirees (Map).....	96

Introductory Section

This Page Intentionally Left Blank

Primary Plan Sponsor

City and County of Denver, Colorado

Elected Officials

Mayor

Honorable Michael B. Hancock

Auditor

Honorable Timothy M. O'Brien, CPA

City Council

District 1	Honorable Rafael Espinoza
District 2	Honorable Kevin Flynn
District 3	Honorable Paul D. López
District 4	Honorable Kendra Black
District 5	Honorable Mary Beth Susman
District 6	Honorable Paul Kashmann
District 7	Honorable Jolon Clark
District 8	Honorable Christopher Herndon
District 9	Honorable Albus Brooks
District 10	Honorable Wayne New
District 11	Honorable Stacie Gilmore
Council at-Large	Honorable Robin Kniech
Council at-Large	Honorable Deborah Ortega

Clerk and Recorder

Honorable Debra Johnson

June 1, 2017



Steven E. Hutt
Executive Director
777 Pearl Street
Denver, CO 80203
Ph. 303.839.5419
Fax 303.839.9525
www.derp.org

Dear Members of the Denver Employees Retirement Plan:

We are pleased to present the Comprehensive Annual Financial Report (CAFR) of the Denver Employees Retirement Plan (the Plan) of the City and County of Denver (the City) for the fiscal year ended December 31, 2016.

Comprehensive Annual Financial Report This report is an overview intended to give the reader reliable and useful information which describes the financial position of the Plan and provides assurance that the Plan is in compliance with applicable legal provisions. The Plan's management is responsible for the accuracy of the data contained in this report, and we believe the information included presents fairly the fiduciary net position of the Plan as of December 31, 2016, as well as the changes in fiduciary net position for the year.

Internal Control The Plan's management has designed and implemented internal and accounting controls to provide reasonable assurance of the accuracy and reliability of all the financial records and the safekeeping of the Plan assets. There are inherent limitations in the effectiveness of any system of internal controls. The cost of internal control should not exceed anticipated benefits; therefore the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements.

Independent Audit The Revised Municipal Code of the City requires an annual audit of the trust fund, with the results being furnished to the Mayor, the City Council, and the Auditor of the City. The Retirement Board selected the accounting firm CliftonLarsonAllen, LLP to render an opinion as to the fairness of the Plan's 2016 financial statements. The audit was performed in accordance with auditing standards generally accepted in the United States of America and the standards for financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. The Independent Accountants' Report is included in the Financial Section of this report.

Management's Discussion and Analysis Generally accepted accounting principles (GAAP) require that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement MD&A and should be read in conjunction with it. The Plan's MD&A can be found immediately following the report of the independent accountants in the Financial Section of this report.

Plan Profile The Plan was established on January 1, 1963, as a defined benefit plan. Most employees of the City, certain employees of the Denver Health and Hospital Authority (DHHA), and all of the Plan staff are covered by the Plan. Excluded from membership are the uniformed employees of the City's police and fire departments and the employees of the Denver Water Board. All active Plan members are required to contribute to Social Security while employed. As of December 31, 2016, there were 8,981 active and 9,302 retired members of the Plan.

The Plan is governed by a five member Board, the members of which are appointed for staggered six-year terms by the Mayor of the City. Additionally, three members of the Advisory Committee are elected by the Plan membership for staggered three-year terms and one member is appointed by the City's Career Service Board.

All Plan-related benefit and administrative provisions are detailed in Sections 18-401 through 18-430.7 of the Revised Municipal Code of the City. Any amendments to the Plan must be enacted into ordinance by the Denver City Council and approved by the Mayor of the City.

Introductory Section

The Plan provides retirement benefit options based upon the member's date of hire. At the time of retirement, a member may elect to receive a reduced benefit in order to provide a lifetime benefit to a spouse or an eligible beneficiary upon the member's death. The Plan also provides disability and death benefits. With respect to other post-retirement benefits, the Plan offers retired members and their beneficiaries the option of purchasing health, dental, and vision insurance coverage. Based on a formula incorporating a member's years of service, the Plan pays a portion of the monthly insurance premium(s). A more detailed explanation of benefits is outlined in the Summary of Principal Plan Provisions in the Actuarial Section of this report. The Plan's Membership Services representatives provide ongoing pre-retirement counseling to the active members and assist retired members and their beneficiaries throughout the year.

Investment Performance The Plan follows a strategic asset allocation policy so that investments are diversified. The goal of the asset allocation is to provide the highest level of return at an acceptable level of risk. In 2016, the Plan's investment portfolio returned 8.33% gross of fees. These investment results exceeded the median 7.84% return of peer public pension funds nationally, placing the Plan's returns well within the top one-third of our peers.

Funded Status The Plan's pension benefit fund continues to be in a healthy financial position compared to our peer group of other public pension funds nationally. The Retirement Board, the Executive Director, and the Plan staff remain committed to managing the Plan's assets and liabilities to maintain the long-term financial soundness of the Plan and to have the funds needed to pay every dollar of benefits promised to every current and future retiree. The funded status of the pension benefit fund for the year beginning January 1, 2016 was 72.2%. The Plan continues to work successfully with the City to annually receive the full amount of the actuarially required contribution necessary to achieve the Plan's funding goals. Additional information regarding the Plan's funding is included in the Actuarial Section of the report.

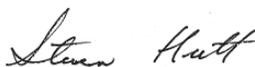
Awards The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Denver Employees Retirement Plan for its CAFR for the fiscal year ended December 31, 2015. The Certificate of Achievement is a prestigious national award recognizing excellence in the preparation of state and local government financial reports. To be awarded the Certificate of Achievement for Excellence in Financial Reporting, a government unit must publish an easily readable and efficiently organized report, the contents of which meet or exceed program standards. The report must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for one year. The Plan has received a Certificate of Achievement for 27 years in a row. We believe this current report continues to meet the Certificate of Achievement program requirements and will submit it to the GFOA for consideration again this year.

Conclusion We express our appreciation to the Plan staff who served the membership throughout 2016 and who prepared this report. We hope readers find it easy to read and understand, and will recognize the contributions that the Retirement Board, Advisory Committee, and Plan staff make toward the continued successful operation of the Plan.

Sincerely,



Guadalupe Gutierrez-Vasquez
Retirement Board Chair



Steven Hutt
Executive Director

Retirement Board

Each member is appointed by the Mayor of Denver



Cheryl Cohen-Vader

Term expires January 1, 2020



Guadalupe Gutierrez-Vasquez

Term expires January 1, 2021



John J. Hanley

Term expires January 1, 2023



Bruce Hoyt

Term expires January 1, 2019



Eric S. Rothaus

Term expires January 1, 2022

Advisory Committee

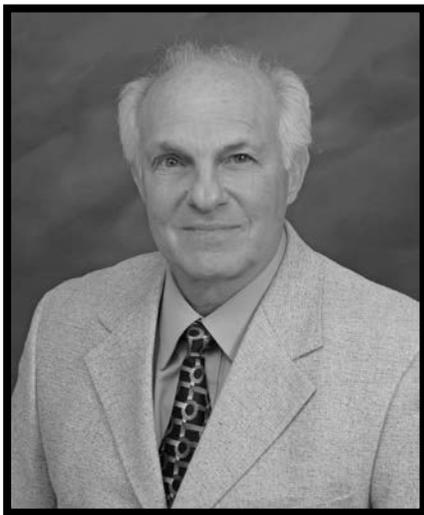
Three members are elected by the Plan membership and one member is appointed by the Denver Career Service Board



Michael F. Aleksick
Term expires June, 2018 on
the date of annual meeting



Heather L. Britton
Term expires June, 2020 on
the date of annual meeting



Robert Press
Term expires June, 2020 on
the date of annual meeting



Erma D. Zamora
Term expires June, 2019 on
the date of annual meeting

Professional Services

Actuary

- Gabriel Roeder Smith & Co.

Custodian Bank

- Bank of New York Mellon Corporation

Independent Auditor

- CliftonLarsonAllen, LLP

Investment Consulting

- Summit Strategies Group

Investment Managers

Domestic Equity Managers

- Brown Advisory
- Eagle Capital Management
- Franklin Templeton
- Mellon Capital Management
- Neuberger Berman, LLC

International Equity Managers

- Dimensional Fund Advisors
- Fidelity Institutional
- Franklin Templeton
- LSV Asset Management
- Mellon Capital Management

Fixed Income Managers

- Athyrium
- Bain Capital
- Golub Capital
- GSO Capital Partners, LP
- Mellon Capital Management
- Pictet Asset Management Limited
- Smith Graham & Company

Real Estate Managers

- Contrarian Capital Management, LLC
- Long Wharf Real Estate Partners, LLC
- JP Morgan Asset Management
- Prudential Real Estate Investors
- UBS Global Asset Management
- Walton Street Capital

Alternative Investments Managers

- Adams Street Partners, LLC
- EIG Global Energy Partners
- Hancock Timber Resource Group
- Invesco Private Capital
- JP Morgan Private Equity Group
- Kayne Anderson Capital Advisors
- Lime Rock Resources
- Tortoise Capital Advisors

Absolute Return Funds

- KKR Prisma

Investment commissions and fees can be found on pages 58-59 in the Investment Section.



Government Finance Officers Association

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

Presented to

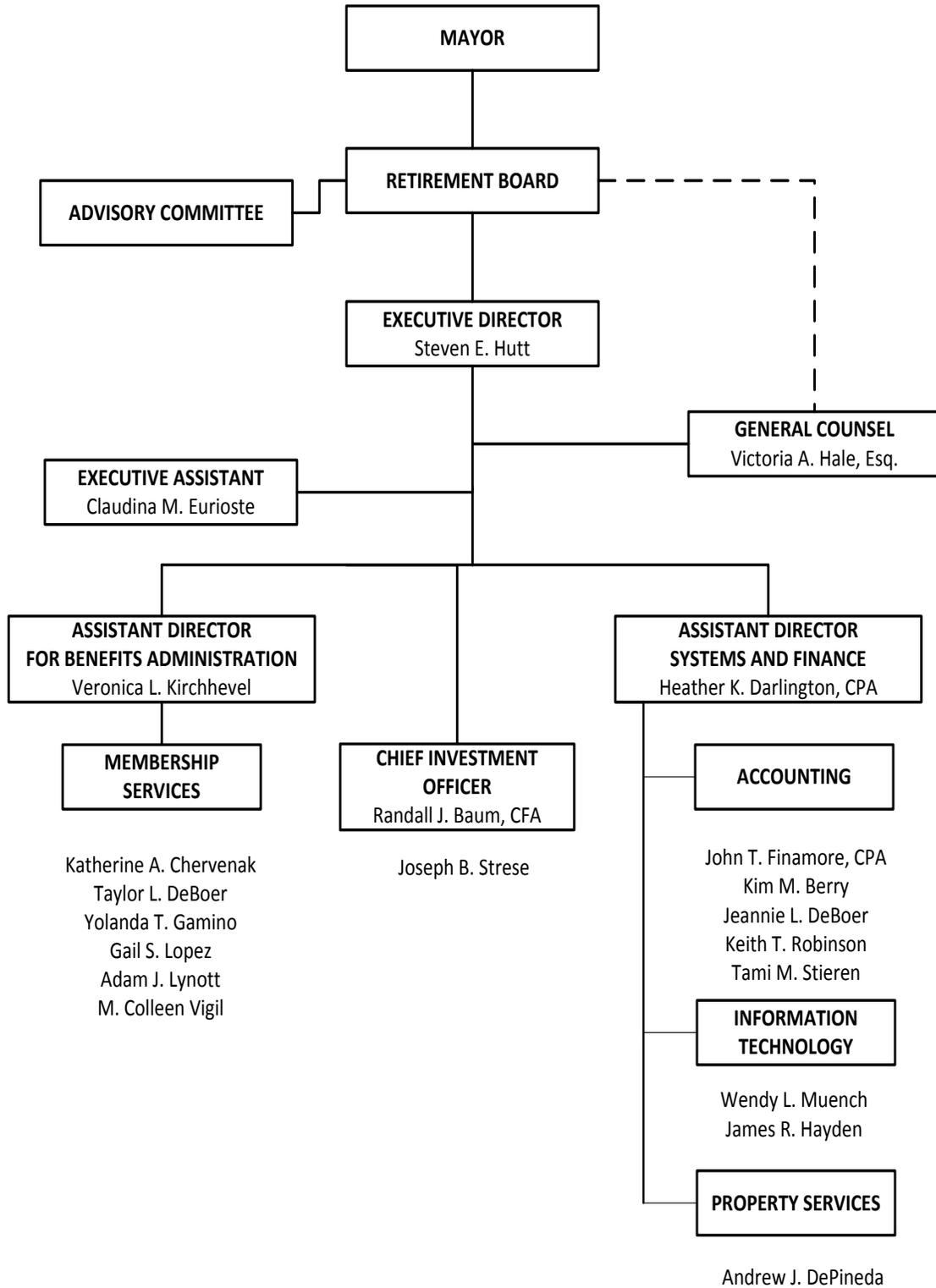
**Denver Employees Retirement Plan
Colorado**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2015

Executive Director/CEO

Organizational Structure



Financial Section

This Page Intentionally Left Blank



CliftonLarsonAllen LLP
CLAconnect.com

INDEPENDENT AUDITORS' REPORT

Retirement Board of Directors
Denver Employees Retirement Plan
Denver, Colorado

Report on the Financial Statements

We have audited the accompanying financial statements of the Denver Employees Retirement Plan (the Plan), a component unit of the City and County of Denver, as of and for the year ended December 31, 2016, and the related notes to the financial statements, which collectively comprise the Plan's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Plan'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 Plan'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 fiduciary net position of the Plan as of December 31, 2016, and the changes in its fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Report on Summarized Comparative Information

We have previously audited the Plan's 2015 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated May 9, 2016. In our opinion, the summarized comparative information presented herein as of and for the year ended December 31, 2015 is consistent, in all material respects, with the audited financial statements from which it has been derived.

Other Matters

Required Supplementary Information

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

Other Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Plan's basic financial statements. The other supplementary information listed in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

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

The introductory, investment, actuarial and statistical sections listed in the table of contents have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we express no opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated May 5, 2017, on our consideration of the Plan's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the result of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Plan's internal control over financial reporting and compliance.



CliftonLarsonAllen LLP

Denver, Colorado
May 5, 2017

Financial Section

Management's Discussion and Analysis

This is an analysis and overview of the financial activities of the Denver Employees Retirement Plan (the Plan) for the year ended December 31, 2016. For additional information, please refer to the basic financial statements, notes to the financial statements, required supplementary information, and supporting schedules.

Financial Highlights

As of December 31, 2016, \$2,082,001,911 (net) was restricted for the payment of benefits and to meet the Plan's future obligations to its members and their beneficiaries.

For 2016, the Plan's total net position restricted for benefits increased by \$65,502,447, a 3.2% increase from the amount of net position restricted for benefits reported at the end of 2015. The net increase for 2016 is the result of favorable financial markets for the year that contributed to a net investment gain of \$152,668,796, reduced by benefit payments exceeding contributions received.

Additions to the Plan's net position included contributions of \$66,079,127 from the City and County of Denver (the City) and \$7,079,884 from the Denver Health and Hospital Authority (DHHA). In addition, active members of the Plan contributed \$51,049,852.

Deductions from the Plan's net position during 2016 totaled \$211,375,212. This amount is 5.2% higher than the total 2015 deductions. Increasing retired member benefits, due to a net increase in the number of retirees and higher average monthly benefit payments for new retirees, is the cause for the higher deduction amount.

The Plan's funding objective is to meet its long-term benefit obligations through employer and employee contributions and investment returns. As of January 1, 2016, the date of the last actuarial valuation, the funded ratio for the pension and health benefits funds was 72.2% and 52.5%, respectively.

Overview of the Financial Statements

The following discussion and analysis is intended to serve as an introduction to the Plan's financial statements which follow. The financial statements include:

- Statement of Fiduciary Net Position
- Statement of Changes in Fiduciary Net Position
- Notes to Financial Statements
- Required Supplementary Information
- Supplementary Information

The Statement of Fiduciary Net Position presents the Plan's assets, liabilities, and net position as of December 31, 2016, with summarized comparative totals for 2015. This statement reflects the Plan's net position available for benefits in each the retirement and the health benefits funds as of December 31, 2016, and in the aggregate as of December 31, 2015.

The Statement of Changes in Fiduciary Net Position shows the additions to and deductions from the Plan's net position during 2016, with summarized comparative totals for 2015.

The Governmental Accounting Standards Board (GASB) promulgates the requirements for financial statement presentation and certain disclosures for state and local governmental entities. The financial statements, notes to financial statements, and required supplementary information presented in this report were prepared in compliance with applicable GASB pronouncements.

Financial Section

Management's Discussion and Analysis

The financial statements provide a snapshot of the Plan's assets and liabilities as of December 31, 2016 and the financial activities which occurred during the year. The financial statements were prepared using the economic resources measurement focus and the accrual basis of accounting. Investment activities have been reported based on trade dates and were valued pursuant to independent outside sources. All capital assets, exclusive of land, are depreciated over their useful lives. Refer to the financial statements and notes to the financial statements for additional information.

Notes to the Financial Statements provide additional information which is essential for a full understanding of the basic financial statements.

Required Supplementary Information provides additional information and details about the Plan's progress in funding its future obligations and the history of employer and employee contributions.

Other supplementary schedules are also included. The Schedule of Administrative Expenses present the overall cost of administrating the Plan. The schedule of Investment Expenses show the cost associated with investing the assets of the Plan.

Financial Analysis

There are several ways to measure the Plan's financial status. One means is to determine the Plan's net position available to pay benefits. This is the difference between total assets and total liabilities. Another way is to refer to the funded ratio which takes into account the actuarial assets and actuarial liabilities of the Plan. As of January 1, 2016, the date of the last actuarial valuation, the pension benefits fund had a funded ratio of 72.2%, or for every dollar of pension benefits due participants, the Plan had approximately \$0.72 in actuarial assets available for payment. The health benefits account had a funded ratio of 52.5%, meaning the Plan had approximately \$0.53 in actuarial assets available for payment for every dollar of health benefits due.

On December 31, 2016, the Plan's net position totaled \$2,082,001,911. Of this amount, \$118,712,938 represented funds reserved in the Deferred Retirement Option Plan (DROP) and the Amended Deferred Retirement Option Plan (DROP II) accounts.

The Plan's Board has an investment allocation strategy in place and, with the help of an outside consultant, continually monitors the Plan's investments. The Plan's total assets increased in 2016 due to strong returns from its investment portfolio. As of December 31, the Plan's fiduciary net position was:

	2016	2015	Amount of Change	Percentage Change
Assets				
Cash, short-term investments, and receivables	\$ 52,125,995	\$ 48,353,227	\$ 3,772,768	7.8%
Securities lending collateral	176,973,420	232,666,571	(55,693,151)	(23.9%)
Investments, at fair value	2,028,747,197	1,969,806,460	58,940,737	3.0%
Capital assets, net	4,345,752	4,766,996	(421,244)	(8.8%)
Total assets	2,262,192,364	2,255,593,254	6,599,110	0.3%
Liabilities				
Accounts payable and unsettled securities purchased	3,217,033	6,427,219	(3,210,186)	(49.9%)
Securities lending obligations	176,973,420	232,666,571	(55,693,151)	(23.9%)
Total liabilities	180,190,453	239,093,790	(58,903,337)	(24.6%)
Fiduciary net position	\$ 2,082,001,911	\$ 2,016,499,464	\$ 65,502,447	3.2%

Financial Section

Management's Discussion and Analysis

Reserves

The Plan has established a reserve account for accumulated DROP benefits of \$118,712,938 as of December 31, 2016. These funds are restricted for individuals who elected to participate in one of the DROP programs. Upon retirement, the member could elect to receive distributions or keep the accumulated monies with the Plan. The remaining Plan net position is available to pay retirement and health benefits to all eligible members and beneficiaries.

Plan Activities

Net additions were higher than Plan deductions, resulting in an overall 3.2% increase in Plan net position for the year. For the years ended December 31, the Plan's activities were:

	2016	2015	Amount of Change	Percentage Change
Additions				
Contributions	\$ 124,208,863	\$ 121,330,503	\$ 2,878,360	2.4%
Net investment earnings	152,668,796	(37,054,557)	189,723,353	(512.0%)
Total additions, net	276,877,659	84,275,946	192,601,713	228.5%
Deductions				
Benefits	207,499,250	196,978,251	10,520,999	5.3%
Administrative expenses	3,875,962	3,926,712	(50,750)	(1.3%)
Total deductions	211,375,212	200,904,963	10,470,249	5.2%
Change in net position	65,502,447	(116,629,017)	182,131,464	(156.2%)
Beginning of year net position	2,016,499,464	2,133,128,481	(116,629,017)	(5.5%)
End of year Fiduciary net position	\$ 2,082,001,911	\$ 2,016,499,464	\$ 65,502,447	3.2%

Additions to Fiduciary Net Position

The monies needed to pay benefits are accumulated from the contributions made from employers and employees, and income generated from the Plan's investments. Income or losses on investments are reported net of investment management expenses. Employer contributions for 2016 totaled \$73,159,011, which is 2.2% higher than the amounts contributed in 2015, due primarily to an increase in the number of covered employees in 2016. During 2016, employees contributed a total of \$51,049,852, which is an increase of 2.7% over the 2015 amount due to increases in the number of active employees contributing and service buybacks. The Plan's net investment return was approximately 7.8% in 2016 compared to -1.9% in 2015. Top contributors to performance were emerging market equities, real estate, private debt, and energy. The Plan had net securities lending transaction income of \$991,458.

	2016	2015	Amount of Change	Percentage Change
Employer contributions	\$ 73,159,011	\$ 71,614,704	\$ 1,544,307	2.2%
Employee contributions	51,049,852	49,715,799	1,334,053	2.7%
Net appreciation (depreciation) in fair value of investments	125,202,414	(55,770,238)	180,972,652	(324.5%)
Interest, dividends, real estate/alternative investments, and absolute return income	41,704,606	33,152,256	8,552,350	25.8%
Securities lending transactions income, net	991,458	989,338	2,120	0.2%
Investment expenses	(15,229,682)	(15,425,913)	196,231	(1.3%)
Total additions, net	\$ 276,877,659	\$ 84,275,946	\$ 192,601,713	228.5%

Financial Section

Management's Discussion and Analysis

Deductions from Fiduciary Net Position

The Plan provides a lifetime pension benefit to its retired members, as well as survivor, disability, and retiree health, dental, and vision benefits. Annual expenses of the Plan include retirement benefits, DROP distributions, refunds of employee contributions, and administrative expenses. For the year ended December 31, 2016, deductions totaled \$211,375,212, an increase of 5.2% over the amount of 2015 total deductions. The increase is attributed to a 2.8 % net increase in the number of retirees, along with higher average monthly benefit payments for new retirees. Refunds of contributions to non-vested members were higher due to a 10.0% increase in the number of member refund requests, coupled with a higher average refund per member. Administrative expenses were slightly lower than those of the previous year due primarily to a decrease in salary expenses.

	<u>2015</u>	<u>2015</u>	<u>Amount of Change</u>	<u>Percentage Change</u>
Benefits	\$ 204,649,961	\$ 194,733,222	\$ 9,916,739	5.1%
Employee refunds	2,849,289	2,245,029	604,260	26.9%
Administrative expenses	3,875,962	3,926,712	(50,750)	(1.3%)
Total deductions	<u>\$ 211,375,212</u>	<u>\$ 200,904,963</u>	<u>\$ 10,470,249</u>	5.2%

Capital Assets

Capital assets, net of accumulated depreciation, had a net decrease of \$421,244 for the year ended December 31, 2016, which is comprised primarily of depreciation expense of \$433,269. See Note 9 *Capital Assets* for additional information.

Requests for Information

This management's discussion and analysis is intended to provide the Plan's Board, participating employers, and the membership with an overview of the Plan's financial position as of December 31, 2016, and a summary of the Plan's activities for the year then ended.

Questions about any of the information presented or requests for additional information should be directed to:

Denver Employees Retirement Plan
777 Pearl Street
Denver, CO 80203
Phone: 303-839-5419
Fax: 303-839-9525
Website: www.derp.org
Email: mbrsvs@derp.org

Financial Section

Statement of Fiduciary Net Position

December 31, 2016

(with Summarized Comparative Totals for December 31, 2015)

	Pension Benefits	Health Benefits	December 31,	
			2016	2015
Assets				
Cash and short-term investments	\$ 48,394,709	\$ 1,726,038	\$ 50,120,747	\$ 43,582,761
Securities lending collateral	170,997,563	5,975,857	176,973,420	232,666,571
Receivables				
Unsettled securities sold	353,131	12,341	365,472	2,954,802
Interest and dividends	<u>1,580,727</u>	<u>55,242</u>	<u>1,635,969</u>	<u>1,815,664</u>
Total receivables	1,933,858	67,583	2,001,441	4,770,466
Investments, at fair value				
U.S. Government obligations	125,350,901	4,380,641	129,731,542	152,232,618
Domestic corporate bonds and other fixed income	280,881,116	9,815,960	290,697,076	242,235,541
Domestic stocks	437,559,740	15,291,412	452,851,152	452,949,879
International stocks	471,136,254	16,464,812	487,601,066	481,549,512
Real estate	158,829,934	5,550,634	164,380,568	183,585,384
Alternative investments	397,050,442	13,875,733	410,926,175	353,274,024
Absolute return	<u>89,434,160</u>	<u>3,125,458</u>	<u>92,559,618</u>	<u>103,979,502</u>
Total investments	1,960,242,547	68,504,650	2,028,747,197	1,969,806,460
Prepaid Items	3,678	129	3,807	-
Capital assets				
Land	415,520	14,521	430,041	430,041
Building and equipment, net of accumulated depreciation	<u>3,783,489</u>	<u>132,222</u>	<u>3,915,711</u>	<u>4,336,955</u>
Total assets	2,185,771,364	76,421,000	2,262,192,364	2,255,593,254
Liabilities				
Unsettled securities purchased	606,046	21,180	627,226	3,837,876
Securities lending obligations	170,997,563	5,975,857	176,973,420	232,666,571
Accounts payable	<u>2,502,357</u>	<u>87,450</u>	<u>2,589,807</u>	<u>2,589,343</u>
Total liabilities	<u>174,105,966</u>	<u>6,084,487</u>	<u>180,190,453</u>	<u>239,093,790</u>
Net position restricted for benefits	<u>\$ 2,011,665,398</u>	<u>\$ 70,336,513</u>	<u>\$ 2,082,001,911</u>	<u>\$ 2,016,499,464</u>
Net position restricted for pension and health benefits	\$ 1,892,952,460	\$ 70,336,513	\$ 1,963,288,973	\$ 1,903,488,637
Net position restricted for DROP and DROP II benefits	<u>118,712,938</u>	<u>-</u>	<u>118,712,938</u>	<u>113,010,827</u>
Net position restricted for benefits	<u>\$ 2,011,665,398</u>	<u>\$ 70,336,513</u>	<u>\$ 2,082,001,911</u>	<u>\$ 2,016,499,464</u>

See Notes to Financial Statements

Financial Section

Statement of Changes in Fiduciary Net Position

Year Ended December 31, 2016

(with Summarized Comparative Totals for the Year Ended December 31, 2015)

	Pension Benefits	Health Benefits	Year ended December 31,	
			2016	2015
Additions				
Contributions				
City and County of Denver, Colorado	\$ 62,022,885	\$ 4,056,242	\$ 66,079,127	\$ 64,442,980
Denver Health and Hospital Authority	6,771,986	307,898	7,079,884	7,171,724
Plan members	<u>48,037,800</u>	<u>3,012,052</u>	<u>51,049,852</u>	<u>49,715,799</u>
Total contributions	116,832,671	7,376,192	124,208,863	121,330,503
Investment earnings				
Net appreciation (depreciation) in fair value of investments	120,923,410	4,279,004	125,202,414	(55,770,238)
Interest	14,245,900	508,005	14,753,905	7,196,034
Dividends	10,936,087	388,922	11,325,009	14,190,025
Real estate, alternative investments, and absolute return income	<u>15,088,394</u>	<u>537,298</u>	<u>15,625,692</u>	<u>11,766,197</u>
	161,193,791	5,713,229	166,907,020	(22,617,982)
Investment expenses	<u>(14,707,470)</u>	<u>(522,212)</u>	<u>(15,229,682)</u>	<u>(15,425,913)</u>
	146,486,321	5,191,017	151,677,338	(38,043,895)
Securities lending transactions income	1,163,889	41,623	1,205,512	798,643
Securities lending transactions expenses				
Borrower rebates	112,105	4,105	116,210	520,222
Agent fees	<u>(318,838)</u>	<u>(11,426)</u>	<u>(330,264)</u>	<u>(329,527)</u>
	<u>957,156</u>	<u>34,302</u>	<u>991,458</u>	<u>989,338</u>
Net investment earnings (losses)	<u>147,443,477</u>	<u>5,225,319</u>	<u>152,668,796</u>	<u>(37,054,557)</u>
Total additions, net	264,276,148	12,601,511	276,877,659	84,275,946
Deductions				
Retired member benefits	186,088,489	12,859,361	198,947,850	188,951,262
DROP and DROP II benefits paid	5,702,111	-	5,702,111	5,781,960
Refunds of contributions	2,751,016	98,273	2,849,289	2,245,029
Administrative expenses	<u>3,742,451</u>	<u>133,511</u>	<u>3,875,962</u>	<u>3,926,712</u>
Total deductions	<u>198,284,067</u>	<u>13,091,145</u>	<u>211,375,212</u>	<u>200,904,963</u>
Change in net position	65,992,081	(489,634)	65,502,447	(116,629,017)
Net position held in trust for benefits				
Beginning of year	<u>1,945,673,317</u>	<u>70,826,147</u>	<u>2,016,499,464</u>	<u>2,133,128,481</u>
End of year	<u>\$ 2,011,665,398</u>	<u>\$ 70,336,513</u>	<u>\$ 2,082,001,911</u>	<u>\$ 2,016,499,464</u>

See Notes to Financial Statements

Notes to Financial Statements

Note 1 Plan Description

The Denver Employees Retirement Plan (the Plan) administers a cost-sharing multiple-employer defined benefit plan providing pension and post employment health benefits to eligible members. The Plan was established in 1963 by the City and County of Denver, Colorado. During 1996, the Denver Health and Hospital Authority (DHHA) was created and joined the Plan as a contractual entity. In 2001, the Plan became closed to new entrants from DHHA. All risks and costs are shared by the City and County of Denver (the City) and DHHA. There is a single actuarial evaluation performed annually that covers both the pension and post employment health benefits. All assets of the Plan are funds held in trust by the Plan for its members for the exclusive purpose of paying pension and post employment health benefits.

Substantially all of the general employees of the City, certain employees of DHHA, and all employees of the Plan are covered under the Plan. The classified service employees of the Denver Police and Denver Fire Departments, and the employees of the Denver Water Board, are covered by separate retirement systems. At December 31, 2016, the Plan membership consisted of the following:

	Pension Benefits	Health Benefits
Retirees and beneficiaries currently receiving benefits	9,302	6,443
Retirees and beneficiaries entitled to health benefits but not receiving any	-	2,863
Terminated employees entitled to benefits but not yet receiving them	3,500	3,500
Current employees:		
Vested	5,104	5,104
Non-vested	3,877	3,877
Total	21,783	21,787

The following brief description of the Plan is provided for general information purposes only. Sections 18-401 through 18-430.7 of the City’s Revised Municipal Code should be referred to for complete details of the Plan.

The Plan provides retirement, death and disability benefits for its members and their beneficiaries. Members who were hired before July 1, 2011, and retire at or after age 65 (or at age 55 if the sum of their age and credited service is at least 75) are entitled to an annual retirement benefit, in an amount equal to 2.0% of their final average salary for each year of credited service, payable monthly for life. Effective for employees hired after September 1, 2004, the formula multiplier was reduced to 1.5%. Final average salary is based on the member’s highest salary during a 36 consecutive month period of credited service. Members with 5 years of credited service may retire at or after age 55 and receive a reduced retirement benefit.

For members who were hired after July 1, 2011, they must be age 60 and have combined credited service of at least 85 in order to receive a normal retirement prior to age 65. Final average salary is based on the member’s highest salary during a 60 consecutive month period of credited service. Five year vesting is required of all employees in order to qualify for a benefit, regardless of their age at the time of termination of employment.

Annual cost of living adjustments are granted on an ad hoc basis. The estimated cost of benefit and contribution provisions is determined annually by an independent actuary, recommended by the Plan’s Board, and enacted into ordinance by the Denver City Council.

Notes to Financial Statements

The health benefits account was established by City Ordinance in 1991 to provide, beginning January 1, 1992, post-employment health care benefits in the form of a premium reduction to retired members, their spouses and dependents, spouses and dependents of deceased active and retired members, and members of the Plan awaiting approval of retirement applications. During 2016, the monthly health insurance premium reduction was \$12.50 per year of service for retired participants not yet eligible for Medicare, and \$6.25 per year of service for retirees eligible for Medicare. The health insurance premium reduction can be applied to the payment of medical, dental, and/or vision insurance premiums. The benefit recipient pays any remaining portion of the premiums.

Note 2 Summary of Significant Accounting Policies

Reporting Entity

The Plan has separate legal standing and is fiscally independent of the City. However, based upon the criterion of financial accountability as defined by Governmental Accounting Standards Board (GASB) Statement No. 14, *The Financial Reporting Entity*, as amended, the Plan is reported as a component unit of the City's financial reporting entity.

Basis of Accounting and Presentation

The accompanying financial statements are prepared in accordance with accounting principles generally accepted in the United States of America. The Plan is accounted for using the economic resources measurement focus and the accrual basis of accounting. Employer/employee contributions and investment earnings are recognized in the period in which they are due and earned, respectively. Expenses are recognized when incurred. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

Plan Expenses

The Plan's Board acts as the trustee of the Plan's assets. The operating and other administrative expenses incurred by the Board, or its employees, in the performance of its duties as the Plan's trustee are paid from the assets of the Plan accumulated from contributions and investment earnings. Such expenses totaled \$3,875,962 in 2016, and are reported as administrative expenses in the accompanying statement of changes in plan net position.

Investments

The Plan's investments are reported at fair value. The fair value of domestic stocks is based on prices reported by national exchanges. The fair value of international stocks and fixed income securities are based on prices obtained from an approved independent pricing service. Fair values of real estate and alternative investments are valued using the net asset value (NAV) determined by independent periodic appraisals of properties owned and valuation of assets in the various investment funds. The absolute return fund of funds' investment fair value is based upon net asset values provided by the fund's third-party administrator. Short-term investments, with the exception of international funds, are recorded at amortized cost which approximates fair value. Investment earnings are recognized as earned. Gains and losses on sales and exchanges of securities are recognized on the trade date.

For 2016, the Plan realized net gain on the disposition of investments of \$30,514,159. The calculation of realized gains and losses is independent of the calculation of the net appreciation in the fair value of the Plan's investments and is determined using the weighted average cost method. Unrealized gains and losses on investments held for more than one year and sold in the current year were included in the net appreciation in the fair value of investments reported for 2016.

Notes to Financial Statements

Investments of the Plan shall be in accordance with all applicable laws of the State of Colorado and the City, specifically:

- Investments shall be solely in the interest of the participants and their beneficiaries and for the exclusive purpose of providing benefits to the participants and their beneficiaries.
- Investments shall be made with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent investor acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims.
- Investments shall be diversified so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly prudent not to do so.

Capital Assets

Capital assets, which include land, building, furniture, and equipment, are recorded at historical cost. The Plan's capitalization threshold for capital assets is \$500 of cost and a useful life in excess of one year. The costs of routine maintenance and repairs that do not add to the value of capital assets or materially extend assets' lives are not capitalized. Depreciation on capital assets, excluding land, is calculated using the straight-line method over the following estimated useful lives:

Building	30 years
General office equipment and furniture	10 years
Internally generated computer software	15 years
Computer equipment	5 years

Income Taxes

The Plan's current determination letter issued by the Internal Revenue Service, dated February 27, 2014, qualifies the Plan as a tax-exempt entity pursuant to Section 401(a) of the Internal Revenue Code. Earnings on the trust funds are exempt from federal income tax under Section 501(a) of the Internal Revenue Code.

Estimates Made by Management

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Plan's management to make certain estimates and assumptions that affect the reported amounts of assets, liabilities, and changes therein and disclosure of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

Prior-Year Summarized Totals

The basic financial statements include certain prior year summarized comparative information in total, but do not present detail for the pension or health benefits accounts. Such information does not include sufficient detail to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the Plan's audited financial statements for the year ended December 31, 2015, from which the summarized information was derived.

Notes to Financial Statements

Current Economic Conditions

The current economic environment continues to present public employee benefit plans such as the Plan with challenges which have resulted in substantial volatility in the fair value of investments. The accompanying financial statements have been prepared using values and information available to the Plan as of the date of the financial statements. Due to the volatility of economic conditions, the values of assets recorded in the financial statements could change materially in the future.

Accounting Pronouncement

The GASB has issued Statement No. 72, Fair Value Measurement and Application. This statement addresses accounting and reporting issues related to fair value measurements with disclosures to be made about fair value measurements, level of fair value hierarchy, and valuation techniques. The requirements of this Statement are effective for financial statements for fiscal years beginning after June 15, 2015 and are reflected on the Plan's financial statements for the year ending December 31, 2016.

Note 3 Contributions

The Plan's funding policy provides for annual contributions at rates determined by an independent actuary recommended by the Plan's Board and enacted by City ordinance which, when expressed as a percentage of annual covered payroll, are sufficient to accumulate assets to pay benefits when due. During 2016, the actuarially determined contribution rates, expressed as a percentage of annual covered payroll, for the pension and health benefits were 18.35% and 1.20%, respectively, for a combined total of 19.55%. The City enacted Ordinance No. 701 in 2014 to re-set the combined total contribution rate to 19.50% effective January, 2015, with no change for 2016 or 2017. In 2016, employers contributed a total of 11.50% of covered payroll and employees made a pre-tax contribution of 8.00% in accordance with Section 18-407 of the City's Revised Municipal Code. The employees' contribution was handled as a payroll deduction and was forwarded to the Plan with the employers' contribution. During 2016, the employers contributed \$68,794,871 for pension benefits and \$4,364,140 for health benefits while the employees contributed a total of \$48,037,800 for pension benefits and \$3,012,052 for health benefits.

An actuarial valuation is performed annually by an independent actuarial consultant to determine that contributions are sufficient to provide funds for future benefits and to evaluate the funded status of the Plan. For 2016, in accordance with the January 1, 2016, actuarially determined contribution requirements, the total required contribution was \$114,688,971 (\$57,171,025 of normal cost and \$50,497,306 amortization of the unfunded actuarial accrued liability for pension benefits; \$2,581,047 of normal cost and \$4,439,593 amortization of the unfunded actuarial accrued liability for health benefits) based on a rate of 19.55% of projected payroll. The actual contribution was \$122,227,528 using a rate of 19.50% of covered payroll, which when combined with the members' repayments of \$1,981,335, discussed below, resulted in total contributions of \$124,208,863. In accordance with a separate agreement between DHHA and the Plan, DHHA made a supplemental contribution in the amount of \$2,611,565, which is included in the total contributions amount.

During 2016, employee contributions totaled \$51,049,852 and were allocated to pension and health benefits in the same manner as the employers' contributions. Regular employee contributions were not required or allowed between January 1, 1979, and September 30, 2003. City ordinance currently allows members to repay refunded contributions plus interest to reinstate service credits for periods prior to January 1, 1979. Any employee who made contributions after September 30, 2003, and was not vested upon leaving covered service could request a refund of those contributions. Eligible active members may also purchase permissive service credits in accordance with the Internal Revenue Code, which includes a maximum of five years of nonqualified service credits. Members paid \$1,981,335 under these provisions during 2016.

Notes to Financial Statements

Note 4 Deferred Retirement Option Plan (DROP)

Between January 1, 2001, and April 30, 2003, active members of the Plan who were eligible for a normal or rule-of-75 retirement could choose to enter the Deferred Retirement Option Plan (DROP) for a maximum of four years. After April 30, 2003, no active member with an actual and effective date of retirement after May 1, 2003, could enter or participate in DROP. Under DROP, the member’s monthly retirement benefit was calculated as of the date of DROP entry. While participating in DROP, the member continued to work for the employer, earning a regular salary. The monthly retirement benefits were deposited into a DROP account maintained by the Plan. The balance in each member’s DROP account earns interest at a rate equal to the actuarial assumed rate of return, currently 7.75% per annum. Sections 18-422 through 18-429 of the City’s Revised Municipal Code should be referred to for more complete information on DROP. Upon retirement, members have access to the funds accumulated during their participation in DROP. During 2016, a total of \$8,236,411 in interest was credited to members’ DROP accounts. During 2016, a total of \$2,775,609 was distributed from the DROP accounts to members who had retired and exited DROP. As of December 31, 2016, the reserve for DROP payments was \$113,851,955.

Note 5 Amended Deferred Retirement Option Plan (DROP II)

Between May 1, 2003, and August 31, 2003, active members of the Plan who were eligible for a normal or rule-of-75 retirement could choose to enter the Amended Deferred Retirement Option Plan (DROP II) for a maximum of five years. While participating in DROP II, the member continued to work for the employer, earning a regular salary. The member’s monthly retirement benefits were deposited into a DROP II account maintained by the Plan. The balance in each member’s DROP II account earns interest equal to the Plan’s investment earnings rate provided it is not less than 3% per annum and not more than the Plan’s annual actuarial assumed rate of return, currently 7.75% per annum. Sections 18-430 through 18-430.7 of the City’s Revised Municipal Code should be referred to for more complete information on DROP II. Upon exiting DROP II, members have access to the funds accumulated during their participation in DROP II. A total of \$282,257 in interest was credited to members’ DROP II accounts during 2016. Also during 2016, a total of \$40,948 was distributed to members who had exited DROP II. As of December 31, 2016, the reserve for DROP II payments was \$4,860,983.

Note 6 Funded Status and Funding Progress of Health Benefits

The funded status of the Plan’s Health Benefits as of January 1, 2016, was as follows:

	Health Benefits
Actuarial accrued liability (AAL)	\$153,254,546
Actuarial value of Plan assets	80,383,172
Unfunded AAL	\$72,871,374
Funded ratio (actuarial value of Plan assets/AAL)	52.5%
Covered payroll (active Plan members)	\$586,819,180
Unfunded AAL as a percentage of covered payroll	12.4%

The actuarial valuation of the Plan’s health benefits involve estimates of the value of reported amounts and assumptions about the probability of certain events well into the future. Actuarially determined amounts are subject to revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information immediately following the notes to the financial statements, presents multi-year trend information showing whether the actuarial value of the Plan’s assets is increasing or decreasing over time.

Financial Section

Notes to Financial Statements

The value of projected benefits for financial reporting purposes is based upon the substantive plan in effect at the time of each actuarial valuation, and the pattern of sharing costs between the employers and plan members to that point. Consistent with the long-term perspective of the actuarial calculations, the actuarial methods and assumptions used include techniques intended to reduce short-term volatility in the actuarial accrued liabilities and the actuarial value of assets.

For the January 1, 2016, actuarial valuation, the projected unit credit valuation method was used. The Actuarial Value of Assets recognizes 20% of the difference between the projected actuarial value and the fair value at the valuation date. This method has the effect of smoothing volatility in investment returns. The actuarial assumptions included a 7.75% investment rate of return (net of administrative expenses), projected salary increases of 3.25% – 7.25%, including inflation of 2.75%, and no cost of living increases. Healthcare cost trend rate is not applicable for health benefits as the benefit is based solely upon the member's age and years of service. The amortization period at December 31, 2016, was 30 years using a level percent of pay, closed basis, amortization method.

Note 7 Deposits and Investments

It is the objective of the Plan in managing the trust as a whole to provide a net realized nominal rate of return meeting or exceeding the actuarial assumption of 7.75% annualized, over a full market/economic cycle of three to seven years. The relative investment objective of the Plan is to exceed the rate of return that would have been achieved by a statically allocated and passively managed portfolio, at the same risk, in accordance with a long-term asset allocation strategy of the following approximate percentages:

	Long-term Target	Policy Range
Public Equity	46.0%	41.0% - 56.0%
Fixed Income	20.5%	16.0% - 26.0%
Real Estate	8.0%	6.0% - 10.0%
Absolute Return	5.0%	3.5% - 6.5%
Energy MLPs	7.0%	5.0% - 9.0%
Alternatives	13.5%	6.0% - 17.0%
Total Fund	100.0%	

Fair Value Measurement

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

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

Notes to Financial Statements

Note 7 DEPOSITS AND INVESTMENTS (continued)

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

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation.

The Plan's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The tables on the following pages show the classification by fair value level of the investments for the Plan.

Short-term securities generally include investments in money market-type securities reported at amortized cost which approximates market or fair value.

Equities within all asset classes that are classified in Level 1 are valued using prices quoted in active markets for those securities. Equity and equity derivative securities classified in Level 2 are securities whose values are derived daily from associated traded securities. The Plan currently does not maintain equity securities classified as Level 3.

Fixed income securities and derivatives within all asset classes that are classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features, and ratings. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Such securities include U.S. Treasuries, corporate and agency bonds, bank loans, and mortgage-backed securities. Level 2 fixed income securities have non-proprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market. The Plan currently does not maintain fixed income securities classified as Level 3.

Financial Section

Notes to Financial Statements

Note 7 DEPOSITS AND INVESTMENTS (continued)

	Totals at 12/31/2016	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Investments by fair value level				
U.S. Government Obligations				
Treasuries	\$ 36,100,510	\$ 36,100,510	\$ -	\$ -
Agencies	58,944,818	-	58,944,818	-
Total U.S. Government Obligations	95,045,328	36,100,510	58,944,818	-
Domestic corporate bonds and other fixed income				
Corporate Bonds	13,570,029	-	13,570,029	-
Mortgage Bonds	1,014,807	-	1,014,807	-
Index fund	89,541,592	-	89,541,592	-
Total Domestic corporate bonds and other fixed income	104,126,428	-	104,126,428	-
Domestic stocks				
Equities	352,235,492	352,235,492	-	-
Index fund	100,615,660	100,615,660	-	-
Total Domestic stocks	452,851,152	452,851,152	-	-
International stocks				
Equities	76,761,393	76,761,393	-	-
Equity funds	376,792,383	376,792,383	-	-
Index fund	34,047,290	34,047,290	-	-
Total International stocks	487,601,066	487,601,066	-	-
Publicly traded partnerships				
Master limited partnerships	150,783,219	150,783,219	-	-
Total Publicly traded partnerships	150,783,219	150,783,219	-	-
Total Investment by fair value level	1,290,407,194	1,127,335,948	163,071,246	-
Total Investments measured at the NAV (See detailed schedule on the following page)	738,340,003			
Total Investments measured at amortized cost	30,435,611			
Total Investments measured at fair value	\$ 2,059,182,808			
Total Invested securities lending collateral	\$ 231,774,218	\$ -	\$ 231,774,218	\$ -

Financial Section

Notes to Financial Statements

Note 7 DEPOSITS AND INVESTMENTS (continued)

Investments measured at the NAV	Totals at 12/31/2016	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Fixed Income Investments				
Private Debt	\$174,741,097	\$61,582,551	Not Eligible	N/A
Emerging Market Debt	46,515,765	-	Monthly	3 Days
Total Fixed Income Investments	221,256,862	61,582,551		
Real Estate Investments				
Real Estate - Open end	138,939,633	-	Quarterly	20-90 Days
Real Estate - Closed end	25,440,935	19,890,556	Not Eligible	N/A
Total Real Estate Investments	164,380,568	19,890,556		
Alternative Investments				
Private Equity	153,175,007	145,003,230	Not Eligible	N/A
Energy Investments	72,189,461	59,327,625	Not Eligible	N/A
Timber	34,778,486	-	Not Eligible	N/A
Total Alternative Investments	260,142,954	204,330,855		
Absolute Return				
Hedge Fund	92,559,618	-	Quarterly	65 Days
Total Absolute Return	92,559,618	-		
Total Investments measured at the NAV	\$ 738,340,003	\$ 285,803,962		

Fixed Income Investments

Private debt investments are intended to generate returns by lending money to various businesses and enterprises, or by purchasing loans originated by other lenders. There are six comingled investment pools, each taking the form of a partnership or similar structure. The debt may be secured or unsecured, and various yield enhancing techniques may be used such as royalty sharing, equity options, or the application of leverage.

Investments in emerging market debt seek to purchase the publicly traded sovereign or corporate debt obligations of developing nations.

Real Estate Investments

Open end real estate investments are pooled investments that own and operate commercial property. Returns are generated from income and price appreciation. These funds have perpetual life, and periodically accept contributions or honor redemptions.

Closed end real estate investments consist of pooled funds to own and operate commercial property. These funds have a finite life, and funds are returned as investments are liquidated.

Alternative Investments

Private equity utilizes a fund of funds approach to make investments in venture capital, buyouts, and other corporate finance transactions.

Energy investments are a diversified portfolio of energy assets, including interests in oil, natural gas, power generation, and renewables.

Timber investments are made in both domestic and international timberland. Returns are generated through the acquisition, management, harvesting, and sale of timber.

Financial Section

Notes to Financial Statements

Note 7 DEPOSITS AND INVESTMENTS (continued)

Absolute Return Investments

A hedge fund of funds is used to generate returns that are higher than core fixed income, with significantly lower risk than public equities. A multi strategy approach is used to improve consistency of returns while limiting downside risk.

A portion of the Plan's fixed income assets are exposed to risks, including credit risk, concentration of credit risk, interest rate risk, and foreign currency risk, that have the potential to result in losses.

Credit Risk

To mitigate the risk that issuers or other counterparties to an investment will not fulfill their obligations, the Plan manages credit risk through the constraints on investments specified in each manager's investment guidelines included in the Plan's Investment Policy. Securities implicitly guaranteed by the U.S. Government are included.

The following table provides information regarding Standard & Poor's (S&P) and Moody's credit ratings associated with the Plan's investment in debt securities as of December 31, 2016:

S&P	Moody's	Asset Backed	Corporate	Non-U.S. Government Bonds	Mortgage Backed	Implicit U.S. Agency Securities	Total
AAA	Aaa	\$ 298,337	\$ 16,402,207	\$ -	\$ 18,909,511	\$ 2,077,365	\$ 37,687,420
AAA	NR	-	-	-	531,360	-	531,360
AA+ to AA-	Aa3 to A1	19,864	3,103,536	-	1,259,034	59,075,584	63,458,018
A+ to A-	A1 to Baa2	45,536	9,270,450	15,499,053	2,886,174	-	27,701,213
BBB+ to BBB-	A3 to Baa3	57,109	7,406,362	13,805,879	3,619,722	-	24,889,072
BB+ to BB-	Ba3 to B1	-	-	10,140,437	-	-	10,140,437
B+ to B-	B1 to Caa1	-	-	106,986	-	-	106,986
CCC+ to CCC-	B3 to Caa2	85,018	-	-	-	-	85,018
D	NR	-	-	-	-	-	-
NR	Aaa to Baa2	-	-	-	483,447	-	483,447
NR	NR	-	174,905,719	11,861,335	-	-	186,767,054
		<u>\$ 505,864</u>	<u>\$ 211,088,274</u>	<u>\$ 51,413,690</u>	<u>\$ 27,689,248</u>	<u>\$ 61,152,949</u>	<u>\$ 351,850,025</u>
U.S. Treasury Securities							68,433,978
Explicit U.S. Agency Securities							144,615
Total							<u>\$ 420,428,618</u>

Concentration of Credit Risk

The Plan is potentially exposed to credit risk concentrations from a single issuer. Certain fixed income managers are constrained in concentration of credit exposure. As of December 31, 2016, the Plan had no exposure to any single issuer exceeding 1% of total plan assets.

Custodial Credit Risk

In the event of a failure of a financial institution or counterparty, custodial credit risk is the risk that the Plan would not be able to recover its deposits, investments, or collateral securities in the possession of an outside party. The Plan has no formal policy for custodial credit risk for deposits and investments. At December 31, 2016, the Plan did not have any deposits, investments, or collateral securities subject to custodial credit risk.

Financial Section

Notes to Financial Statements

Note 7 DEPOSITS AND INVESTMENTS (continued)

Interest Rate Risk

Interest rate risk is the risk that changes in financial market rates of interest will adversely affect the value of an investment. The Plan manages its exposure to changing interest rates by making allocations to variable-rate debt instruments, which have no interest rate sensitivity, and by limiting its target allocation to fixed-rate securities to 14% of the total Plan portfolio. Both allocations are set by the Investment Policy. The Investment Policy further constrains the duration (a measure of interest rate risk) of the fixed-rate allocation to prudent levels. At December 31, 2016, the Plan's fixed income investments had the following maturities by investment type:

Investment Type	Fair Value	Less than 1			More than 10	
		Year	1-5 Years	6-10 Years	Years	
U.S. Treasury securities	\$ 68,433,978	\$ 25,867	\$ 30,959,980	\$ 26,110,722	\$ 11,337,409	
U.S. agency securities	61,297,564	1,662	34,888,912	15,297,844	11,109,146	
Asset backed	505,864	337	170,064	183,278	152,185	
Corporate	211,088,274	183,132	15,664,495	13,521,260	181,719,387	
Non-U.S. Government Bonds	51,413,690	138,814	24,074,240	11,882,750	15,317,886	
Mortgage backed	27,689,248	21,340	10,779,141	11,616,719	5,272,048	
Total	<u>\$ 420,428,618</u>	<u>\$ 371,152</u>	<u>\$ 116,536,832</u>	<u>\$ 78,612,573</u>	<u>\$ 224,908,061</u>	

Financial Section

Notes to Financial Statements

Note 7 DEPOSITS AND INVESTMENTS (continued)

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Plan's Investment Policy allows 18.5% to 30.0% of total investments to be invested in international equities. The Plan's Investment Policy allows 1.5% to 3.5% of total investments to be invested in international fixed income. The following positions represent the Plan's total exposure to foreign currency risk (in U.S. Dollars) as of December 31, 2016:

Foreign Currency	Equities	Fixed Income	Total
Euro	\$ 98,205,705	\$ -	\$ 98,205,705
Japanese Yen	69,754,635	-	69,754,635
British Pound Sterling	52,873,605	-	52,873,605
Chinese Yuan	47,745,929	-	47,745,929
South Korean Won	34,451,397	-	34,451,397
Taiwan Dollar	24,522,641	-	24,522,641
Swiss Franc	19,621,950	-	19,621,950
Australian Dollar	17,658,380	-	17,658,380
Brazilian Real	12,077,090	3,888,718	15,965,808
Indian Rupee	13,247,193	-	13,247,193
South African Rand	10,124,014	2,911,887	13,035,901
Hong Kong Dollar	11,294,660	-	11,294,660
Thai Baht	7,639,052	3,507,289	11,146,341
Canadian Dollar	10,536,159	-	10,536,159
Indonesian Rupiah	4,965,504	4,228,283	9,193,787
Swedish Krona	7,900,015	-	7,900,015
Malaysian Ringgit	3,596,920	3,935,234	7,532,154
Russian Ruble	5,509,429	1,995,526	7,504,955
Mexican Peso	3,807,471	3,474,728	7,282,199
Turkish Lira	3,789,925	3,386,348	7,176,273
Polish Zloty	1,666,865	4,665,531	6,332,396
Singapore Dollar	5,666,915	-	5,666,915
Danish Krone	3,994,910	-	3,994,910
Hungarian Forint	1,368,584	2,386,259	3,754,843
Norwegian Krone	3,394,902	-	3,394,902
Columbian Peso	543,925	2,767,688	3,311,613
New Israeli Shekel	2,951,301	-	2,951,301
New Zealand Dollar	1,656,753	-	1,656,753
United Arab Emirati Dirham	1,491,406	-	1,491,406
Romanian Leu	-	1,414,079	1,414,079
Chilean Peso	1,280,854	-	1,280,854
Peru Sole	-	962,876	962,876
Philippine Peso	666,746	190,715	857,461
Czech Koruna	666,746	-	666,746
Qatari Riyal	649,200	-	649,200
Egyptian Pound	245,643	-	245,643
Argentine Peso	-	181,411	181,411
Other	404,020	-	404,020
Total	<u>\$ 485,970,444</u>	<u>\$ 39,896,572</u>	<u>\$ 525,867,016</u>

Financial Section

Notes to Financial Statements

Note 8 Securities Lending Transactions

The *Investment Policy* permits the Plan to participate in a securities lending program to augment income. The program is administered by the Plan's custodial agent bank, which lends certain securities for a predetermined period of time, to an independent broker/dealer (borrower) in exchange for collateral. Collateral may be cash, U.S. government securities, or other collateral approved by the Plan. Loans of domestic securities are initially collateralized at 102% of the fair value of securities lent. Loans of international securities are initially collateralized at 105% of the fair value of securities lent. The custodial agent bank determines daily that collateral margins are sufficiently maintained. The Plan continues to receive interest and dividends during the loan period. There are no restrictions on the amount of securities that can be lent at one time. At December 31, 2016, the fair value of underlying securities lent was \$224,845,504. The fair value of associated collateral was \$231,774,218; of this amount, \$176,973,420 represents the fair value of cash collateral as reported on the financial statements and \$54,800,798 is the fair value of non-cash collateral not reported on the financial statements. The Plan has no credit risk exposure at December 31, 2016, since the collateral held exceeds the value of securities lent. The custodial agent bank indemnifies the Plan in the event of a collateral shortfall.

The Plan reports securities loaned as assets on the Statement of Plan Net Position. Cash received as collateral on securities lending transactions and investments made with that cash are recorded as an asset and liability. Investments purchased with cash collateral are recorded as Securities Lending Collateral with a corresponding liability as Securities Lending Obligations.

Note 9 Capital Assets

The Plan's capital assets activity for the year ended December 31, 2016, was as follows:

	<u>January 1</u>	<u>Additions</u>	<u>Deletions</u>	<u>December 31</u>
Capital assets, not being depreciated				
Land	\$ 430,041	\$ -	\$ -	\$ 430,041
Capital assets, being depreciated				
Building	1,136,013	-	-	1,136,013
Furniture and equipment	<u>6,322,593</u>	<u>12,201</u>	<u>(52,523)</u>	<u>6,282,271</u>
Total capital assets, being depreciated	7,458,606	12,201	(52,523)	7,418,284
Accumulated depreciation				
Building	(910,884)	(37,522)	-	(948,406)
Furniture and equipment	<u>(2,210,767)</u>	<u>(395,747)</u>	<u>52,347</u>	<u>(2,554,167)</u>
Total accumulated depreciation	<u>(3,121,651)</u>	<u>(433,269)</u>	<u>52,347</u>	<u>(3,502,573)</u>
Total capital assets being depreciated, net	<u>4,336,955</u>	<u>(421,068)</u>	<u>(176)</u>	<u>3,915,711</u>
Capital assets, net	<u>\$ 4,766,996</u>	<u>\$ (421,068)</u>	<u>\$ (176)</u>	<u>\$ 4,345,752</u>

The 2016 depreciation expense for the pension and health benefit accounts was \$406,666 and \$26,603 respectively.

Note 10 Commitments and Contingencies

As of December 31, 2016, the Plan had commitments for the future purchase of investments in private debt of \$61,582,551, real estate of \$19,890,556, and alternative investments of \$204,330,855. The purpose of such commitments is to assist the Plan in maintaining the designated level of exposure to these asset classes. The anticipated pace of funding the commitments coincides with the expected distribution rate of invested assets.

Notes to Financial Statements

Note 11 Net Pension Liability of Employers

The components of the net pension liability of the employers at December 31, 2016, were as follows:

Total pension liability	\$3,231,073,099
Plan fiduciary net position	<u>2,011,665,398</u>
Net pension liability	<u>\$1,219,407,701</u>
Plan fiduciary net position as a percentage of the total pension liability	62.26%

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of January 1, 2016 with a measurement date of December 31, 2016, using the following actuarial assumptions, applied to all prior periods included in the measurement:

Inflation		2.75%
Salary Increases	3.25% to 7.25%	
Investment Rate of Return		7.75%

The mortality tables were based on the RP-2000 Combined Mortality Table for Males and Females, as appropriate, with adjustments for mortality improvements based on Scale AA. The Disabled mortality tables were based on the RP-2000 Disabled Life Mortality Table for Males and Females, as appropriate, with adjustments for mortality improvements based on Scale AA.

The actuarial assumptions used in the January 1, 2016 valuation were based on the results of an actuarial experience study as of January 1, 2013.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return were adopted by the Plan's trustees after considering input from the Plan's investment consultant and actuary. For each major asset class that is included in the pension plan's target asset allocation as of December 31, 2016 these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
US Equities	22.50%	5.70%
Non-US Developed Markets	15.50%	6.70%
Emerging Markets	8.00%	11.60%
Total Public Equity	46.00%	
Core Fixed Income	11.50%	1.00%
Debt	2.50%	5.50%
Private Debt	6.50%	7.50%
Total Fixed Income	20.50%	
Real Estate	8.00%	6.00%
Absolute Return	5.00%	3.10%
Energy MLP's	7.00%	9.00%
Private Equity/Other	13.50%	8.90%
Cash	<u>0.00%</u>	0.30%
Total	<u><u>100.00%</u></u>	

Financial Section

Notes to Financial Statements

Note 11 Net Pension Liability of Employers (continued)

A single discount rate of 7.75% 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 7.75%. The projection of cash flows used to determine this single rate assumed that plan member and employer contributions will be made at the current contribution 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.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the Plan's net pension liability, calculated using a single discount rate of 7.75%, as well as what the Plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage point lower or 1-percentage point higher:

	1% Decrease	Current Single Discount Rate Assumption	1% Increase
	6.75%	7.75%	8.75%
Net Pension Liability	\$1,555,350,350	\$1,219,407,701	\$933,909,411

Note 12 Other Post Employment Benefit Plan – Implicit Rate Subsidy

Employees of the Plan, along with a portion of the employees of DHHA (those employed prior to 2001 who have elected to remain members of the Plan), and a majority of the employees of the City (certain fire and police personnel are excluded), are participants in the City's health care plan. For active employees participating in the City's health care plan, the employers pay a certain percentage of monthly premiums and the employees pay the remainder of the premium. Vested retired employees participating in the City's health care plan pay 100% of the premium and are eligible for an insurance premium reduction payment from the Plan, see Note 1. In establishing premiums, the active and retired employees from the three employers are grouped together without age-adjustment or differentiation between employers. The premiums are the same for both active and retired employees creating an implicit rate subsidy for the retirees.

The City is acting in a cost-sharing multiple-employer capacity for this other post employment benefit plan. The City's Revised Municipal Code, Section 18-412, authorizes the Plan retirees to participate in the health insurance programs offered to the active employees. To be eligible, a retiree must be a minimum of 55 years of age if hired prior to July 1, 2011, and a minimum of 60 years of age if hired after July 1, 2011, with 5 years of service and have begun receiving their pension benefit. Coverage ceases when one reaches Medicare eligibility. For purposes of calculating the implicit rate subsidy, it was estimated there were 1,338 retirees not yet covered by Medicare who were covered by the health insurance programs. There is no stand-alone report for this plan and it is not included in the City's financial statements. The City's required contribution toward the implicit rate subsidy is based on pay-as-you-go financing. Contributions made by DERP toward the implicit rate subsidy were \$12,986, \$16,757, and \$15,445 for the years ended December 31, 2016, 2015 and 2014, respectively, which is 95.0%, 112.5%, and 105.1% of the required contribution for each year ended, based upon pay-as-you-go financing.

A Schedule of Funding Progress and Schedule of Employer Contributions are presented as Required Supplementary Information following the notes to the financial statements. The Schedule of Funding Progress presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits. Both the Schedule of Funding Progress and the Schedule of Employer Contributions present information related to the cost-sharing plan as a whole, of which the

Financial Section

Notes to Financial Statements

Note 12 Other Post Employment Benefit Plan – Implicit Rate Subsidy (continued)

Plan is one participant, and should provide information helpful for understanding the scale of the information presented relative to the Plan.

Projections and benefits for financial reporting purposes are based on the substantive plan as understood by the plan and the members and included in the types of benefits provided at the time of each valuation and the historic pattern of benefit costs between the employer and the plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with long-term perspective calculations.

For the December 31, 2016, actuarial valuation of the implicit rate subsidy, the entry age normal, level percent of pay, valuation method was used. The actuarial assumptions included a 2.75% general inflation rate, 4.0% investment rate of return, a 3.25% salary increase, and health care cost trend grading from 7.0% decreasing by 0.5% per year to 5.0% thereafter. The amortization period was 30 years, open basis, using a level percentage of pay amortization method. The actuarial valuation of the implicit rate subsidy is performed every two years.

Financial Section

Required Supplementary Information (Unaudited)

Schedule of Changes in Net Pension Liability and Related Ratios (Ultimately 10 Fiscal Years will be displayed)

Fiscal year ending December 31,	2016	2015	2014
Total Pension Liability			
Service Cost (Entry-Age Normal)	\$ 46,577,860	\$ 46,419,739	\$ 42,793,142
Interest on the Total Pension Liability	237,104,293	229,130,437	221,367,921
Benefit Changes	-	-	-
Difference between Expected and Actual Experience	16,967,117	29,122,513	-
Transition to Entry-Age Normal ⁽¹⁾	-	-	140,652,205
Assumption/Method Changes ⁽²⁾	-	73,157,470	-
Benefit Payments	(191,790,600)	(181,827,975)	(171,178,475)
Refunds	(2,751,016)	(2,164,104)	(1,507,554)
Net Change in Total Pension Liability	106,107,654	193,838,080	232,127,239
Total Pension Liability - Beginning	3,124,965,445	2,931,127,365	2,699,000,126
Total Pension Liability - Ending (a)	\$ 3,231,073,099	\$ 3,124,965,445	\$ 2,931,127,365
Plan Fiduciary Net Position			
Employer Contributions	\$ 68,794,871	\$ 67,234,597	\$ 59,941,041
Employee Contributions	48,037,800	46,689,696	39,521,451
Pension Plan Net Investment Income	147,443,477	(35,746,029)	101,595,704
Benefit Payments	(191,790,600)	(181,827,975)	(171,178,475)
Refunds	(2,751,016)	(2,164,104)	(1,507,554)
Pension Plan Administrative Expense	(3,742,451)	(3,785,416)	(3,638,296)
Other Income	-	-	-
Net Change in Plan Fiduciary Net Position	65,992,081	(109,599,231)	24,733,871
Total Fiduciary Net Position - Beginning	1,945,673,317	2,055,272,548	2,030,538,677
Total Fiduciary Net Position - Ending (b)	\$ 2,011,665,398	\$ 1,945,673,317	\$ 2,055,272,548
Net Pension Liability - Ending (a)-(b)	\$ 1,219,407,701	\$ 1,179,292,128	\$ 875,854,817
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	62.26%	62.26%	70.12%
Covered Employee Payroll	\$586,819,180	\$568,562,500	\$540,229,189
Net Pension Liability as a Percentage of Covered Employee Payroll	207.80%	207.42%	162.13%
GASB Covered Employee Payroll	\$563,316,210	\$545,955,845	\$519,003,905
Net Pension Liability as a Percentage of GASB Covered Employee Payroll	216.47%	216.01%	168.76%

⁽¹⁾ Transition liability is the additional liability due to the transition from the Projected Unit Credit to Entry-Age Normal actuarial cost method.

⁽²⁾ As of October 1, 2015, the valuation interest rate was lowered from 8% to 7.75%.

Financial Section

Required Supplementary Information (Unaudited)

Schedule of the Net Pension Liability (Ultimately 10 Fiscal Years will be displayed)

Fiscal Year Ending December 31,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll	GASB Covered Payroll	Net Pension Liability as a % of GASB Covered Payroll
2014	\$2,931,127,365	\$2,055,272,548	\$875,854,817	70.12%	\$540,229,189	162.13%	\$519,003,905	168.76%
2015	\$3,124,965,445	\$1,945,673,317	\$1,179,292,128	62.26%	\$568,562,500	207.42%	\$545,955,845	216.01%
2016	\$3,231,073,099	\$2,011,665,398	\$1,219,407,701	62.26%	\$586,819,180	207.80%	\$563,316,210	216.47%

Financial Section

Required Supplementary Information (Unaudited)

Schedule of Employer Contributions

Fiscal Year Ending December 31,	Actuarially Determined Contributions (a)	Actual Contributions (b)	Contribution Deficiency (Excess) (a)-(b)	Covered Payroll (c)	Actual Contribution as a % of Covered Payroll (b)/(c)
2007	\$39,623,830	\$40,955,026	(\$1,331,196)	\$499,462,875	8.20%
2008	41,699,683	44,362,545	(2,662,862)	545,835,393	8.13%
2009	54,392,610	43,127,064	11,265,546	564,986,660	7.63%
2010	48,995,846	42,228,203	6,767,643	506,045,186	8.34%
2011	52,000,472	45,703,351	6,297,121	517,398,105	8.83%
2012	56,054,792	49,756,639	6,298,153	517,396,257	9.62%
2013	55,397,564	56,427,308	(1,029,744)	531,559,017	10.62%
2014	55,871,677	59,941,041	(4,069,364)	540,229,189	11.10%
2015	59,811,786	67,234,597	(7,422,811)	568,562,500	11.83%
2016	66,135,502	68,794,871	(2,659,369)	586,819,180	11.72%

Notes to Schedule of Contributions

Valuation Date: January 1, 2016
Notes: Actuarially determined contribution rates are calculated as of December 31 of each year and are applicable for the following calendar (fiscal) year.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level Percentage of Payroll, Annually Established 30-Year Closed Bases
Remaining Amortization Period	Approximately 27 Years
Asset Valuation Method	Smoothed market
Inflation	2.75%
Salary Increases	3.25% to 7.25%
Investment Rate of Return	7.75%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2013 valuation pursuant to an experience study of the period 2008-2012.
Mortality	RP-2000 Combined Mortality Table Projected Via Scale AA to 2020, with Multipliers Specific to Gender and Payment Status of Employee.

Other Information:

Notes: There were no benefit changes during the year.
As of October 1, 2015, the valuation interest rate was lowered from 8% to 7.75%.
The latest experience study was conducted in 2013 covering the 5-year period of January 1, 2008 to December 31, 2012. At the time, the recommended mortality table was expected to produce a margin of 8% on the retired male mortality experience and 7% on the retired female experience (Source: Denver Employees Retirement Plan 2013 Actuarial Experience Study for the period ending December 31, 2012, Page 24, 25).

Financial Section

Required Supplementary Information (Unaudited)

Schedule of Investment Returns Last 10 Fiscal Years

Fiscal Year Ending December 31,	Annual Return ⁽¹⁾
2007	11.16%
2008	(24.85%)
2009	13.30%
2010	14.04%
2011	(0.30%)
2012	13.09%
2013	18.18%
2014	5.41%
2015	(1.78%)
2016	7.70%

(1) Annual money-weighted rate of return, net of Investment expenses

Note: The calculation of money-weighted returns is provided as an alternative to the more traditional time-weighted calculation of return which appears elsewhere in this document. Money-weighted methodology takes into consideration the amount and timing of cash flows in determining a net amount invested in each period. Since the net amount invested in the DERP investment portfolio does not fluctuate greatly, there is little difference in the results provided by the two methodologies, particularly over longer periods.

Financial Section

Required Supplementary Information (Unaudited)

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Projected Unit Credit (b)	Unfunded AAL (Funding Excess) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	Unfunded AAL (Funding Excess) as a Percentage of Covered Payroll (b-a)/(c)
Health Benefits						
1/1/11	\$87,609,491	\$143,112,474	\$55,502,983	61.2%	\$517,398,105	10.7%
1/1/12	84,679,890	142,966,927	58,287,037	59.2	517,396,257	11.3
1/1/13	82,992,647	148,886,318	65,893,671	55.7	531,559,017	12.4
1/1/14	82,736,993	149,782,074	67,045,081	55.2	540,229,189	12.4
1/1/15	82,194,505	152,922,281	70,727,776	53.7	568,562,500	12.4
1/1/16	80,383,172	153,254,546	72,871,374	52.5	586,819,180	12.4
Implicit Rate Subsidy						
12/31/14	\$0	\$73,738,477	\$73,738,477	0.0%	\$487,407,934	15.1%
12/31/15	0	73,494,705	73,494,705	0.0	503,248,691	14.6
12/31/16	0	73,738,477	73,738,477	0.0	487,407,934	15.1

Financial Section

Required Supplementary Information (Unaudited)

Schedule of Employer Contributions

Year beginning January 1	Annual actuarially required contribution	Percentage contributed
Health Benefits ^{(1) (2)}		
2011 ⁽³⁾	\$4,965,060	84.6
2012 ⁽⁴⁾	5,153,185	82.3
2013 ⁽⁵⁾	4,721,761	87.6
2014 ⁽⁶⁾	4,093,763	105.8
2015 ⁽⁷⁾	4,322,064	101.3
2016	4,253,678	102.6
Implicit Rate Subsidy		
2014	\$4,987,182	105.0
2015	5,048,374	112.5
2016	5,479,721	95.0

(1) Employers made contributions based on the legally required rates.

(2) Excludes DHHA supplemental.

(3) Beginning on January 1, 2011, the employers and employees contributed 9.5% and 5.5%, respectively.

(4) Beginning on January 1, 2012, the employers and employees contributed 10.25% and 6.25%, respectively.

(5) Beginning on January 1, 2013, the employers and employees contributed 11.00% and 7.00%, respectively and amortization method changed from level dollar 30-year open to level percent of pay 30-year closed.

(6) Beginning on January 1, 2014, the employers and employees contributed 11.20% and 7.30%, respectively.

(7) Beginning on January 1, 2015, the employers and employees contributed 11.50% and 8.00%, respectively.

Financial Section

Supporting Schedules

Schedule of Administrative Expenses Year ended December 31, 2016

Personnel services:	
Salaries	\$ 1,660,767
Employee benefits	527,857
Total personnel services	<u>2,188,624</u>
Professional services:	
Actuarial	76,731
Retirement board	20,727
Audit	62,000
Consultation	7,005
Total professional services	<u>166,463</u>
Office operations:	
Plan insurance	101,020
Postage	45,292
Office forms and printing	19,415
Office equipment	25,612
Employee travel and conferences	10,602
Telephone	17,002
Membership education	12,018
Miscellaneous operating	10,164
Employee education	20,895
Office supplies	5,885
Publications	2,382
Automobile	27,025
Total office operations	<u>297,312</u>
Computer operations:	
Software licenses and hosting fees	581,179
Supplies and other expenses	9,940
Total computer operations	<u>591,119</u>
Miscellaneous administrative expenses:	
Building operations	199,176
Depreciation expense	433,268
Total miscellaneous administrative expenses	<u>632,444</u>
Total	<u><u>\$ 3,875,962</u></u>

Financial Section

Supporting Schedules

Schedule of Investment Expenses Year ended December 31, 2016

Alternative investment portfolio management	\$ 4,319,946
International equity portfolio management	2,602,097
Domestic equity portfolio management	2,387,052
Fixed income portfolio management	2,150,139
Real estate portfolio management	1,932,046
Absolute return investment portfolio management	944,736
Other investment related expenses	785,782
Custody	<u>107,884</u>
Total	<u><u>\$ 15,229,682</u></u>

This Page Intentionally Left Blank

Investment Section



Summit *Strategies Group*

May 19, 2017

Steven E. Hutt
Executive Director
Denver Employees Retirement Plan
777 Pearl Street
Denver, Colorado 80203

Dear Mr. Hutt:

This letter reviews the performance for the Denver Employees Retirement Plan (DERP) through December 31, 2016.

The DERP investment portfolio posted a return of 8.33% gross of fees in the fiscal year ended December 31, 2016. Performance fell short of DERP's strategic policy benchmark return of 9.56%, but exceeded the 7.84% median return of the BNY Mellon Public Fund Universe Greater than \$1 Billion. As a result, DERP's one-year performance ranked in the 29th percentile of the Public Fund Universe. The best performing asset classes in the DERP investment portfolio were energy investments (up 21.46%), emerging markets equities (up 18.62%), and master limited partnerships (up 15.70%). The worst performing asset classes were absolute return (down -0.07%) and core fixed income (up 2.03%).

Over the trailing 5 years ended 12/31/16, the Plan achieved an annualized return of 8.87%, outperforming the strategic policy benchmark return of 8.32% and ranking in the 30th percentile of the Public Fund Universe Greater than \$1 Billion, outperforming 70% of other similar funds. The trailing 7-year return currently stands at 8.38%, outperforming the strategic policy benchmark return of 8.00% and ranking in the 31st percentile of the Universe. DERP's trailing 10-year annualized return is 5.26%, better than the 4.82% strategic policy benchmark return and ranking in the 39th percentile of the BNY Mellon Public Fund Universe Greater than \$1 Billion. This consistently favorable percentile ranking is significant.

As DERP's investment consultant, Summit Strategies Group calculates performance statistics utilizing fair values obtained from custodial records or other statements. Performance is determined using a time-weighted calculation methodology. Summit makes comparisons with other public pension plans, evaluates specific portfolio sector performance, and compares portfolio returns to a strategic policy benchmark. The strategic policy benchmark is comprised of a weighted average of the various passive indexes in the same proportions as the DERP investment allocation policy.

It is DERP's goal to seek appropriate returns by the prudent investment of assets. Such investment activities are in accordance with applicable law, modern portfolio theory, and prevailing industry practice, and seek to minimize risk while generating the growth that will assist in paying promised benefits to members and beneficiaries. A study of assets and liabilities is conducted periodically to ensure the mix of investments remains appropriate, and adjustments to the portfolio are made when changes in plan circumstances and/or current capital markets conditions dictate. It is the responsibility of the Retirement Board, with the assistance of Summit Strategies and DERP internal investment staff, to approve a target asset allocation policy, which reflects an appropriate balance between risk and return. A comprehensive study of assets and liabilities was conducted by Summit Strategies most recently in early 2014, and annual asset allocation targets are established in March of each year.

8182 Maryland Avenue, 6th Floor • St. Louis, Missouri 63105 • 314.727.7211, fax 314.727.6068 • ssgstl.com

The target asset allocation at year-end was comprised of the following indices in the percentages as indicated: Russell 1000 (19.00%), Russell 2000 (3.50%), MSCI EAFE (10.00%), MSCI World ex US Small Cap (5.50%), MSCI Emerging Markets (8.00%), Barclays Capital Aggregate Bond (11.50%), Barclays Capital US High Yield Ba/B 2% Issuer Cap (6.50%), JPMorgan Government Bond Index – Emerging Markets (2.50%), NCREIF Fund Index – Open End Diversified Core Equity (8.00%), HFRI FOF Conservative Index (5.00%), Alerian MLP Index (7.00%), and Alternative Investments (13.50%).

In fiscal year 2016, commitments were made to a private equity fund managed by Adams Street Partners, a distressed debt fund managed by Bain Capital, and to a private energy fund managed by Lime Rock Resources.

The DERP investment portfolio earned an attractive return in fiscal year 2016 that exceeded the Plan's assumed rate of return and the median return of the BNY Mellon Public Fund Universe Greater than \$1 Billion, although the return fell short of DERP's strategic policy benchmark return. More importantly, the results over the last 5 years exceed the assumed rate of return, the return of the strategic policy benchmark, and the median Universe return. This reflects the hard work of the Board and Staff during an evolving market environment to position the DERP investment portfolio to benefit the Plan and its members. The future holds many challenges, including slow global economic growth, demographic headwinds, high asset valuations, and increasing political uncertainty. The long-term results are positive, and we believe the portfolio is in a good position to continue to capture consistent, quality results in the years to come.

Sincerely,

A handwritten signature in black ink, appearing to read "Timothy S. Sant". The signature is written in a cursive, flowing style.

Timothy S. Sant, CFA
Principal, Consulting

Mission Statement

The Denver Employees Retirement Plan (the Plan) was established on January 1, 1963, as a defined benefit pension plan. The Plan Board assumes full and absolute responsibility for establishing, implementing, and monitoring adherence to the pension fund policy. The mission of any fiduciary acting with regard to the management, investment, receipt, or expenditure of the trust assets is to act solely in the interest of the members and their beneficiaries, and to:

- (a) Provide benefits to participants and their beneficiaries;
- (b) Pay reasonable expenses associated with the administration of the plan;
- (c) Invest with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent investor acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character with like aims; and
- (d) Diversify the investments so as to minimize the risk of loss and to maximize rate of return.

Investment Responsibilities

The Plan Board is responsible for formulating investment strategies, asset allocation, and contracting with investment management firms and professionals. The Plan Board has formal written objectives and guidelines contained in the Plan's *Investment Policy*, in which asset allocation targets, investment objectives, and investment manager guidelines are specified. Changes to the *Investment Policy* must be approved by the Plan Board.

The investment managers are each responsible for implementing investment strategies in accordance with the stated investment policies, guidelines, and objectives of the Plan. Each manager is responsible for optimizing investment return within its guideline constraints and in the sole interest of the Plan's members and beneficiaries. The Board has directed all investment managers to vote proxies to vote in the interest of the Plan's members and beneficiaries, and to report annually as to how proxies were voted.

Investment Objectives

As outlined in the *Investment Policy*, the investment objectives include:

- (a) Providing a net realized real rate of return meeting or exceeding the actuarial assumption of seven and three quarters percent, annualized, over a full market/economic cycle of three to seven years;
- (b) Maintaining an efficient portfolio determined by the risk and return concepts of Modern Portfolio Theory; and
- (c) Exceeding the rate of return of that achieved by a passively managed portfolio weighted in the same proportion and at the same risk.

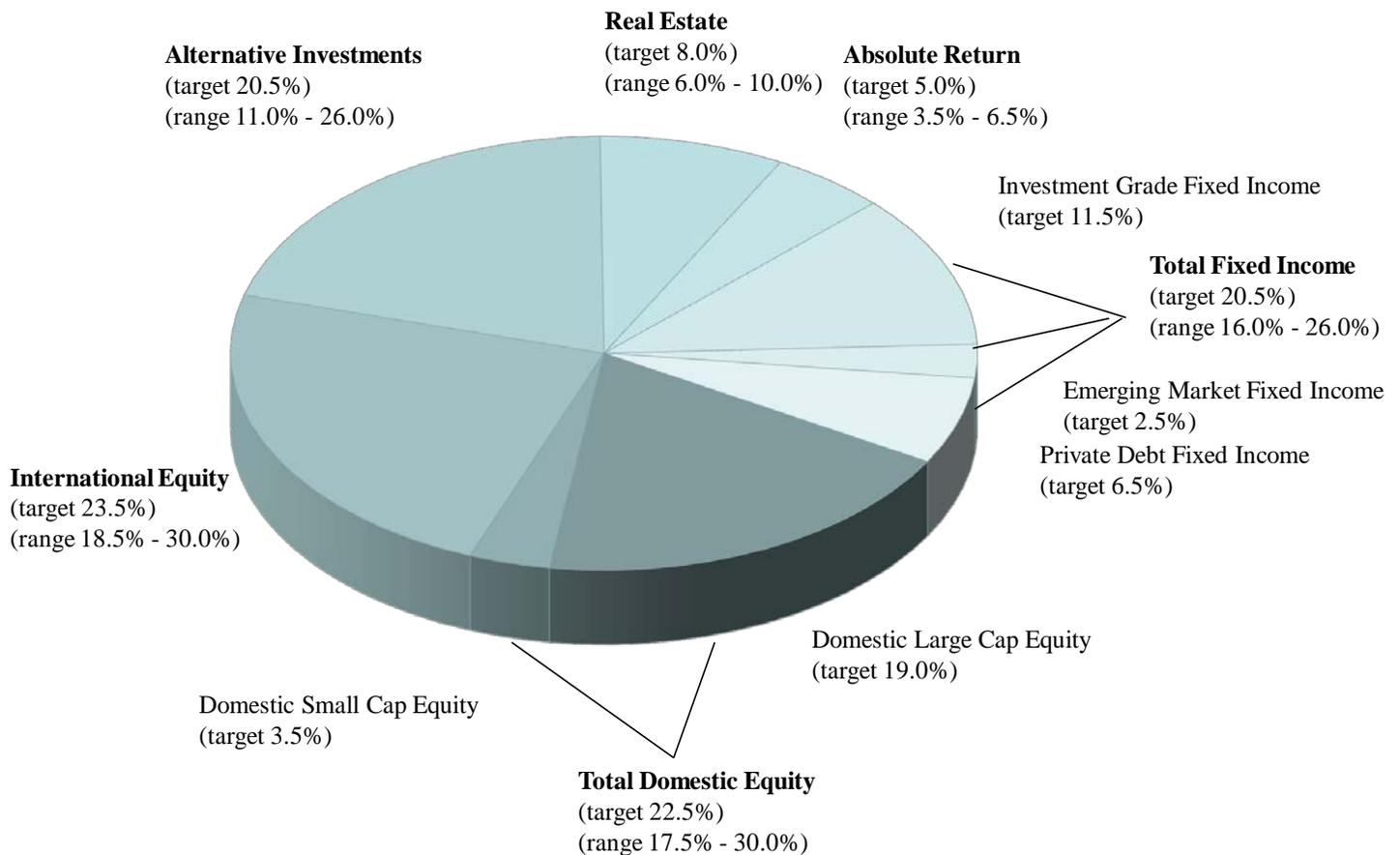
Investment Section

Asset Allocation Target

The Plan Board recognizes that an asset allocation plan has the greatest impact on long-term performance results and is, therefore, the most important decision in the investment process. The risk/return profile is maintained by identifying a long-term target strategic asset allocation. Temporary deviations from the targets are held within ranges.

The first formal asset allocation plan was adopted by the Plan Board in 1989. There have been subsequent asset allocation plans adopted, with the most recent being on April 17, 2016. The Plan's investment consultant assisted the Plan Board in developing the latest asset allocation.

The asset allocation strategy as of December 31, 2016 is depicted in the chart below:

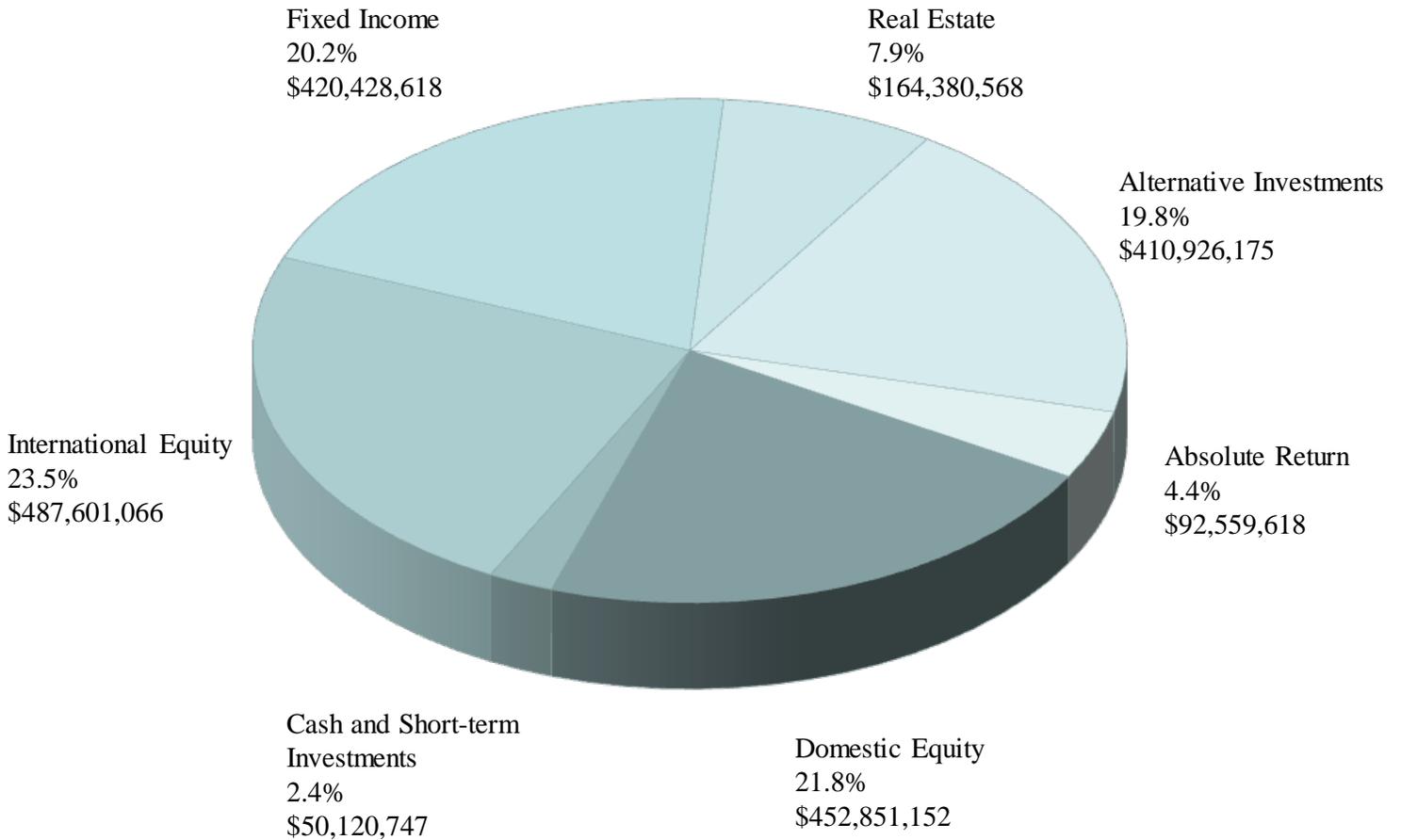


At target, a portfolio so allocated would be expected to achieve a 7.7% return with a standard deviation (risk) of 12.1%.

Investment Section

Asset Allocation by Asset Class

The total Fiduciary Net Position of the Plan on December 31, 2016, was \$2,082,001,911 including cash and investments of \$2,078,867,944. At December 31, 2016, the Plan's investment assets were allocated as shown in the following chart:



Investment Section

Asset Target Allocation by Managed Account

A list of investment managers appears in the introductory section of this report. The Plan's *Investment Policy* identifies the target allocation by managed account and asset style group as follows:

<u>Managed Account</u>	<u>Target Allocation</u>	<u>Asset Style Group</u>	<u>Target Allocation Range</u>
Mellon Capital Management	5.00%	S&P 500 Index	3.00% to 9.00%
Brown Advisory	7.00%	Large Cap Equity (Growth)	5.00% to 9.00%
Eagle Capital Management	7.00%	Large Cap Equity (Value)	5.00% to 9.00%
Franklin Global Advisors	1.25%	Small Cap Equity (Growth)	1.00% to 2.00%
Neuberger Berman, LLC	2.25%	Small Cap Equity (Value)	1.80% to 3.50%
Mellon Capital Management	2.00%	EAFE Index	1.50% to 5.00%
Fidelity Institutional	4.00%	International Equity (Growth)	3.00% to 5.00%
Templeton Investment Counsel, LLC	4.00%	International Equity (Value)	3.00% to 5.00%
Dimensional Fund Advisors	5.50%	International Equity (Small Cap)	4.50% to 7.00%
LSV Asset Management	8.00%	International Equity (Emerging Markets)	6.00% to 10.00%
Plan Staff	5.00%	Fixed Income Government	4.50% to 7.00%
Mellon Capital Management	5.00%	Barclays Aggregate Index	4.50% to 7.00%
Smith Graham & Company	1.50%	Fixed Income Gov't./Credit	1.00% to 2.50%
Golub Capital	2.00%	Fixed Income-Senior Loans	1.00% to 5.00%
Athyrium	1.00%	Fixed Income-Private Debt	0.00% to 2.00%
GSO Capital	1.00%	Fixed Income-Private Debt	0.00% to 2.00%
Bain Capital	2.50%	Fixed Income-Distressed Debt	0.50% to 3.50%
Pictet Asset Management	2.50%	Fixed Income Emerging Market Debt	1.50% to 3.50%
Prisma Capital Partners	5.00%	Absolute Return	3.50% to 6.50%
Real Estate	8.00%	Real Estate	6.00% to 10.00%
Alternative Investments	20.50%	Energy, Timber, MLP, and Private Equity	11.00% to 26.00%

Investment Section

The Plan staff actively monitors each investment manager for compliance with guidelines. There is no allocation to cash. Each manager is directed to prudently remain fully invested in their asset style group. All allocated but uninvested cash is commingled and actively managed by the Plan staff. Investment manager, custodian, and consultant fees are aggressively negotiated and reviewed periodically.

The top ten stock and bond holdings as of December 31, 2016, are shown in the following tables:

Top Ten Stock Holdings December 31, 2016

<u>Shares</u>	<u>Stocks</u>	<u>Fair Value</u>
22,611	Alphabet, Inc.	\$17,629,349
17,895	Amazon.Com, Inc.	13,418,924
75,475	Berkshire Hathaway, Inc.	12,300,915
103,985	Ecolab, Inc.	12,189,122
170,258	Microsoft Corporation	10,579,832
265,500	Oracle Corporation	10,208,475
165,100	Citigroup, Inc.	9,811,893
78,773	AON Corporation	8,785,553
80,053	Visa, Inc.	6,245,735
274,800	Bank of America Corporation	6,073,080

Top Ten Bond Holdings December 31, 2016

<u>Par</u>	<u>Bonds</u>	<u>Fair Value</u>
9,500,000	FHLMC Bond 2.375% due 1/13/2022	\$9,655,895
5,000,000	FNMA Bond 6.250 due 5/15/2029	6,627,550
5,500,000	FHLBC Bond 3.250 due 3/8/2024	5,771,095
5,500,000	U.S. Treasury Note 1.375 due 9/30/2023	5,208,445
5,000,000	U.S. Treasury Note 2.625 due 11/15/2020	5,167,950
5,500,000	FNMA Bond 1.875 due 9/24/2026	5,053,015
4,750,000	FHLMC Bond 3.750 due 3/27/2019	5,003,840
4,500,000	FHLBC Bond 1.625 due 6/14/2019	4,521,825
4,400,000	FHLBC Bond 2.000 due 9/13/2019	4,441,140
3,847,050	U.S. Treasury-CPI 2.375 due 1/15/2025	4,417,221

Complete listings of stock and bond holdings are available at the Plan's office.

Investment Section

Investment Performance

The Plan contracts with Summit Strategies Group to measure investment results on a quarterly basis. Returns are calculated using a time-weighted rate of return based on the fair value of assets. Returns are reported gross of fees unless otherwise stated. The estimated annualized return from the inception of the Plan on January 1, 1963 to December 31, 2016 is 8.92%. Annualized investment results compared with benchmarks for the year ending December 31, 2016, are as follows:

	Last Year	Last 3 Years	Last 5 Years
Domestic Equity	7.55%	6.52%	13.46%
Russell 3000 Index	12.74	8.43	14.67
International Equity	8.27	-0.38	7.15
International Equity Policy Index	5.33	-1.09	5.50
Fixed Income	6.43	2.98	2.85
Fixed Income Policy Index	7.16	2.72	2.59
Real Estate	9.69	13.37	13.45
NCREIF Index	8.77	12.07	12.21
Total Portfolio	8.33	4.21	8.87
Total Fund Policy Index	9.56	4.25	8.32
Total Portfolio (net of fees)	7.75	3.65	8.28
Change in Consumer Price Index (CPI-U)	1.26	1.01	1.34

Investment Section

Schedule of Investment Commissions

December 31, 2016

<u>BROKER</u>	<u>QUANTITY (UNITS)</u>	<u>BROKER COMMISSION</u>	<u>COMMISSION PER/SHARE</u>
MELLON FINANCIAL	1,577,172	\$31,544	\$0.020
JP MORGAN SECURITIES	781,060	12,917	0.017
CITIGROUP	844,571	12,340	0.015
INVESTMENT TECHNOLOGY	1,091,002	10,926	0.010
MERRILL LYNCH	625,472	9,729	0.016
GOLDMAN SACHS & COMPANY	676,939	8,569	0.013
NATIONAL FINANCIAL SERVICES	414,786	7,774	0.019
MORGAN STANLEY	385,459	5,942	0.015
CREDIT SUISSE	416,780	5,934	0.014
WELLS FARGO SECURITIES	385,874	5,763	0.015
UBS SECURITIES	438,118	5,626	0.013
SANFORD C BERNSTEIN	328,688	5,482	0.017
LIQUIDNET	261,059	5,202	0.020
RBC CAPITAL MARKETS	378,837	4,781	0.013
ROBERT W BAIRD & COMPANY	101,823	3,650	0.036
BLOOMBERG TRADEBOOK	157,102	3,142	0.020
WILLIAM BLAIR	88,470	3,126	0.035
BARCLAYS	273,144	3,070	0.011
JEFFERIES & COMPANY	124,816	3,060	0.025
ISI GROUP	339,846	2,855	0.084
DEUTSCHE	140,808	2,653	0.019
PERSHING LLC	638,237	2,612	0.004
STIFEL NICOLAUS	72,570	2,578	0.036
RAYMOND JAMES	61,939	2,201	0.036
ROYAL BANK OF CANADA EUROPE	190,356	1,384	0.007
HSBC SECURITIES	18,620	1,230	0.066
All other brokers (each at \$1,000 or less)	<u>1,605,268</u>	<u>13,095</u>	0.008
TOTAL	<u>12,418,816</u>	<u>\$177,185</u>	\$0.014

Investment Section

Schedule of Investment Fees

December 31, 2016

<u>Externally Managed Portfolios</u>	<u>Assets Under Management</u>	<u>Fees</u>
U.S. Equities:		
Actively Managed :	\$ 352,235,492	\$ 2,352,964
Passively Managed	100,615,660	34,088
International Equities:		
Actively Managed	453,553,776	2,588,879
Passively Managed	34,047,290	13,218
Fixed Income:		
Actively Managed	330,887,026	2,133,857
Passively Managed	89,541,592	16,282
Real Estate:		
Fees netted with earnings	61,998,815	831,569
Fees paid separately	102,381,753	1,100,477
Absolute Return:		
Fees netted with earnings	92,559,618	944,736
Alternative Investments:		
Fees netted with earnings	247,572,698	3,248,144
Fees paid separately	163,353,477	1,071,802
	<u>\$ 2,028,747,197</u>	<u>\$ 14,336,016</u>
 <u>Other Investment Services</u>		
Custody Fees		\$ 107,884
Other investment related expenses		785,782

This Page Intentionally Left Blank

Actuarial Section



Gabriel Roeder Smith & Company
Consultants & Actuaries

7900 East Union Avenue
Suite 1100
Denver, CO 80237-2746

303.217.7600 phone
303.217.7609 fax
www.gabrielroeder.com

June 12, 2017

Board of Trustees
Denver Employees Retirement Plan
777 Pearl St
Denver, CO 80203

Re: Denver Employees Retirement Plan Actuarial Valuation as of January 1, 2016

Dear Board Members:

The results of the January 1, 2016 Annual Actuarial Valuation of the Denver Employees Retirement Plan (DERP) are presented in this report. The purpose of the valuation was to measure the Plan's funding progress and to determine the employer contribution rate, for the next fiscal year.

The valuation was based upon information, furnished by DERP, concerning Plan benefits, financial transactions, active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. These calculations may be subject to certain provisions of the agreement between Denver Health and Hospital Authority (DHHA) and DERP. This letter and these calculations are not intended as legal or accounting advice, and we would recommend review by legal counsel for the compliance of these calculations with all relevant agreements.

The actuarial methods and assumptions used are in compliance with the parameters established by GASB Statements No. 67 and No. 68. For the retiree medical benefits, the schedules illustrate the value of the explicit benefit as described in the Plan Summary, and that explicit benefit is valued in compliance with all the parameters established by GASB Statements No. 43 and 45. The value of any implicit rate subsidy in the City-sponsored health plans will be illustrated in the separate disclosures related to those plans.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events for the Pension Plan, Retiree Medical Plan, and DHHA. We believe that the assumptions and methods used in this report are reasonable and appropriate for the purpose for which they have been used. However, other assumptions and methods could also be reasonable and could result in materially different results. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that are deemed to be immaterial.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

Gabriel Roeder Smith & Company

Board of Trustees
June 12, 2017
Page 2

The following schedules were prepared by GRS:

1. Valuation Methods and Assumptions
2. Analysis of Financial Experience
3. Demographic History
4. Solvency Test
5. Plan Provisions
6. Schedule of Funding Progress
7. Schedule of Employer Contributions

If there is other information that you need in order to make an informed decision regarding the matters discussed in this report, please contact us.

We certify that the information contained in this report is accurate and fairly presents the actuarial position of DERP as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The actuaries submitting this statement are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. Both are experienced in performing valuations for public retirement systems.

Respectfully submitted,



Leslie L. Thompson, FSA, FCA, EA, MAAA
Senior Consultant



Paul T. Wood, ASA, FCA, MAAA
Consultant

Gabriel Roeder Smith & Company

Valuation Methods and Assumptions

Funding Valuation Methods

Actuarial Cost Method for Determination of Actuarially Determined Contribution – The Projected Unit Credit (PUC) Cost Method was used in the valuation.

The Projected Unit Credit Cost Method develops a normal cost and an accrued liability based on the benefit accrued as of the valuation date.

The normal cost is the present value of the benefits that accrue during the year. The benefit accrued during the year is the retirement benefit based on pay projected to a member's retirement date, based on service accrued as of the valuation date. The actuarial accrued liability is the present value of benefits allocated to service prior to the valuation date.

Finally, for all funding methods, the present value of benefits is equal to the accrued liability plus the present value of future normal costs.

Deferred Retirement Option Plan (DROP) and DROP II – The DROPs are closed and no new members are assumed to enter either of the two DROPs. For members who were in DROP and remained employed upon their exit from the DROP program, their accrued liability is calculated as the value of their deferred benefit based on compensation and service earned before their DROP participation plus the value of their additional benefit earned based on compensation and service accrued after their DROP participation ended, as well as their accrued DROP balance. Further detail describing the DROPs can be found in the Plan Provisions section of this report.

Benefits Limited to Maximums Specified in Internal Revenue Code (IRC) – Benefits in pay status are limited to the maximum specified by Section 415 of the IRC, as adjusted annually. The benefits in pay status are based on the IRC maximum compensation permitted by Section 401(a)(17).

Asset Valuation Method

Actuarial Value of Assets – The Actuarial Value of Assets recognizes 20% of the difference between the projected actuarial value and the market value at the valuation date. This method has the effect of smoothing volatility in investment returns. Returns are measured net of administrative and investment expenses.

Actuarial Standards of Practice Statement #44 provides some guidance in the selection of a method for determining the actuarial value of assets. In particular, when considering utilizing an asset method other than the market value of assets, the method should be selected that is designed to produce actuarial values of assets that bear a reasonable relationship to the corresponding market values. The qualities of the DERP asset value method should include:

The actuarial value of assets should sometimes be greater than, and sometimes lesser than, the market value of assets. The method employed in the DERP valuation does produce asset values that are sometimes greater than, and sometimes less than the market value of assets.

The asset values fall within a sufficiently narrow range around the corresponding market values.

Development of Amortization Payment

Determination of UAAL Contribution Rate - The unfunded accrued liability as of January 1, 2016 is calculated as of the beginning of the fiscal year for which employer contributions are being calculated.

The unfunded accrued liability is amortized over the appropriate period to determine the amortization payment. This payment is divided by the projected fiscal year payroll to determine the amortization payment as a percentage of active member payroll.

Effective January 1, 2013, the funding policy for the development of the annual amortization payment was changed from 30-year open to a year-by-year 30-year closed. An amortization base will be established each year and each base will be paid off over 30 years, using annual payments determined as a level percentage of payroll. Each base and full payment schedule is shown in the Appendix.

GASB Statement Nos. 67 and 68 Valuation Cost Method

Actuarial Cost Method for the purposes of satisfying the requirements of GASB Statement Nos. 67 and 68 - Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;
- (ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Valuation Assumptions

The actuarial assumptions used in the valuation are shown in this Section. Both the economic and demographic assumptions were based on an Experience Study performed as of January 1, 2013, and adopted for the January 1, 2013 valuation report. The discount rate was changed effective October 1, 2015, from 8.00% to 7.75%.

Changes to Actuarial Assumptions

Other than the reduction in discount rate effect October 1, 2015, there were no other assumptions or methods changes since the January 1, 2015 valuation.

Valuation Assumptions

Mortality rates were adjusted to include margin for future longevity improvement as described below.

Post-Retirement and Beneficiary Mortality Table: *This table shows the probability of dying after leaving employment either as a vested terminated member, a retiree or a beneficiary of a deceased member.*

- A. Male: RP-2000 Combined Mortality Table for males projected with Scale AA to 2020
- B. Female: RP-2000 Combined Mortality Table for females projected with Scale AA to 2020 with a multiplier of 90%

Ages	% Dying Within Next Year Non-Disabled	
	Men	Women
50	0.15%	0.11%
55	0.25%	0.21%
60	0.49%	0.41%
65	0.96%	0.79%
70	1.64%	1.36%
75	2.85%	2.15%
80	5.26%	3.59%

Disabled Mortality Table: *This table shows the probability of dying at sample attained ages.*

- A. Male: RP-2000 Disabled Life Mortality Table for males projected with Scale AA to 2020
- B. Female: RP-2000 Disabled Life Mortality Table for females projected with Scale AA to 2020

Ages	% Dying Within Next Year Disabled	
	Men	Women
50	2.01%	0.82%
55	2.41%	1.41%
60	3.05%	1.98%
65	3.78%	2.54%
70	4.63%	3.40%
75	6.19%	4.45%
80	8.95%	6.28%

Actuarial Section

Active Mortality: *This table for active members shows the probability of dying before retirement or termination of employment. 15% of the deaths are assumed to be duty-related and 85% are assumed to be non-duty related.*

- A. Male: RP-2000 Combined Mortality Table for males projected with Scale AA to 2020 with a multiplier of 85%
- B. Female: RP-2000 Combined Mortality Table for females projected with Scale AA to 2020 with a multiplier of 85%

Ages	% Dying Within Next Year Non-Disabled	
	Men	Women
20	0.02%	0.01%
25	0.03%	0.01%
30	0.03%	0.02%
35	0.06%	0.03%
40	0.08%	0.04%
45	0.10%	0.07%
50	0.13%	0.10%

Rates of Disability: *15% of the disabilities are assumed to be duty-related and 85% are assumed to be non-duty related.*

Ages	% Becoming Disabled Within Next Year	
	Duty	Non-Duty
20	0.00%	0.02%
25	0.00%	0.02%
30	0.00%	0.02%
35	0.00%	0.03%
40	0.01%	0.06%
45	0.02%	0.11%
50	0.04%	0.23%
55	0.07%	0.37%
60	0.10%	0.57%
65	0.15%	0.85%

Actuarial Section

Rates of Separation from Active Membership: Rates do not apply to members eligible to retire and do not include separation on account of death or disability. For inactive members, the assumed age at retirement is 65. If an inactive member is not vested, the liability valued is equal to their employee contributions plus interest. Rates are not applied after the member is eligible for reduced or unreduced retirement benefits.

Non Hospital			Non Hospital		
Years of Service	Select Period		Ages	Ultimate Rates	
	% of Active Members Separating Within Next Year			% of Active Members Separating Within Next Year*	
	Men	Women		Men	Women
1	15.97%	19.84%	25	6.25%	9.00%
2	13.73%	17.11%	30	5.50%	7.75%
3	11.81%	14.76%	35	4.75%	6.50%
4	10.15%	12.72%	40	4.00%	5.50%
5	8.73%	10.97%	45	3.25%	4.50%
6	7.51%	9.46%	50	2.50%	3.50%
7	6.46%	8.16%	55	1.90%	2.70%
8	5.55%	7.04%	60	1.90%	2.70%
9	4.77%	6.07%	64	1.90%	2.70%

*Members with 10 or more years of service

Hospital		
Ages	% of Active Members Separating Within Next	
	Men	Women
30	14.84%	15.41%
35	12.92%	11.91%
40	10.72%	8.40%
45	7.97%	5.60%
50	4.40%	5.60%
55	1.10%	5.60%
60	1.10%	5.60%
64	1.10%	5.60%

Actuarial Section

Rates of Retirement: *This table for active members shows the probability of eligible members retiring during the next year.*

Non Hospital			Hospital		
Percent of Eligible Active Members Retiring Within Next Year			Percent of Eligible Active Members Retiring Within Next Year		
Ages	Early Retirement	Normal Retirement	Ages	Early Retirement	Normal Retirement
55	2.50%	N/A	55	2.50%	N/A
56	2.75%	N/A	56	2.75%	N/A
57	3.00%	N/A	57	3.00%	N/A
58	3.25%	N/A	58	3.25%	N/A
59	3.50%	N/A	59	3.50%	N/A
60	3.75%	N/A	60	3.75%	N/A
61	4.00%	N/A	61	4.00%	N/A
62	10.00%	N/A	62	10.00%	N/A
63	10.00%	N/A	63	10.00%	N/A
64	10.00%	N/A	64	10.00%	N/A
65	N/A	20.00%	65	N/A	20.00%
66	N/A	18.00%	66	N/A	18.00%
67	N/A	18.00%	67	N/A	18.00%
68	N/A	18.00%	68	N/A	18.00%
69	N/A	18.00%	69	N/A	18.00%
70	N/A	100.00%	70	N/A	18.00%
			71	N/A	18.00%
			72	N/A	18.00%
			73	N/A	18.00%
			74	N/A	18.00%
			75	N/A	100.00%

	Percent of Eligible Active Members Retiring Within Next Year
Ages	Rule of 75 Retirement
NAR*	22.00%
NAR+1	14.00%
NAR+2	14.00%
NAR+3	14.00%
NAR+4	14.00%
NAR+5	14.00%
NAR+6	18.00%
NAR+7	22.00%
NAR+8	26.00%
NAR+9	30.00%
NAR+10	30.00%

* NAR, Normal Age at Retirement, is defined as the first age at which a member is eligible to retire under the Rule of 75 with a minimum age of 55 (or Rule of 85 with a minimum age of 60 if hired after July 1, 2011). After attainment of age 70 (age 75 for the Hospital group) the retirement rate assumption is 100.00%.

Economic Assumptions

1. Investment Return Rate: 7.75% per annum, compounded annually, net of investment and administrative expenses.
2. Cost of Living Increases: 0.00% per annum
3. Inflation Rate: 2.75% per annum
4. Real Rate of Return: 5.00% per annum
5. The Rates of Salary Increase: *Assumed salary increases for active members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.*

Non Hospital			
% Increase in Salary for the Year			
Sample Ages	Merit and Seniority	Base (Economic)*	Increase for the Year
20	4.00%	3.25%	7.25%
25	3.50%	3.25%	6.75%
30	2.50%	3.25%	5.75%
35	2.00%	3.25%	5.25%
40	1.25%	3.25%	4.50%
45	0.50%	3.25%	3.75%
50	0.00%	3.25%	3.25%
55	0.00%	3.25%	3.25%
60	0.00%	3.25%	3.25%
65	0.00%	3.25%	3.25%

Hospital			
% Increase in Salary for the Year			
Sample Ages	Merit and Seniority	Base (Economic)*	Increase for the Year
30	0.00%	3.25%	3.25%
35	0.00%	3.25%	3.25%
40	0.00%	3.25%	3.25%
45	0.00%	3.25%	3.25%
50	0.00%	3.25%	3.25%
55	0.00%	3.25%	3.25%
60	0.00%	3.25%	3.25%
65	0.00%	3.25%	3.25%

**Salary increases shown include wage inflation of 3.25% per annum.*

	Miscellaneous and Technical Assumptions
<i>Administrative & Investment Expenses</i>	The investment return assumption is intended to be the return net of investment and administrative expenses.
<i>Benefit Service</i>	Exact fractional service is used to determine the amount of benefit payable.
<i>COLA</i>	None assumed.
<i>Covered Payroll</i>	Annual payroll projected forward with one year's salary increase.
<i>Death after termination but before Retirement (or Continuation)</i>	A load of 0.7% (1.3% for members hired after July 1, 2011) is added to the vested terminated benefit to account for the benefit paid to the spouse if the participant dies before retirement.
<i>Decrement Operation</i>	All decrements other than withdrawal are in force during retirement eligibility.
<i>Decrement Timing</i>	Decrements of all types are assumed to occur mid-year.
<i>Eligibility Testing</i>	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.
<i>Incidence of Contributions</i>	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.
<i>Marriage Assumption</i>	75% of males and 60% of females are assumed to be married for purposes of death-in-service benefits and 75% of males and 60% of females are assumed to be married for purposes of retiree medical benefits. Male spouses are assumed to be the same age as female spouses for active member valuation purposes.
<i>Normal Form of Benefit</i>	A straight life annuity is the normal form of benefit.
<i>Pay Increase Timing</i>	Beginning of year. This is equivalent to assuming that reported pays represent annualized rates of pay on the valuation date.
<i>Service Credit Accruals</i>	It is assumed that members accrue one year of service credit per year.
<i>Split of Member and Employer Contributions</i>	For the Schedule of Employer Contributions the member and employer contributions are split between the pension and medical funds based on their respective ratios to the Total Computed Contribution Rate developed in the previous year's actuarial valuation.

Terminal Pay

For members hired prior to January 1, 2010, unused sick and vacation hours are converted into pay at retirement, death, disability or termination. That converted amount is included in the Final Average Compensation (FAC). The valuation accounts for this by assuming the FAC will be increased by 5.00% for active retirement benefits and increased by 2.25% for active ordinary death and termination benefits for members hired prior to January 1, 2010.

Retiree Medical Election Percentage

It is assumed that 85% of members who retire elect medical benefits, 30% of members who terminate elect medical benefits, 80% of beneficiaries elect medical benefits, and 80% of members who leave as disabled members elect retiree medical benefits.

Actuarial Section

Denver Employees Retirement Plan

Schedule 2

Analysis of Financial Experience Composite Gain (Loss) for the Years Ending December 31, 2011 through 2015

Type of Activity:	Retirement Benefits				
	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>
1. Retirement, Disability, Death, Withdrawal, Pay Increases, etc.	\$ (12,616,600)	\$ (27,660,900)	\$ (1,477,800)	\$ (2,989,900)	\$ (5,824,600)
2. New Entrants	(2,768,100)	(2,376,500)	(2,101,900)	(1,564,900)	(1,165,700)
3. Investment Income	<u>(55,770,203)</u>	<u>(19,188,065)</u>	<u>(9,038,647)</u>	<u>(49,642,700)</u>	<u>(77,418,800)</u>
Gain (Loss)	(71,154,903)	(49,225,465)	(12,618,347)	(54,197,500)	(84,409,100)
Non-recurring Items:					
Changes in Actuarial Assumptions and Methods	-	(70,052,165)	-	(114,153,600)	(7,044,100)
Changes in Plan Provisions	<u>-</u>	<u>(208,300)</u>	<u>(2,622,800)</u>	<u>(87,200)</u>	<u>(72,500)</u>
Total Non-recurring Items	<u>-</u>	<u>(70,260,465)</u>	<u>(2,622,800)</u>	<u>(114,240,800)</u>	<u>(7,116,600)</u>
Composite Gain (Loss) During Year	<u>\$ (71,154,903)</u>	<u>\$ (119,485,930)</u>	<u>\$ (15,241,147)</u>	<u>\$ (168,438,300)</u>	<u>\$ (91,525,700)</u>

Type of Activity:	Health Benefits				
	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>
1. Retirement, Disability, Death, Withdrawal, Pay Increases, etc.	\$ 905,900	\$ 1,568,200	\$ 781,300	\$ 693,700	\$ 1,324,000
2. New Entrants	(131,700)	(84,500)	(106,800)	(57,600)	(59,200)
3. Investment Income	<u>(2,389,228)</u>	<u>(1,084,695)</u>	<u>(759,107)</u>	<u>(2,432,700)</u>	<u>(3,670,600)</u>
Gain (Loss)	(1,615,028)	399,005	(84,607)	(1,796,600)	(2,405,800)
Non-recurring Items:					
Changes in Actuarial Assumptions and Methods	-	(3,350,257)	-	(5,489,000)	-
Changes in Plan Provisions	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total Non-recurring Items	<u>-</u>	<u>(3,350,257)</u>	<u>-</u>	<u>(5,489,000)</u>	<u>-</u>
Composite Gain (Loss) During Year	<u>\$ (1,615,028)</u>	<u>\$ (2,951,252)</u>	<u>\$ (84,607)</u>	<u>\$ (7,285,600)</u>	<u>\$ (2,405,800)</u>

Demographic History

Schedule of Retirees, Disableds and Beneficiaries

Valuation Date	Number Added Since Last Valuation Date	Allowances for Additional Retirees and Beneficiaries	Number Removed Since Last Valuation Date	Allowances for Retirees and Beneficiaries Removed	Pension Benefit Amount	Average Annual Benefit	Percent Increase in Average Benefit	
				Number				
1/1/10	733	\$17,229,892	183	\$1,847,244	7,423	\$124,695,435	\$16,799	5.7%
1/1/11	410	7,484,590	227	2,827,899	7,606	130,319,793	17,134	2.0
1/1/12	457	9,392,512	287	2,922,903	7,776	138,317,723	17,788	3.8
1/1/13	540	11,227,434	271	2,973,325	8,045	146,837,873	18,252	2.6
1/1/14	658	15,872,322	221	3,126,984	8,482	159,503,726	18,805	3.0
1/1/15	597	13,833,209	264	4,026,993	8,815	169,735,929	19,255	2.4
1/1/16	560	12,947,276	301	3,846,224	9,074	179,304,283	19,760	2.6

Schedule of Active Members*

Valuation Date	Number	Annual Payroll	Average Annual Earnings	Percent Increase in Average Earnings
1/1/10	8,604	\$506,045,186	\$58,815	(2.9%)
1/1/11	8,403	517,398,105	61,573	4.7
1/1/12	8,149	517,396,257	63,492	3.1
1/1/13	8,175	531,559,017	65,023	2.4
1/1/14	8,304	540,229,189	65,057	0.1
1/1/15	8,489	568,562,500	66,976	3.0
1/1/16	8,636	586,819,180	67,950	1.5

*This schedule does not include participants in DROP and DROP II.

Actuarial Section

Solvency Test Pension Benefits

Valuation Date	Actuarial Accrued Liabilities				Valuation Assets	Portion of Accrued Liabilities Covered by Valuation Assets		
	(1)	(2)	(3)			(1)	(2)	(3)
	Retirees and Beneficiaries	Terminated Vested Members	Active Members					
1/1/11	\$1,341,928,443	\$129,821,083	\$813,006,592	(a)	\$1,942,871,295	100%	100%	58%
1/1/12	1,412,766,986	154,615,776	819,147,309	(b)	1,946,844,159	100	100	46
1/1/13	1,520,343,891	156,404,385	916,442,060	(c)	1,980,204,173	100	100	33
1/1/14	1,639,107,535	154,017,183	905,875,408	(d)	2,062,322,953	100	100	30
1/1/15	1,765,776,526	173,010,460	954,881,366	(e)	2,132,024,635	100	100	20
1/1/16	1,853,396,257	185,528,934	964,664,618	(f)	2,168,754,097	100	100	13

- (a) Includes DROP accounts of \$98,884,382.
- (b) Includes DROP accounts of \$101,400,591.
- (c) Includes DROP accounts of \$105,677,036.
- (d) Includes DROP accounts of \$107,943,569.
- (e) Includes DROP accounts of \$110,654,947.
- (f) Includes DROP accounts of \$113,006,463.

A short-term solvency test is one means of checking a plan's progress under its funding program. In a short-term solvency test, a plan's assets are compared with the accrued liabilities of the plan. The liabilities are ranked, with (1) representing the liabilities of present retired lives, (2) terminated vested members liabilities, and (3), the liabilities for service already rendered by active members. For DERP pension benefits, the liabilities for the retired members and the terminated vested members are fully covered by the valuation assets, and the liabilities for service already rendered by active members is partially covered by the remainder of the valuation assets.

Health Benefits*

Valuation Date	Actuarial Accrued Liabilities				Valuation Assets	Portion of Accrued Liabilities Covered by Valuation Assets		
	(1)	(2)	(3)			(1)	(2)	(3)
	Retirees and Beneficiaries	Terminated Vested Members	Active Members					
1/1/11	\$94,937,728	\$7,310,323	\$40,864,423		\$87,609,491	92%	0%	0%
1/1/12	94,007,699	8,530,269	40,428,959		84,679,890	90	0	0
1/1/13	95,955,842	8,393,768	44,536,708		82,992,647	86	0	0
1/1/14	98,236,724	8,277,021	43,268,329		82,736,993	84	0	0
1/1/15	100,367,730	8,614,343	43,940,208		82,194,505	82	0	0
1/1/16	101,392,643	8,845,835	43,016,068		80,383,172	79	0	0

* These liabilities represent solely the value of the explicit benefit, without regard to the implicit rate subsidy and therefore are not compliant with GASB #45.

A short-term solvency test is one means of checking a plan's progress under its funding program. In a short-term solvency test, a plan's assets are compared with the accrued liabilities of the plan. The liabilities are ranked, with (1) representing the liabilities of present retired lives, (2) terminated vested members liabilities, and (3), the liabilities for service already rendered by active members. For DERP health benefits, the liabilities for the retired members is partially covered by the valuation assets, and the liabilities for terminated vested members and for service already rendered by active members is not covered by any valuation assets.

Plan Provisions

- A. Ordinances** Amended and Restated under Denver Municipal Code Section 18-391 through 18-430.7. Most recently amended under Ordinance No. 15-0591, adopted September 2015.
- B. Effective Date** January 1, 1963
- C. Plan Year** January 1 through December 31
- D. Type of Plan** Qualified, 401(a) governmental defined benefit retirement plan; for GASB purposes it is a multi-employer cost sharing plan.
- E. Eligibility Requirements** Elected Officials, Appointed Officials, and Employees as defined in Denver Municipal Code Sections 18-402 and 18-406.
- F. Credited Service** Service measured in completed calendar months from date of employment to date of retirement or prior termination.
- G. Compensation** *Gross pay, compensation and salary* shall mean that amount of remuneration, including wages, salaries, other amounts received for personal services actually rendered in the course of employment with the employer, and other amounts actually included or that could be included in gross income of and due to an employee, including employees on disability leave as provided for in division 4 of article V of chapter 18 of the Denver Municipal Code, or otherwise, from the employer in the full amount as calculated before any reductions or deductions are made for any purpose, including reductions or deductions by reason of sections 125, 132(f)(4) or 457 of the Internal Revenue Code, but not including distributions made from a plan of the employer designed to be eligible under section 457. Employer provided fringe benefits receiving special tax benefits, such as premiums for group term life insurance (to the extent excludible from gross income), shall be excluded from the definition of compensation. The calendar year shall be the limitation year (determination period) for purposes of section 415 of the Internal Revenue Code.
- H. Final Average Compensation (FAC)** Average monthly rate of compensation during the highest 36 successive calendar months of covered service.
- I. Normal Retirement**
1. Eligibility: For employees hired prior to July 1, 2011, attainment of age 65, or attainment of age 55 with age plus credited service equal to 75. For Employees hired July 1, 2011 or after, attainment of age 65 with 5 years of service, or attainment of age 60 with age plus credited service equal to 85.
 2. Benefit: 1.5% (2.0% if hired before September 1, 2004) of FAC times credited service.
 3. Normal Form: straight life annuity.

J. Early Retirement

1. Eligibility: Attainment of age 55 (60 for members hired on or after July 1, 2011) and completion of 5 years.
2. Benefit: Benefit accrued to date of retirement, reduced by 3% (6% for members hired on or after July 1, 2011) per year from age 65 to reflect commencement of benefit at an earlier age.

K. Temporary Early Retirement

Pending approval of a disability application, a retirement benefit is available to an active, vested member who is at least age 55 or age 60, if hired on or after July 1, 2011. This benefit is designed to provide income to the member during the process of fulfilling the disability application requirements. There is a three year limit on this retirement benefit.

L. Deferred Retirement

1. Eligibility: Any vested employee who terminates service for any reason other than retirement, disability, or death and leaves their accumulated contributions on deposit in the trust fund.
2. Benefit: Based on the formula in effect at the time of separation from service. Payment may commence any month after the member's 55th birthday, if hired prior to July 1, 2011, or after the member's 60th birthday, if hired July 1, 2011 or later.

M. Service Connected Disability

1. Eligibility: Any employee who becomes totally and permanently disabled as defined in Denver Municipal Code Section 18-408(d) which arises out of and in the course of the member's employment with the employer.
2. Benefit: Based on the greater of 20 years of service or actual service plus 10 years. Total credited service cannot exceed the credited service the member would have earned at age 65.
3. Normal Form: straight life annuity.

N. Non-Service Connected Disability

1. Eligibility: Any vested employee who becomes totally and permanently disabled as defined in Denver Municipal Code Section 18-408(e) which does not occur as a result of a service connected disability.
2. Benefit: The higher of 75% of the amount calculated for a service-connected disability or the amount calculated for an early retirement.
3. Normal Form: straight life annuity.

O. Death in the Line of Duty

The active member's surviving spouse is awarded the retirement benefit the member would have been entitled at their normal retirement date based on the higher of 15 years of service or actual credited service plus 5 years. Total credited service cannot exceed the credited service the member would have earned at age 65. If there is no surviving spouse but the member has children under age 21, then the benefit shall be paid until the youngest child becomes age 21. If there is no surviving spouse and no children under age 21, then the benefit shall be paid to a designated beneficiary.

P. Other Pre-Retirement Death

The active member's surviving spouse is awarded 75% of the benefit that would have been entitled had the death been service connected. If an active member who has attained the age of fifty-five (55) or the age of sixty (60) if hired on or after July 1, 2011 dies prior to the actual retirement date, the member shall be deemed to have retired on the first day of the month following the month in which death occurs and the surviving spouse will receive an annuity as if the member had elected the 100% joint and survivor option if this will result in a greater benefit to the spouse than the above provision.

Q. Post-Retirement Death

1. For Normal Retirement (with at least 5 years of service), Disability Retirement (after age 65), and for Temporary Early Retirement (pending approval of disability) the lump-sum death benefit is \$5,000.
2. For Disability Retirement before age 65, the death benefit is 150% of the member's annualized average monthly salary, limited to \$50,000. This benefit reduces to \$5,000 upon the disabled member reaching age 65.
3. If hired prior to July 1, 2011, for Early Retirement the lump-sum at age: 64 is \$4,750; 63 is \$4,500; 62 is \$4,250; 61 is \$4,000; 60 is \$3,750; 59 is \$3,500; 58 is \$3,250; 57 is \$3,000; 56 is \$2,750; 55 is \$2,500.
4. If hired on or after July 1, 2011, for Early Retirement the lump-sum at age: 64 is \$4,500; 63 is \$4,000; 62 is \$3,500; 61 is \$3,000; 60 is \$2,500.

R. Optional Forms

Joint and Survivor Option - Any employee retiring under the normal retirement provision may elect a joint and survivor benefit. The member's benefit is actuarially reduced based on their election: 100%, 75%, or 50%. Once the benefit commences this election cannot be changed. If the spouse or designated beneficiary predeceases the member, the benefit paid to the member shall be increased to the full single straight life annuity as if no joint and survivor benefit had been selected.

S. Medical Benefits

Retiree Medical Plan Benefits – Participants and their surviving spouses or dependents receiving retirement benefits are eligible to elect to receive Plan-provided retiree medical coverage and a Plan-provided subsidy (benefit) to help provide for the payment of health insurance premiums. The Plan contributes \$6.25 per month for each year of service for members who are Medicare eligible. The Plan contributes \$12.50 per month for each year of service for members not eligible for Medicare. In the event of the election of a Joint and Survivor option, the benefit is calculated based on the age of the member. If the member predeceases the joint and survivor beneficiary then the full benefit is transferred to the surviving spouse or dependent regardless of the joint and survivor election percentage. The monthly benefit is limited to the monthly premium amount for the coverage elected. If a member dies and leaves a beneficiary who is not a spouse or dependent, that beneficiary can elect to participate in the group health Plan, but must pay the full cost. No Plan contribution can be made for non-spouse or non-dependent beneficiaries.

- T. Refunds**
1. Eligibility: All members leaving covered employment with less than 5 years of service are eligible. Vested members (those with 5 or more years of service) may not withdraw their accumulated contributions plus interest in lieu of the deferred benefits otherwise due.
 2. Benefit: The member who withdraws receives a lump-sum payment of his/her employee contributions, plus the interest credited on these contributions. Interest is credited at 3.00%.
- U. Member Contributions** 8.00% of compensation, effective January 1, 2015.
- V. Employer Contributions** 11.50% of compensation, effective January 1, 2015 for each member.
- W. Cost of Living Increases** Given on an ad-hoc basis. There have been no cost of living increases since 2002.
- X. Changes from Previous Valuation** There have been no changes in the Plan provisions since the previous actuarial valuation, except for those specified herein.
- Y. Deferred Retirement Option Plan**
1. DROP – From January 1, 2001 through April 30, 2003, in lieu of immediate termination of employment and receipt of a normal retirement benefit, eligible members were permitted to continue employment for four years and have their normal retirement benefit paid into the deferred retirement option plan (DROP) account, after which time the participant either terminated employment or continued to be employed and resume regular membership with the retirement Plan.
 2. DROP II – From May 1, 2003 through September 1, 2003, in lieu of immediate termination of employment and receipt of a normal retirement benefit, eligible members were permitted to continue employment for five years and have their normal retirement benefit paid into the DROP II account after which time all participants terminated employment.
- Z. Other Ancillary Benefits**
- Social Security Make-Up Benefit – For members hired before July 1, 2011 and retiring on or after January 1, 1996, an additional retirement benefit equal to the applicable percentage (per Denver Municipal Code Section 18-409(i)) of the member's estimated primary Social Security benefit multiplied by credited service with the City/DHHA during which the contributions were made to Social Security (up to a maximum of 35 years of credited service) divided by 35. This additional benefit is payable beginning on the first day of the month after the member's 62nd birthday or the member's retirement date, whichever is later, but will not be paid before retirement benefits have begun from the Plan. Members retiring under a disability form of retirement are not eligible for this benefit.

Actuarial Section

Schedule of Funding Progress*

Pension Benefits (in millions)

Valuation Date January 1	Actuarial Value of Assest	Actuarial Accured Liability (AAL)	Unfunded AAL (UALL) [(3)-(2)]	Funded Ratio [(2)/(3)]	Covered Payroll	UAAAL as a Percentage of Covered Payroll [(4)/(6)]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2004	\$1,572.94	\$1,604.53	\$31.59	98.03%	\$506.52	6.24%
2005	1,651.09	1,665.54	14.45	99.13%	495.17	2.92%
2006	1,735.21	1,782.50	47.29	97.35%	495.29	9.55%
2007	1,837.48	1,862.77	25.29	98.64%	499.46	5.06%
2008	1,950.01	1,985.65	35.64	98.21%	545.84	6.53%
2009	1,924.99	2,095.89	170.90	91.85%	564.99	30.25%
2010	1,923.56	2,176.24	252.68	88.39%	506.05	49.93%
2011	1,942.87	2,284.76	341.89	85.04%	517.40	66.08%
2012	1,946.84	2,386.53	439.69	81.58%	517.40	84.98%
2013	1,980.20	2,593.19	612.99	76.36%	531.56	115.32%
2014	2,062.32	2,699.00	636.68	76.41%	540.23	117.85%
2015	2,132.02	2,893.67	761.65	73.68%	568.56	133.96%
2016	2,168.75	3,003.59	834.84	72.21%	586.82	142.27%

Health Benefits** (in millions)

Valuation Date January 1	Actuarial Value of Assest	Actuarial Accured Liability (AAL)	Unfunded AAL (UALL) [(3)-(2)]	Funded Ratio [(2)/(3)]	Covered Payroll	UAAAL as a Percentage of Covered Payroll [(4)/(6)]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2004	\$87.11	\$105.48	\$18.37	82.58%	\$506.52	3.63%
2005	88.53	116.57	28.04	75.95%	495.17	5.66%
2006	90.23	123.78	33.55	72.90%	495.29	6.77%
2007	93.09	127.13	34.04	73.22%	499.46	6.82%
2008	96.46	128.61	32.15	75.00%	545.84	5.89%
2009	92.68	134.00	41.32	69.16%	564.99	7.31%
2010	90.41	141.64	51.23	63.83%	506.05	10.12%
2011	87.61	143.11	55.50	61.22%	517.40	10.73%
2012	84.68	142.97	58.29	59.23%	517.40	11.27%
2013	82.99	148.89	65.90	55.74%	531.56	12.40%
2014	82.74	149.78	67.04	55.24%	540.23	12.41%
2015	82.19	152.92	70.73	53.75%	568.56	12.44%
2016	80.38	153.25	72.87	52.45%	586.82	12.42%

*Figures prior to 2008 were provided by the previous actuary.

**These liabilities represent solely the value of the explicit benefit, without regard to the implicit rate subsidy.

The explicit benefit is valued in compliance with all the parameters established by GASB Statements No. 43 and No.45. The value of any implicit rate subsidy in the city-sponsored health plans will be illustrated in the disclosures related to those plans.

Pension Plan*
Schedule of Employer Contributions

Year Beginning January 1:	Annual Required Contribution (ARC)		Contribution *		Percentage of ARC Contributed [(5)/(3)]
	% of Payroll ¹	Amount	% of Payroll ¹	Amount ²	
(1)	(2)	(3)	(4)	(5)	(6)
2005 ³	7.68%	\$38,039,016	7.54%	\$37,347,133	98.18%
2006	8.54%	42,277,066	7.63%	37,809,048	89.43%
2007	7.93%	39,623,830	8.20%	40,955,026	103.36%
2008	7.64%	41,699,683	8.13%	44,362,545	106.39%
2009	9.63%	54,392,610	7.63%	43,127,064	79.29%
2010 ⁴	9.68%	48,995,846	8.34%	42,228,203	86.19%
2011 ⁵	10.05%	52,000,472	8.83%	45,703,351	87.89%
2012 ⁶	10.83%	56,054,792	9.62%	49,756,639	88.76%
2013 ⁷	10.42%	55,397,564	10.62%	56,427,308	101.86%
2014 ⁸	10.34%	55,871,677	11.10%	59,941,041	107.28%
2015 ⁹	10.52%	59,811,786	11.83%	67,234,597	112.41%
2016 ¹⁰	10.83%	66,135,502	N/A	N/A	N/A

*Figures prior to 2008 were provided by the previous actuary.

¹ Estimated Payroll

² Employers made contributions based on the legally required rates.

³ Beginning on January 1, 2005, the employers and employees contributed 8.50% and 2.50%, respectively.

⁴ Beginning on January 1, 2010, the employers and employees contributed 8.50% and 4.50%, respectively.

⁵ Beginning on January 1, 2011, the employers and employees contributed 9.50% and 5.50%, respectively.

⁶ Beginning on January 1, 2012, the employers and employees contributed 10.25% and 6.25%, respectively.

⁷ Beginning on January 1, 2013, the employers and employees contributed 11.00% and 7.00%, respectively and amortization method changed from level dollar 30-year open to level percent of pay 30-year closed.

⁸ Beginning January 1, 2014, the employer and employee contribution are 11.20% and 7.30%, respectively.

⁹ Beginning January 1, 2015, the employer and employee contributions are 11.50% and 8.00%, respectively.

¹⁰ Includes DHHA Supplement

Retiree Medical Plan*
Schedule of Employer Contributions**

Year Beginning January 1: (1)	Annual Required Contribution (ARC)		Contribution *		Percentage of ARC Contributed [(5)/(3)] (6)
	% of Payroll ¹ (2)	Amount (3)	% of Payroll ¹ (4)	Amount ² (5)	
2005 ³	0.61%	\$3,032,638	0.71%	\$3,530,326	116.41%
2006	0.82%	4,081,627	0.82%	4,075,768	99.86%
2007	0.79%	3,929,333	0.90%	4,504,640	114.64%
2008	0.83%	4,532,574	0.78%	4,253,783	93.85%
2009	0.91%	5,156,984	0.81%	4,551,097	88.25%
2010 ⁴	0.85%	4,290,712	0.58%	2,924,858	68.17%
2011 ⁵	0.96%	4,965,060	0.81%	4,202,033	84.63%
2012 ⁶	1.00%	5,153,185	0.82%	4,241,292	82.30%
2013 ⁷	0.89%	4,721,761	0.78%	4,135,064	87.57%
2014 ⁸	0.76%	4,093,763	0.80%	4,332,376	105.83%
2015 ⁹	0.76%	4,322,064	0.77%	4,380,107	101.34%
2016	0.72%	4,253,678	N/A	N/A	N/A

*Figures prior to 2008 were provided by the previous actuary.

**These liabilities represent solely the value of the explicit benefit, without regard to the implicit rate subsidy. The explicit benefit is valued in compliance with all the parameters established by GASB Statements No. 43 and No. 45. The value of any implicit rate subsidy in the city-sponsored health plans will be illustrated in the disclosures related to those plans.

¹ Estimated Payroll

² Employers made contributions based on the legally required rates.

³ Beginning on January 1, 2005, the employers and employees contributed 8.50% and 2.50%, respectively.

⁴ Beginning on January 1, 2010, the employers and employees contributed 8.50% and 4.50%, respectively.

⁵ Beginning on January 1, 2011, the employers and employees contributed 9.50% and 5.50%, respectively.

⁶ Beginning on January 1, 2012, the employers and employees contributed 10.25% and 6.25%, respectively.

⁷ Beginning on January 1, 2013, the employers and employees contributed 11.00% and 7.00%, respectively and amortization method changed from level dollar 30-year open to level percent of pay 30-year closed.

⁸ Beginning January 1, 2014, the employer and employee contribution are 11.20% and 7.30%, respectively.

⁹ Beginning January 1, 2015, the employer and employee contributions are 11.50% and 8.00%, respectively.

This Page Intentionally Left Blank

Statistical Section

This section of the Plan's comprehensive annual financial report presents detailed information to assist the reader in understanding what the information in the financial statements, note disclosures, and required supplementary information indicate about the Plan's overall financial status.

Statistical Section

Changes in Fiduciary Net Position Last Ten Fiscal Years

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Pension Benefits				
Additions:				
Member contributions ⁽¹⁾	\$ 11,979,390 ⁽²⁾	\$ 12,804,873	\$ 12,849,520	\$ 21,139,754 ⁽³⁾
Employer contributions ⁽¹⁾	40,955,026	44,362,545	43,127,064	42,228,203
Investment earnings (net of expenses)	<u>199,977,322</u>	<u>(523,370,681)</u>	<u>198,018,642</u>	<u>217,566,113</u>
Total additions to fiduciary net position	252,911,738	(466,203,263)	253,995,226	280,934,070
Deductions:				
Benefit payments	104,926,801	115,090,867	121,191,856	137,392,322
Refunds	390,158	492,692	430,252	666,009
Administrative expenses	<u>2,469,185</u>	<u>2,839,820</u>	<u>2,558,311</u>	<u>2,555,677</u>
Total deductions from fiduciary net position	<u>107,786,144</u>	<u>118,423,379</u>	<u>124,180,419</u>	<u>140,614,008</u>
Change in fiduciary net position	<u>\$ 145,125,594</u>	<u>\$ (584,626,642)</u>	<u>\$ 129,814,807</u>	<u>\$ 140,320,062</u>
Health Benefits				
Additions:				
Member contributions ⁽¹⁾	\$ 1,297,609	\$ 1,183,354	\$ 1,291,670	\$ 1,950,508
Employer contributions ⁽¹⁾	4,504,640	4,253,783	4,551,097	2,924,858
Investment earnings (net of expenses)	<u>10,012,367</u>	<u>(25,408,688)</u>	<u>9,252,242</u>	<u>9,714,426</u>
Total additions to fiduciary net position	15,814,616	(19,971,551)	15,095,009	14,589,792
Deductions:				
Benefit payments	10,612,929	10,822,553	11,003,408	11,708,006
Refunds	19,489	24,005	20,304	30,120
Administrative expenses	<u>123,382</u>	<u>138,364</u>	<u>120,955</u>	<u>115,362</u>
Total deductions from fiduciary net position	<u>10,755,800</u>	<u>10,984,922</u>	<u>11,144,667</u>	<u>11,853,488</u>
Change in fiduciary net position	<u>\$ 5,058,816</u>	<u>\$ (30,956,473)</u>	<u>\$ 3,950,342</u>	<u>\$ 2,736,304</u>

⁽¹⁾ Employer and employee contributions are made in accordance with rates set by City ordinance. The contribution rate has been actuarially determined by an independent actuary to be sufficient to accumulate assets necessary to pay the actuarial liability when due.

⁽²⁾ Effective January 1, 2005, the employer and employee contributions increased to 8.5% and 2.5%, respectively.

⁽³⁾ Effective January 1, 2010, the employee contribution increased to 4.5%.

⁽⁴⁾ Effective January 1, 2011, the employer and employee contributions increased to 9.5% and 5.5%, respectively.

⁽⁵⁾ Effective January 1, 2012, the employer and employee contributions increased to 10.25% and 6.25%, respectively.

⁽⁶⁾ Effective January 1, 2013, the employer and employee contributions increased to 11.00% and 7.00%, respectively.

⁽⁷⁾ Effective January 1, 2014, the employer and employee contributions increased to 11.20% and 7.30%, respectively.

⁽⁸⁾ Effective January 1, 2015, the employer and employee contributions increased to 11.50% and 8.00%, respectively.

Statistical Section

<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
\$ 26,110,772 ⁽⁴⁾	\$ 30,663,247 ⁽⁵⁾	\$ 37,138,512 ⁽⁶⁾	\$ 39,521,451 ⁽⁷⁾	\$ 46,689,696 ⁽⁸⁾	\$ 48,037,800
45,703,351	49,756,639	56,427,308	59,941,041	67,234,597	68,794,871
<u>(2,396,020)</u>	<u>205,809,820</u>	<u>318,274,197</u>	<u>101,595,703</u>	<u>(35,746,029)</u>	<u>147,443,477</u>
69,418,103	286,229,706	411,840,017	201,058,195	78,178,264	264,276,148
142,108,250	149,470,854	158,285,769	171,178,475	181,827,975	191,790,600
948,969	947,756	1,051,298	1,507,554	2,164,104	2,751,016
<u>2,883,909</u>	<u>3,334,741</u>	<u>3,597,603</u>	<u>3,638,296</u>	<u>3,785,416</u>	<u>3,742,451</u>
<u>145,941,128</u>	<u>153,753,351</u>	<u>162,934,670</u>	<u>176,324,325</u>	<u>187,777,495</u>	<u>198,284,067</u>
<u>\$ (76,523,025)</u>	<u>\$ 132,476,355</u>	<u>\$ 248,905,347</u>	<u>\$ 24,733,870</u>	<u>\$ (109,599,231)</u>	<u>\$ 65,992,081</u>
\$ 2,329,357	\$ 2,492,678	\$ 2,543,374	\$ 2,725,316	\$ 3,026,103	\$ 3,012,052
4,202,033	4,241,292	4,135,064	4,332,376	4,380,107	4,364,140
<u>(42,792)</u>	<u>8,635,748</u>	<u>12,911,917</u>	<u>3,966,864</u>	<u>(1,308,528)</u>	<u>5,225,319</u>
6,488,598	15,369,718	19,590,355	11,024,556	6,097,682	12,601,511
12,471,835	12,446,444	12,582,751	12,846,786	12,905,247	12,859,361
41,255	39,653	42,505	58,314	80,925	98,273
<u>125,390</u>	<u>139,510</u>	<u>145,169</u>	<u>140,710</u>	<u>141,296</u>	<u>133,511</u>
<u>12,638,480</u>	<u>12,625,607</u>	<u>12,770,425</u>	<u>13,045,810</u>	<u>13,127,468</u>	<u>13,091,145</u>
<u>\$ (6,149,882)</u>	<u>\$ 2,744,111</u>	<u>\$ 6,819,930</u>	<u>\$ (2,021,254)</u>	<u>\$ (7,029,786)</u>	<u>\$ (489,634)</u>

Statistical Section

Schedule of Benefit Expenses by Type Last Ten Fiscal Years

	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
Age and Service Benefits:				
Retirees	\$ 85,768,809	\$ 94,138,108	\$ 100,395,696	\$ 114,044,816
Survivor	4,342,907	4,772,142	5,050,283	5,415,206
Death in Service Benefits	2,905,886	3,118,334	3,347,207	3,636,127
Disability Benefits:				
Retirees:				
On-the-Job	607,662	695,022	646,932	769,792
Off-the-Job	3,115,834	3,257,205	3,377,520	3,712,434
Survivors	927,141	1,012,571	1,071,358	1,124,708
Lump Sum Death Benefits	1,199,236	1,055,949	1,310,065	1,376,342
Pension Benefits' Contribution Refunds				
Separation	388,627	473,621	261,010	591,480
Death	1,531	19,071	169,242	74,529
Health Benefits' Contribution Refunds				
Separation	19,413	23,076	12,317	26,749
Death	76	929	7,987	3,371
DROP Benefits	6,059,326	7,041,536	5,992,795	7,312,897
Pension Benefits	98,867,475	108,049,331	115,199,061	130,079,425
Health Benefits	10,612,929	10,822,553	11,003,408	11,708,006

Statistical Section

<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
\$ 119,878,934	\$ 127,091,564	\$ 135,648,423	\$ 146,505,901	\$ 156,519,225	\$ 165,246,685
5,879,654	6,126,099	6,619,661	7,274,571	7,755,324	8,482,372
3,659,245	3,736,130	3,781,917	3,965,980	4,054,992	4,135,128
818,527	869,781	826,071	844,509	879,295	917,075
3,888,218	3,854,524	3,940,566	4,018,848	3,977,212	4,122,190
1,122,643	1,238,793	1,309,114	1,433,661	1,535,422	1,569,064
1,508,915	1,315,428	1,350,159	1,415,762	1,324,545	1,615,976
911,074	941,408	1,051,298	1,507,554	2,162,575	2,671,771
37,895	6,348	-	-	1,529	2,616
39,608	39,387	42,505	58,314	80,868	174,731
1,647	266	-	-	57	171
5,352,114	5,238,535	4,809,858	5,719,243	5,781,960	5,702,111
136,756,136	144,232,319	153,475,911	165,459,232	176,046,015	186,088,490
12,471,835	12,446,444	12,582,751	12,846,786	12,905,247	12,859,360

Statistical Section

Schedule of Retired Members by Type of Benefit - Pension December 31, 2016

Amount of Monthly Benefit	Number of Retirees	Type of Retirement*							Option Selected**			
		1	2	3	4	5	6	7	1	2	3	4
\$1- 50	90	84	5				1		88	1	1	
51- 100	111	71	17			9	14		78	27	3	3
101- 150	216	160	28	1		8	19		126	73	6	11
151- 200	260	196	32			6	23	3	148	84	6	22
201- 250	275	200	41			13	21		148	95	10	22
251- 300	254	156	44		3	24	24	3	145	88	4	17
301- 350	264	160	40		4	24	29	7	153	78	13	20
351- 400	227	151	37	1	9	15	11	3	139	64	9	15
401- 450	226	148	35		6	13	20	4	128	60	9	29
451- 500	228	133	41	1	12	18	20	3	130	65	13	20
501- 600	432	229	93	3	22	25	46	14	238	122	23	49
601- 700	352	203	51	1	20	22	43	12	200	88	22	42
701- 800	329	184	48	2	25	15	41	14	164	101	27	37
801- 900	282	170	37	3	12	18	35	7	139	79	21	43
901- 1,000	278	185	22	3	19	11	30	8	142	85	19	32
1,001-1,100	308	195	32	2	16	14	39	10	151	90	25	42
1,101-1,200	295	199	23	1	17	12	32	11	148	94	18	35
1,201-1,300	266	180	17	3	11	11	37	7	124	76	21	45
1,301-1,400	264	204	9	3	11	4	26	7	139	63	28	34
1,401-1,500	259	202	11	1	13	13	16	3	149	55	16	39
1,501-1,600	253	198	11	4	8	10	22		140	59	28	26
1,601-1,700	223	182	4	2	10	8	14	3	116	50	26	31
1,701-1,800	202	164	4		10	11	12	1	118	37	18	29
1,801-1,900	217	195	3	1	7	3	8		115	38	26	38
1,901-2,000	196	177	2		4	3	9	1	93	47	19	37
2,001-2,500	862	755	10	4	21	20	45	7	427	223	80	132
2,501-3,000	657	609	3	5	8	6	25	1	310	166	64	117
3,001-3,500	468	440		4	4	6	12	2	212	129	45	82
3,501-4,000	324	307	2		3	2	10		138	96	31	59
4,001-4,500	210	201		1	2	4	2		90	52	16	52
4,501-5,000	156	152	1			1	2		72	45	16	23
5,001-5,500	85	82		1		2			30	18	14	23
5,501-6,000	64	61				1	2		25	22	6	11
6,001-6,500	33	33							18	8	1	6
6,501-7,000	36	34			1		1		12	17	2	5
\$7,001- over	100	91			3	1	4	1	36	30	11	23
Totals	9,302	7,091	703	47	281	353	695	132	4,829	2,525	697	1,251

*** Type of Retirement:**

1. Normal Retirement for Age and Service
2. Early Retirement
3. Disability – On-the-Job
4. Disability – Off-the-Job
5. Survivor Payment – Death in Service
6. Survivor Payment – Normal or Early Retirement
7. Survivor Payment – Disability Retirement

****Option Selected:**

1. Life
2. 100% Joint and Survivor
3. 75% Joint and Survivor
4. 50% Joint and Survivor

Statistical Section

Schedule of Retired Members by Type of Benefit - Health Insurance Reduction December 31, 2016

(1) Non Medicare-eligible		(2) Medicare-eligible	
Amount of Reduction	Number of Retirees	Amount of Reduction	Number of Retirees
Eligible to Receive		Eligible to Receive	
\$12.50 - 50.00	84	\$6.25 - 50.00	497
51.00 - 100.00	284	51.00 - 100.00	1,109
101.00 - 150.00	268	101.00 - 150.00	1,180
151.00 - 200.00	224	151.00 - 200.00	1,017
201.00 - 250.00	249	201.00 - 250.00	371
251.00 - 300.00	228	251.00 - 300.00	66
301.00 - 350.00	254	301.00 - 350.00	43
351.00 - 400.00	243	351.00 - 400.00	32
401.00 - 450.00	199	401.00 - 450.00	13
451.00 - 500.00	52	451.00 - 500.00	5
501.00 - 550.00	11	501.00 - 550.00	2
551.00 - 600.00	1	551.00 - 600.00	2
601.00 - 650.00	0	601.00 - 650.00	0
651.00 - 700.00	3	651.00 - 700.00	0
701.00 - 750.00	1	701.00 - 750.00	2
751.00 - 800.00	1	751.00 - 800.00	1
\$801.00 - over	0	\$801.00 - over	1
Total	2,102	Total	4,341

Type of Benefit:

(1) Participants who are not Medicare-eligible are eligible for health/dental insurance premium reduction equal to \$12.50 per month for each year of service.

(2) Participants who are Medicare-eligible are eligible for health/dental insurance premium reduction equal to \$6.25 per month for each year of service.

Note: In some instances, the years of service of spouses may have been combined when determining the amount of benefit.

Statistical Section

Schedule of Retired Members by Attained Age and Type of Pension Benefit December 31, 2016

Age	Number of Retirees/ Beneficiary	Type of Retirement*						
		1	2	3	4	5	6	7
01-24	40				7	24	4	5
25-29	8					2	4	2
30-34	11					7	2	2
35-39	23					12	6	5
40-44	24				6	10	6	2
45-49	44	1			12	14	12	5
50-54	72	6		1	16	33	13	3
55-59	1,030	859	48	4	42	43	22	12
60-64	1,738	1,441	94	14	61	52	64	12
65-69	2,236	1,866	140	12	64	56	77	21
70-74	1,574	1,241	142	3	36	36	96	20
75-79	940	654	104	4	19	26	106	27
80-84	709	489	63	7	11	16	112	11
85-89	500	353	35	1	4	8	98	1
90-94	266	136	59	1	2	12	52	4
95 and up	87	45	18		1	2	21	
Totals	9,302	7,091	703	47	281	353	695	132

***Type of Retirement:**

1. Normal Retirement for Age and Service
2. Early Retirement
3. Disability – On-the-Job
4. Disability – Off-the-Job
5. Survivor Payment – Death in Service
6. Survivor Payment – Normal or Early Retirement
7. Survivor Payment – Disability Retirement

Statistical Section

Average Monthly Benefit Payment – Pension Last Ten Fiscal Years

Retirement Effective Date for the Years Ended December 31:	Years of Credited Service							Total
	0-5	6-10	11-15	16-20	21-25	26-30	31+	
2007								
Average Monthly Benefit	\$52.26	\$406.89	\$668.51	\$1,306.00	\$1,802.38	\$2,500.82	\$3,146.99	\$1,525.70
Mean Final Average Monthly Salary	\$2,936.27	\$3,784.99	\$3,637.37	\$4,493.97	\$4,707.83	\$4,897.62	\$5,052.79	\$4,372.90
Number of Retirees	1	88	56	68	55	50	61	379
2008								
Average Monthly Benefit	\$758.53	\$444.21	\$844.40	\$1,584.03	\$2,316.39	\$2,603.67	\$3,369.03	\$1,621.69
Mean Final Average Monthly Salary	\$2,053.60	\$3,781.87	\$4,450.86	\$4,998.35	\$5,568.83	\$5,209.11	\$5,532.95	\$4,742.67
Number of Retirees	3	94	63	72	44	55	46	377
2009								
Average Monthly Benefit	\$170.48	\$371.43	\$861.17	\$1,646.28	\$2,171.89	\$2,631.60	\$3,380.10	\$1,960.51
Mean Final Average Monthly Salary	\$3,651.81	\$3,179.39	\$4,348.20	\$5,337.72	\$5,432.91	\$5,123.81	\$5,359.29	\$4,883.90
Number of Retirees	5	93	77	114	126	73	142	630
2010								
Average Monthly Benefit	\$211.53	\$369.70	\$979.86	\$1,527.63	\$2,163.74	\$2,606.62	\$3,138.77	\$1,569.19
Mean Final Average Monthly Salary	\$3,293.07	\$3,738.27	\$5,649.60	\$5,459.85	\$5,761.51	\$5,114.12	\$5,862.78	\$5,152.88
Number of Retirees	5	72	63	74	40	33	48	335
2011								
Average Monthly Benefit	\$296.19	\$500.13	\$1,078.70	\$1,848.95	\$2,506.49	\$3,229.10	\$3,896.81	\$1,908.05
Mean Final Average Monthly Salary	\$4,168.30	\$4,069.33	\$5,078.96	\$5,671.69	\$6,024.76	\$5,987.34	\$5,877.89	\$5,268.32
Number of Retirees	40	74	66	90	44	43	55	412
2012								
Average Monthly Benefit	\$547.95	\$447.11	\$1,083.12	\$1,871.72	\$2,482.05	\$3,215.24	\$4,361.42	\$2,001.66
Mean Final Average Monthly Salary	\$6,647.48	\$3,884.74	\$5,068.86	\$5,761.95	\$5,797.04	\$6,102.37	\$6,753.19	\$5,716.52
Number of Retirees	34	101	104	78	61	37	52	467
2013								
Average Monthly Benefit	\$291.11	\$407.63	\$1,091.12	\$1,943.89	\$2,882.70	\$3,867.46	\$4,470.81	\$2,136.39
Mean Final Average Monthly Salary	\$4,208.28	\$3,809.74	\$4,983.96	\$5,834.63	\$6,815.54	\$7,356.09	\$6,845.95	\$5,693.45
Number of Retirees	29	91	87	103	85	55	63	513
2014								
Average Monthly Benefit	\$236.76	\$457.19	\$1,130.46	\$2,076.25	\$3,135.95	\$3,815.05	\$4,512.90	\$2,194.94
Mean Final Average Monthly Salary	\$3,461.08	\$4,024.75	\$5,225.31	\$6,393.35	\$6,795.95	\$7,206.76	\$6,749.41	\$5,693.80
Number of Retirees	36	126	79	92	72	54	55	514
2015								
Average Monthly Benefit	\$321.79	\$535.69	\$1,172.21	\$2,366.45	\$2,919.18	\$3,513.48	\$4,821.40	\$2,235.74
Mean Final Average Monthly Salary	\$4,214.31	\$4,311.94	\$5,332.13	\$6,817.83	\$6,363.86	\$6,703.53	\$7,400.13	\$5,877.68
Number of Retirees	24	96	100	79	80	63	57	499
2016								
Average Monthly Benefit	\$266.14	\$507.61	\$937.86	\$2,092.13	\$3,076.03	\$3,923.10	\$4,913.50	\$2,245.20
Mean Final Average Monthly Salary	\$3,592.82	\$4,238.98	\$4,429.35	\$6,410.25	\$6,517.95	\$7,019.04	\$7,287.40	\$5,642.26
Number of Retirees	33	81	66	93	87	58	41	459

Statistical Section

Average Monthly Benefit Payment – Health Insurance Reduction Last Ten Fiscal Years

As of December 31:	Years of Credited Service							Total
	1-5	6-10	11-15	16-20	21-25	26-30	31+	
2007								
Total Eligible Reduction Amount	\$3,775	\$30,788	\$66,525	\$127,688	\$189,438	\$239,006	\$317,100	\$974,320
Average Monthly Benefit Paid	\$37.58	\$62.76	\$97.04	\$145.41	\$191.21	\$246.67	\$303.49	\$190.26
Number of Retirees	96	432	599	794	915	910	957	4,703
2008								
Total Eligible Reduction Amount	\$3,263	\$33,463	\$69,656	\$139,150	\$191,944	\$245,413	\$330,750	\$1,013,639
Average Monthly Benefit Paid	\$36.25	\$71.05	\$190.18	\$161.05	\$201.83	\$256.98	\$326.83	\$190.26
Number of Retirees	90	471	638	864	951	955	1,012	4,981
2009								
Total Eligible Reduction Amount	\$3,313	\$35,381	\$75,444	\$154,194	\$213,188	\$256,800	\$375,813	\$1,114,133
Average Monthly Benefit Paid	\$36.40	\$72.50	\$110.78	\$165.44	\$209.01	\$260.18	\$336.15	\$209.54
Number of Retirees	91	488	681	932	1,020	987	1,118	5,317
2010								
Total Eligible Reduction Amount	\$3,506	\$34,006	\$75,925	\$157,556	\$209,787	\$252,344	\$377,131	\$1,110,255
Average Monthly Benefit Paid	\$36.91	\$69.97	\$110.20	\$164.12	\$206.48	\$255.41	\$336.12	\$207.29
Number of Retirees	95	486	689	960	1,016	988	1,122	5,356
2011								
Total Eligible Reduction Amount	\$4,666	\$31,748	\$72,015	\$157,243	\$200,803	\$262,652	\$313,342	\$1,042,469
Average Monthly Benefit Paid	\$36.45	\$62.25	\$93.77	\$151.05	\$192.34	\$246.39	\$313.97	\$187.66
Number of Retirees	128	510	768	1,041	1,044	1,066	998	5,555
2012								
Total Eligible Reduction Amount	\$4,844	\$32,767	\$76,100	\$161,844	\$209,974	\$266,394	\$328,562	\$1,080,485
Average Monthly Benefit Paid	\$36.97	\$61.36	\$92.24	\$147.27	\$188.32	\$241.08	\$309.96	\$184.10
Number of Retirees	131	534	825	1,099	1,115	1,105	1,060	5,869
2013								
Total Eligible Reduction Amount	\$5,087	\$33,201	\$78,183	\$165,711	\$215,607	\$267,749	\$336,423	\$1,101,961
Average Monthly Benefit Paid	\$37.40	\$60.70	\$91.98	\$144.60	\$184.44	\$235.90	\$305.01	\$181.06
Number of Retirees	136	547	850	1,146	1,169	1,135	1,103	6,086
2014								
Total Eligible Reduction Amount	\$5,480	\$34,538	\$79,741	\$166,663	\$214,240	\$267,382	\$341,055	\$1,109,099
Average Monthly Benefit Paid	\$38.05	\$60.17	\$90.31	\$139.35	\$177.79	\$229.12	\$300.22	\$175.91
Number of Retirees	144	574	883	1,196	1,205	1,167	1,136	6,305
2015								
Total Eligible Reduction Amount	\$5,678	\$36,043	\$81,626	\$168,578	\$214,335	\$266,580	\$343,191	\$1,116,031
Average Monthly Benefit Paid	\$37.85	\$60.37	\$89.01	\$134.86	\$172.71	\$223.27	\$292.83	\$171.14
Number of Retirees	150	597	917	1,250	1,241	1,194	1,172	6,521
2016								
Total Eligible Reduction Amount	\$5,819	\$36,470	\$81,645	\$169,996	\$218,241	\$267,517	\$338,370	\$1,118,058
Average Monthly Benefit Paid	\$37.79	\$59.11	\$88.74	\$132.50	\$169.44	\$218.38	\$283.63	\$167.37
Number of Retirees	154	617	920	1,283	1,288	1,225	1,193	6,680

Statistical Section

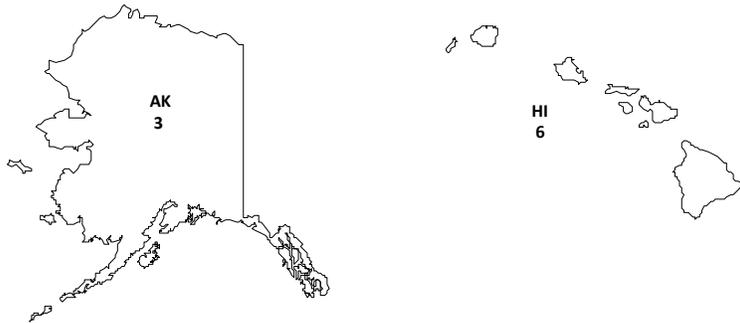
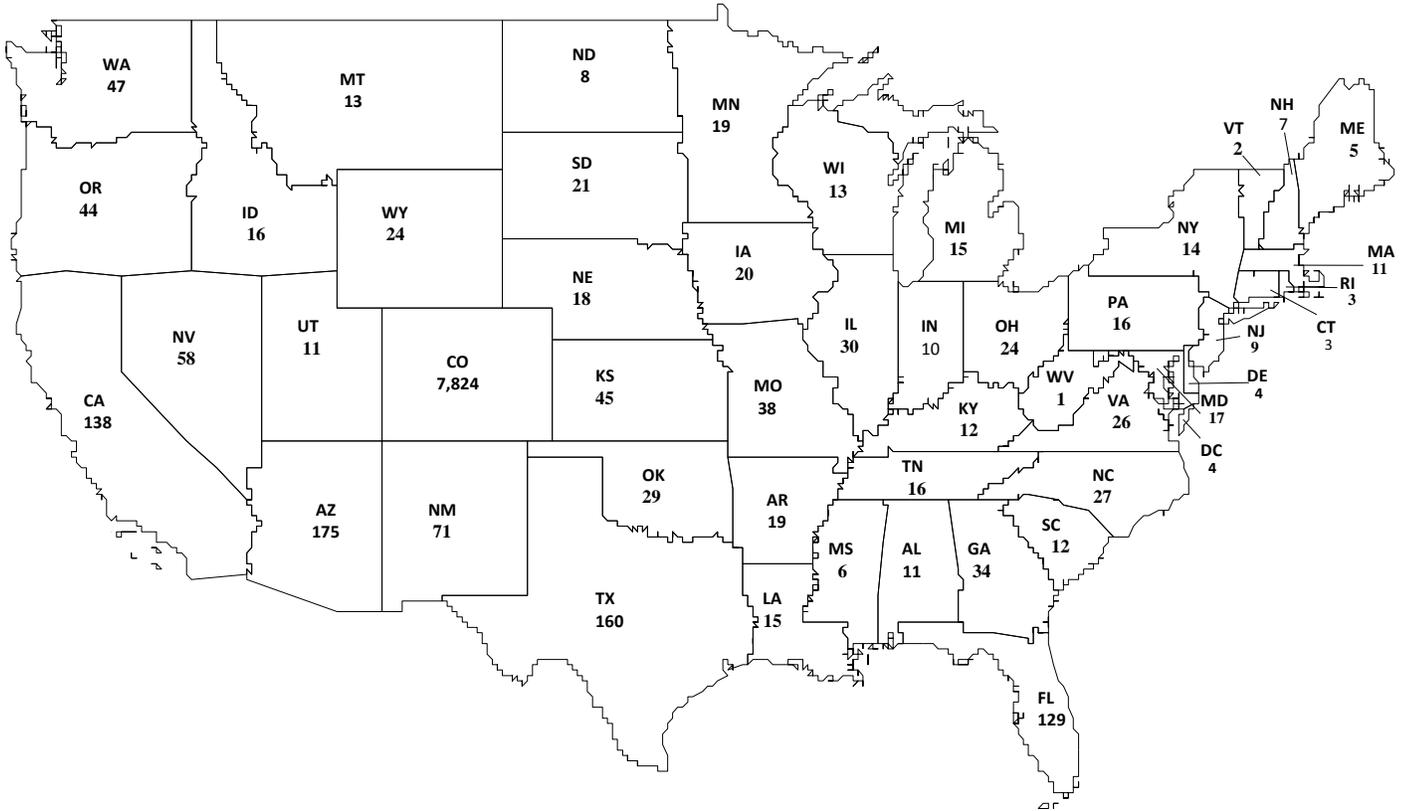
Principal Participating Employers Current Year and Nine Years Ago

	2016			2007		
	<u>Covered Employees</u>	<u>Rank</u>	<u>Percentage of Total System</u>	<u>Covered Employees</u>	<u>Rank</u>	<u>Percentage of Total System</u>
Pension Benefits						
Participating Government:						
City and County of Denver	23,687	1	94.4%	17,566	1	91.4%
Denver Health and Hospital Authority	<u>1,418</u>	2	<u>5.6%</u>	<u>1,654</u>	2	<u>8.6%</u>
Total	<u><u>25,105</u></u>		<u><u>100.0%</u></u>	<u><u>19,220</u></u>		<u><u>100.0%</u></u>
Health Benefits						
Participating Government:						
City and County of Denver	23,687	1	94.4%	17,566	1	91.4%
Denver Health and Hospital Authority	<u>1,418</u>	2	<u>5.6%</u>	<u>1,654</u>	2	<u>8.6%</u>
Total	<u><u>25,105</u></u>		<u><u>100.0%</u></u>	<u><u>19,220</u></u>		<u><u>100.0%</u></u>

Statistical Section

Location of Plan Retirees

Total Number of Retirees – 9,302



Other Countries and Territories

Argentina	1
Australia	1
Costa Rica	3
Finland	1
Germany	1
Israel	3
Italy	1
Mexico	5
New Zealand	1
United Kingdom	2

Denver Employees Retirement Plan
777 Pearl Street
Denver, CO 80203-3717
303-839-5419
www.derp.org
mbrsvs@derp.org

Photos on front cover courtesy of VISIT DENVER