DERP
Denver Employees Retirement Plan

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

Comprehensive Annual Financial Report

Fiscal Year Ended
December 31, 2020

Powering Your Future, Together.

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

Comprehensive Annual Financial Report

Fiscal Year Ended December 31, 2020

Maurice Goodgaine
Retirement Board Chair

Heather Darlington
Executive Director

Prepared by the Denver Employees Retirement Plan Staff

Available online at DERP.org

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Introductory Section

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Primary Plan Sponsor

City and County of Denver, Colorado

Elected Officials

Honorable Michael B. Hancock
Mayor

Honorable Paul D. López
Clerk and Recorder

Honorable Timothy M. O'Brien, CPA
Auditor

City Council

Honorable Amanda P. Sandoval
District 1

Honorable Kevin Flynn
District 2

Honorable Jamie Torres
District 3

Honorable Kendra Black
District 4

Honorable Amanda Sawyer
District 5

Honorable Paul Kashmann
District 6

Honorable Jolon Clark
District 7

Honorable Christopher Herndon
District 8

Honorable Candi CdeBaca
District 9

Honorable Chris Hinds
District 10

Honorable Stacie Gilmore
District 11

Honorable Robin Kniech
Council Member at-Large

Honorable Deborah Ortega
Council Member at-Large

DERP
Denver Employees
Retirement Plan

June 11, 2021

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 (DERP) of the City and County of Denver (city) for the fiscal year ended December 31, 2020.

Comprehensive Annual Financial Report This report is an overview intended to give the reader reliable and useful information which describes the financial position of DERP and provides assurance DERP is in compliance with applicable legal provisions. DERP'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 DERP as of December 31, 2020, as well as the changes in fiduciary net position for the year.

Internal Control DERP 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 DERP 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 misstatement.

Independent Audit The city's Revised Municipal Code requires an annual audit of the trust fund, with the results being furnished to the mayor, the city council, and the city auditor. The retirement board selected the accounting firm CliftonLarsonAllen, LLP to render an opinion as to the fairness of DERP’s 2020 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 Auditors' Report is included in this report's Financial Section.

Management's Discussion and Analysis Generally accepted accounting principles (GAAP) require DERP 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 the MD&A and should be read in conjunction. DERP’s MD&A can be found immediately following the report of the independent auditors in this report's Financial Section.

DERP Profile DERP was established on January 1, 1963, as a defined benefit plan. Most city employees, certain employees of the Denver Health and Hospital Authority (DHHA), and all DERP staff are covered by DERP. Excluded from membership are the uniformed employees of the city’s police and fire departments and the Denver Water Board employees. All active members are required to contribute to Social Security while employed. As of December 31, 2020, there were 8,961 active and 10,520 retired DERP members.

DERP is governed by a five member retirement 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 DERP membership for staggered three-year terms and one member is appointed by the city’s Career Service Board.

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

DERP 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. DERP also provides disability and death benefits. With respect to other post-retirement benefits, DERP 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, DERP 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 this report's Actuarial Section. DERP'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 DERP follows a strategic asset allocation ensuring investments are diversified. The goal of the asset allocation is to provide the highest level of return at an acceptable level of risk. During 2020, the investment portfolio returned 5.7% net of fees. These investment results lagged the overall strategic benchmark return for DERP of 10.0% as well as the median peer return of 10.6%. Over the last 10 years, the DERP portfolio has earned a net annual return of 7.1%, which lagged our peers and our blended benchmark returns of 7.8% and 7.9% respectively.

Funded Status DERP's pension benefit fund continues to be in a healthy financial position relative to our peer group of other public pension funds nationally. The retirement board, the executive director, and the DERP's staff remain committed to managing DERP's assets and liabilities to maintain the long-term financial soundness of DERP 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, 2020 was 61.70%. DERP continues to work successfully with the city to annually receive the full amount of the actuarially required contribution necessary to achieve DERP's funding goals. Additional information regarding DERP's funding is included in this report's Actuarial Section.

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, 2019. 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. DERP has received a Certificate of Achievement for 31 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 DERP staff who served the membership throughout 2020 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 DERP staff make toward the continued successful operation of DERP.

Sincerely,

Heather K. Darlington

Maurice Goodgaine
Retirement Board Chair

Heather K. Darlington, CPA
Executive Director

Retirement Board

The retirement board's role is to ensure DERP is appropriately governed and managed. The board acts as trustees for active members, retired members, and their beneficiaries and oversees the investment of assets, approves the operating budget, and sets policy. One member must be a vested, active employee and one must be a retired member.

Diane Barrett
Retired member
Term expires January 1, 2026

Maurice Goodgaine
Term expires January 1, 2023

Guadalupe Gutierrez-Vasquez
Active member
Term expires January 1, 2027

Eric S. Rothaus
Term expires January 1, 2022

Lisa Zúñiga Ramirez, CFA
Term expires January 1, 2025

Advisory Committee

The advisory committee consists of voluntary and unpaid non-voting members who are elected by membership to serve staggered 3-year terms. One seat is filled by a vested, active City and County of Denver (city) or Denver Health and Hospital Authority (DHHA) employee, one seat is filled by a retired member, and another seat is appointed by the Denver Career Service Board. The fourth seat can be filled by an active, vested city or DHHA employee or retired member. An election is held every spring to elect, or re-elect, a member. An advisory committee member represents city employees, DHHA covered employees, and DERP retired members and presents suggestions and questions to the DERP Retirement Board.

Heather Britton
Appointed by the Career Service Board
Term expires June, 2023

George Delaney
Retired member
Term expires June, 2021

Frank Fresquez
Retired member
Term expires June, 2022

Andrew Luxen
Active member
Term expires June, 2023

Professional Services

Actuary
- Cheiron, Inc.

Custodian Bank
- Bank of New York Mellon Corporation

Independent Auditor
- CliftonLarsonAllen, LLP

Investment Consulting
- Meketa Investment Group

Investment Managers

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

International Equity Managers
- Altrinsic Global Advisors
- Dimensional Fund Advisors
- LSV Asset Management
- Mellon Capital Management
- WCM Investment Management

Fixed Income Managers
- Athyrium
- Bain Capital
- Davidson Kempner Capital Managment, LP
- Colchester Global Investors Limited
- Golub Capital
- GSO Capital Partners, LP
- Mellon Capital Management

Real Estate Managers
- Contrarian Capital Management, LLC
- Prudential Real Estate Investors
- UBS Global Asset Management
- Walton Street Capital

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

Absolute Return Funds
- DG Partners
- PAAMCO Prisma

Investment commissions and fees can be found on pages 59 - 60 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, 2019

Christopher P. Morrill

Executive Director/CEO

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 Annual Report for the fiscal year ended December 31, 2019.

The Certificate of Achievement is the highest form of recognition for excellence in state or local government financial reporting. The Certification of Achievement Program was established to encourage municipal governments to publish high quality financial reports and to provide peer recognition and technical guidance for officials preparing these reports.

In order to be awarded a Certification of Achievement, a government unit must publish an easily-readable and efficiently-organized annual financial report, whose contents conform to program standards. Such reports should go beyond the minimum requirements of generally accepted accounting principles and demonstrate an effort to clearly communication the municipal government's financial picture, enhance an understanding of financial reporting by municipal governments and address user needs. A Certification of Achievement is valid for a period of one year only.

Organization Chart

Executive Director

Responsible for directing overall management to ensure the organization accomplishes its mission and strategic initiatives set forth by the Retirement Board.

Benefits and Membership Services Director

Responsible for directing and managing Membership Services, serves as the health insurance plan administrator, and member education.

Chief Investment Officer

Responsible for managing all investment related duties and risk exposures pertaining to the investment portfolio.

Finance and Technology Director

Responsible for directing and managing all aspects of the Accounting and Technology groups.

General Counsel

Responsible for providing legal advice, representation, and services to the retirement board, the executive director, and DERP staff.

Marketing and Communications Director

Responsible for directing the marketing and communications, implementing strategies, and establishing practices and process that reflect the DERP identity.

Financial Section

CliftonLarsonAllen LLP
CLAconnect.com

INDEPENDENT AUDITORS' REPORT

Retirement Board
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, which comprise the statement of fiduciary net position and statement of changes in fiduciary net position, as of and for the year ended December 31, 2020, 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, 2020, 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.

Other Matters

Report on Summarized Comparative Information

We have previously audited the Plan's 2019 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated June 3, 2020. In our opinion, the summarized comparative information presented herein as of and for the year ended December 31, 2019 is consistent, in all material respects, with the audited financial statements from which it has been derived.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and required supplementary information, 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, and the introductory, investment, actuarial and statistical sections are presented for purposes of additional analysis and are not required parts 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 June 11, 2021, 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 solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on 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

CliftonLarsonAllen LLP

Denver, Colorado
June 11, 2021

Management's Discussion and Analysis

This is an analysis and overview of the financial activities of the Denver Employees Retirement Plan (DERP) for the year ended December 31, 2020. 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, 2020, the fiduciary net position of $2,441,691,073 was restricted for the payment of benefits and to meet DERP's future obligations to its members and their beneficiaries.

For 2020, DERP's total fiduciary net position restricted for benefits increased by $111,519,471, a 4.8% increase from the amount of net position restricted for benefits reported at the end of 2019. The increase for 2020 is the result of favorable market conditions that contributed to net investment earnings of $186,105,031, reduced by benefit payments exceeding contributions received.

Additions to DERP's fiduciary net position included contributions of $107,776,122 from the City and County of Denver (city) and $4,957,503 from the Denver Health and Hospital Authority (DHHA). In addition, active members of DERP contributed $67,845,591.

Deductions from DERP's fiduciary net position during 2020 totaled $255,164,776. This amount is 2.4% higher than the total 2019 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.

DERP's funding objective is to meet its long-term benefit obligations through employer and employee contributions and investment returns. As of January 1, 2020, the date of the last actuarial valuation, the funded ratios for the pension and health benefits funds were 61.7% and 43.7%, respectively.

Overview of the Financial Statements

The following discussion and analysis is intended to serve as an introduction to DERP'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 DERP's assets, liabilities, and net position as of December 31, 2020, with summarized comparative totals for 2019. This statement reflects DERP's net position available for benefits in each the retirement and the health benefits funds as of December 31, 2020, and in the aggregate as of December 31, 2019.

The Statement of Changes in Fiduciary Net Position shows the additions to and deductions from DERP's net position during 2020, with summarized comparative totals for 2019.

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.

The financial statements provide a snapshot of DERP's assets and liabilities as of December 31, 2020 and the financial activities that 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 DERP'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 presents the overall cost of administering DERP. The schedule of Investment Expenses shows the cost associated with investing the assets of DERP.

Financial Analysis

There are several ways to measure DERP's financial status. One means is to determine DERP's fiduciary net position available to pay benefits, which is the difference between total assets and total liabilities. Another way to measure DERP's financial status is to refer to the funded ratio which takes into account the actuarial assets and actuarial liabilities of DERP.

On December 31, 2020, DERP's fiduciary net position totaled $2,441,691,073. Of this amount, $122,516,929 represented funds in the Deferred Retirement Option Plan (DROP) and the Amended Deferred Retirement Option Plan (DROP II) accounts.

DERP's Board has an investment allocation strategy in place and, with the help of an outside consultant, continually monitors DERP's investments. DERP's total assets increased in 2020 due to strong returns from its investment portfolio. As of December 31, DERP's fiduciary net position was:

	2020	2019	Amount of Change	Percentage Change
Assets				
Cash, short-term investments, and receivables	$ 58,172,950	$ 118,492,555	$ (60,319,605)	(50.9)%
Securities lending collateral	82,051,725	81,271,523	780,202	1.0 %
Investments, at fair value	2,383,234,047	2,217,854,919	165,379,128	7.5 %
Capital assets, net	2,716,226	3,168,692	(452,466)	(14.3)%
Total assets	**2,526,174,948**	**2,420,787,689**	**105,387,259**	**4.4 %**
Liabilities				
Accounts payable and unsettled securities purchased	2,432,150	2,538,455	(106,305)	(4.2)%
Unearned contributions	—	6,806,109	(6,806,109)	100.0 %
Securities lending obligations	82,051,725	81,271,523	780,202	1.0 %
Total liabilities	84,483,875	90,616,087	(6,132,212)	(6.8)%
Fiduciary net position	**$ 2,441,691,073**	**$ 2,330,171,602**	**$ 111,519,471**	**4.8 %**

Management's Discussion and Analysis

Reserves

DERP has established a reserve account for accumulated DROP benefits of $122,516,929 as of December 31, 2020. 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 DERP. The remaining DERP fiduciary net position is available to pay retirement and health benefits to all eligible members and beneficiaries.

Plan Activities

Net additions were higher than DERP deductions, resulting in an overall 4.8% increase in DERP fiduciary net position for the year. For the years ended December 31, the Plan's activities were:

	2020	2019	Amount of Change	Percentage Change
Additions				
Contributions	$ 180,579,216	$ 155,934,924	$ 24,644,292	15.8 %
Net investment earnings	186,105,031	293,295,388	(107,190,357)	(36.5)%
Total additions, net	**366,684,247**	**449,230,312**	**(82,546,065)**	**(18.4)%**
Deductions				
Benefits	250,557,542	244,845,016	5,712,526	2.3 %
Administrative expenses	4,607,234	4,256,502	350,732	8.2 %
Total deductions	**255,164,776**	**249,101,518**	**6,063,258**	**2.4 %**
Change in fiduciary net position	111,519,471	200,128,794	(88,609,323)	(44.3)%
Beginning of year fiduciary net position	2,330,171,602	2,130,042,808	200,128,794	9.4 %
End of year Fiduciary net position	**$ 2,441,691,073**	**$ 2,330,171,602**	**$ 111,519,471**	**4.8 %**

Additions to Fiduciary Net Position

The monies needed to pay benefits are accumulated from the contributions made by employers and employees, and income generated from DERP's investments. Income or losses on investments are reported net of investment management expenses. Employer contributions for 2020 totaled $112,733,625, which is 21.8% higher than the amount contributed in 2019, due primarily to an increase in the contribution rate and increase in covered payroll in 2020. During 2020, employees contributed a total of $67,845,591, which is an increase of 7.0% over the 2019 amount, and due to an increase in the contribution rate, increases in covered payroll and purchase of service. DERP's net investment return was approximately 5.7% in 2020 compared to 12.6% in 2019. Top contributors to performance were domestic equities and non-US developed market equities. DERP had net securities lending transaction income of $296,248 in 2020 and $469,282 in 2019.

	2020	2019	Amount of Change	Percentage Change
Employer contributions	$ 112,733,625	$ 92,549,621	$ 20,184,004	21.8 %
Employee contributions	67,845,591	63,385,303	4,460,288	7.0 %
Net appreciation in fair value of investments	200,430,935	262,064,555	(61,633,620)	(23.5)%
Interest, dividends, real estate/alternative investments, and absolute return income	(1,226,470)	45,767,196	(46,993,666)	(102.7)%
Securities lending transactions income, net	296,248	469,282	(173,034)	(36.9)%
Investment expenses	(13,395,682)	(15,005,645)	1,609,963	10.7 %
Total additions, net	**$ 366,684,247**	**$ 449,230,312**	**$ (82,546,065)**	**(18.4)%**

Deductions from Fiduciary Net Position

DERP provides a lifetime pension benefit to its retired members, as well as survivor, disability, and retiree health, dental, and vision benefits. Annual expenses of DERP include retirement benefits, DROP distributions, refunds of employee contributions, and administrative expenses. For the year ended December 31, 2020, deductions totaled $255,164,776, an increase of 2.4% over the amount of 2019 total deductions. The increase is attributed to a 4.2 % 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 4.2% higher per refund on average with the number of member refund requests decreasing by 12.0%. Administrative expenses were slightly higher than those of the previous year due primarily to an increase in salary expenses.

	2020	2019	Amount of Change	Percentage Change
Benefits	$ 245,570,732	$ 239,364,251	$ 6,206,481	2.6 %
Employee refunds	4,986,810	5,480,765	(493,955)	(9.0)%
Administrative expenses	4,607,234	4,256,502	350,732	8.2 %
Total deductions	**$ 255,164,776**	**$ 249,101,518**	**$ 6,063,258**	**2.4 %**

Capital Assets

Capital assets, net of accumulated depreciation, had a net decrease of $452,466 for the year ended December 31, 2020, which is comprised primarily of depreciation expense of $435,263. See Note 8 *Capital Assets* for additional information.

Requests for Information

This management's discussion and analysis is intended to provide DERP's Board, participating employers, and the membership with an overview of DERP's financial position as of December 31, 2020, and a summary of DERP'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 St. | Denver, CO 80203
Phone: 303-839-5419
Fax: 303-839-9525
Web: DERP.org
Email: Help@DERP.org

Statement of Fiduciary Net Position

December 31, 2020
(with Summarized Comparative Totals for December 31, 2019)

	Pension Benefits	Health Benefits	December 31, 2020	December 31, 2019
Assets				
Cash and short-term investments	$ 54,681,744	$ 1,766,879	$ 56,448,623	$ 116,410,500
Securities lending collateral	79,532,309	2,519,416	82,051,725	81,271,523
Receivables				
Unsettled securities sold	261,801	8,293	270,094	198,859
Interest and dividends	1,376,775	43,614	1,420,389	1,848,516
Total receivables	**1,638,576**	**51,907**	**1,690,483**	**2,047,375**
Investments, at fair value				
U.S. Government obligations	150,279,849	4,760,550	155,040,399	111,786,576
Domestic corporate bonds and other fixed income	457,300,781	14,486,327	471,787,108	429,645,552
Domestic stocks	494,557,616	15,666,546	510,224,162	461,851,339
International stocks	513,393,449	16,263,225	529,656,674	401,302,287
Real estate	163,429,374	5,177,099	168,606,473	175,520,888
Alternative investments	502,538,548	15,919,365	518,457,913	524,465,331
Absolute return	28,556,702	904,616	29,461,318	113,282,946
Total investments	**2,310,056,319**	**73,177,728**	**2,383,234,047**	**2,217,854,919**
Prepaid Items	32,805	1,039	33,844	34,680
Capital assets				
Land	416,837	13,204	430,041	430,041
Building and equipment, net of accumulated depreciation	2,215,987	70,198	2,286,185	2,680,179
Construction in Progress	—	—	—	58,472
Total assets	**2,448,574,577**	**77,600,371**	**2,526,174,948**	**2,420,787,689**
Liabilities				
Unsettled securities purchased	378,303	11,984	390,287	490,772
Securities lending obligations	79,532,309	2,519,416	82,051,725	81,271,523
Unearned contributions	—	—	—	6,806,109
Accounts payable	1,979,167	62,696	2,041,863	2,047,683
Total liabilities	**81,889,779**	**2,594,096**	**84,483,875**	**90,616,087**
Fiduciary net position restricted for benefits	**$ 2,366,684,798**	**$ 75,006,275**	**$ 2,441,691,073**	**$ 2,330,171,602**
Fiduciary net position restricted for pension and health benefits	$ 2,244,167,869	$ 75,006,275	$ 2,319,174,144	$ 2,211,851,149
Fiduciary net position restricted for DROP and DROP II benefits	122,516,929	—	122,516,929	118,320,453
Fiduciary net position restricted for benefits	**$ 2,366,684,798**	**$ 75,006,275**	**$ 2,441,691,073**	**$ 2,330,171,602**

See **Notes to Financial Statements**

Statement of Changes in Fiduciary Net Position

Year Ended December 31, 2020

(with Summarized Comparative Totals for the Year Ended December 31, 2019)

	Pension Benefits	Health Benefits	Year ended December 31, 2020	Year ended December 31, 2019
Additions				
Contributions				
City and County of Denver, Colorado	$ 101,199,272	$ 6,576,850	$ 107,776,122	87,996,771
Denver Health and Hospital Authority	4,663,901	293,602	4,957,503	4,552,850
Plan members	63,816,511	4,029,080	67,845,591	63,385,303
Total contributions	**169,679,684**	**10,899,532**	**180,579,216**	**155,934,924**
Investment earnings				
Net appreciation in fair value of investments	194,302,266	6,128,669	200,430,935	262,064,555
Dividends	10,823,692	342,567	11,166,259	15,691,611
Interest	4,998,973	157,606	5,156,579	14,121,518
Real estate, alternative investments, and absolute return loss	(17,009,820)	(539,488)	(17,549,308)	15,954,067
	193,115,111	6,089,354	199,204,465	307,831,751
Investment expenses	(12,984,683)	(410,999)	(13,395,682)	(15,005,645)
	180,130,428	5,678,355	185,808,783	292,826,106
Securities lending transactions income	597,538	18,940	616,478	3,378,470
Securities lending transactions expenses				
Borrower rebates	(214,747)	(6,813)	(221,560)	(2,752,924)
Agent fees	(95,640)	(3,030)	(98,670)	(156,264)
	287,151	9,097	296,248	469,282
Net investment earnings	180,417,579	5,687,452	186,105,031	293,295,388
Total additions, net	**350,097,263**	**16,586,984**	**366,684,247**	**449,230,312**
Deductions				
Retired member benefits	228,118,074	12,976,448	241,094,522	231,074,580
DROP and DROP II benefits paid	4,476,210	—	4,476,210	8,289,671
Refunds of contributions	4,833,725	153,085	4,986,810	5,480,765
Administrative expenses	4,465,837	141,397	4,607,234	4,256,502
Total deductions	**241,893,846**	**13,270,930**	**255,164,776**	**249,101,518**
Change in fiduciary net position	108,203,417	3,316,054	111,519,471	200,128,794
Fiduciary net position held in trust for benefits				
Beginning of year	2,258,481,381	71,690,221	2,330,171,602	2,130,042,808
End of year	**$ 2,366,684,798**	**$ 75,006,275**	**$ 2,441,691,073**	**$ 2,330,171,602**

See **Notes to Financial Statements**

Notes to Financial Statements

Note 1 Plan Description

The Denver Employees Retirement Plan (DERP) administers a cost-sharing multiple-employer defined benefit plan providing pension and post-employment health benefits to eligible members. DERP 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 DERP as a contractual entity. In 2001, DERP became closed to new entrants from DHHA. All risks and costs are shared by the City and County of Denver (city) and DHHA. There is a single actuarial valuation performed annually that covers both the pension and post employment health benefits. All assets of DERP are funds held in trust by DERP 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 DERP are covered under DERP. 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, 2020, DERP membership consisted of the following:

	Pension Benefits	Health Benefits
Retirees and beneficiaries currently receiving benefits	10,520	7,137
Retirees and beneficiaries entitled to health benefits but not receiving any	—	3,402
Terminated employees entitled to benefits but not yet receiving them	3,382	3,382
Current employees:		
Vested	5,165	5,165
Non-vested	3,796	3,796
Total	**22,863**	**22,882**

The following brief description of DERP 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 DERP.

DERP provides retirement, death and disability benefits for its members and their beneficiaries. Members who were hired before September 1, 2004, 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 on or 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 consecutive 36 month period of credited service. Members with five years of credited service may retire at or after age 55 and receive a reduced retirement benefit.

For members who were hired on or after July 1, 2011, they must be age 60 and have combined credited service and age 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 consecutive 60 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 DERP's Retirement Board, and enacted into ordinance by the Denver City Council.

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 DERP awaiting approval of retirement applications. During 2020, 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

DERP 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, DERP 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. DERP 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. Contributions that have been received prior to fiscal year end but not earned in the reporting period are reported as unearned contributions until the reporting period in which they are earned. Expenses are recognized when incurred. Benefits and refunds are recognized when due and payable in accordance with the terms of DERP.

DERP Expenses

DERP's Board acts as the trustee of DERP's assets. The operating and other administrative expenses incurred by the Board, or its employees, in the performance of its duties as DERP's trustee are paid from the assets of DERP accumulated from contributions and investment earnings. Such expenses totaled $4,607,234 in 2020, and are reported as administrative expenses in the accompanying statement of changes in fiduciary net position.

Investments

DERP'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 2020, DERP realized net gain on the disposition of investments of $46,814,637. The calculation of realized gains and losses is independent of the calculation of the net appreciation in the fair value of DERP'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 2020.

Notes to Financial Statements

Investments of DERP 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 acquisition value. DERP'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

DERP's current determination letter issued by the Internal Revenue Service, dated February 27, 2014, qualifies DERP 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 DERP'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 DERP's audited financial statements for the year ended December 31, 2019, from which the summarized information was derived.

Current Economic Conditions

The current economic environment continues to present public employee benefit plans such as DERP 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 DERP 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.

Note 3 Contributions

DERP's funding policy provides for annual contributions at rates determined by an independent actuary recommended by DERP'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 2020, the actuarially determined contribution rates, expressed as a percentage of annual covered payroll, for the pension and health benefits were 23.11% and 1.28%, respectively, for a combined total of 24.39%. The City enacted Ordinance No. 1401-20 in 2020 to reset the combined total contribution rate to 25.00%, effective January 2021. In 2020, employers contributed a total of 15.75% of covered payroll and employees made a pre-tax contribution of 9.25% 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 DERP with the employers' contribution. During 2020, the employers contributed $105,863,173 for pension benefits and $6,870,452 for health benefits while the employees contributed a total of $63,816,511 for pension benefits and $4,029,080 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 DERP. For 2020, in accordance with the January 1, 2020, actuarially determined contribution requirements, the total required contribution was $178,569,190 ($57,961,000 of normal cost and $111,220,034 amortization of the unfunded actuarial accrued liability for pension benefits; $2,050,000 of normal cost and $7,338,156 amortization of the unfunded actuarial accrued liability for health benefits) based on a rate of 24.39% of projected payroll. The actual contribution was $178,758,945 using a rate of 25.00% of covered payroll, which when combined with the members' purchase of service credits of $1,820,271 discussed below, resulted in total contributions of $180,579,216. In accordance with a separate agreement between DHHA and DERP, DHHA made a supplemental contribution in the amount of $546,321, which is included in the total contributions amount.

During 2020, employee contributions totaled $67,845,591 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 $1,820,271 under these provisions during 2020.

Note 4 Deferred Retirement Option Plan (DROP)

Between January 1, 2001, and April 30, 2003, active members of DERP 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 DERP. The balance in each member's DROP account earns interest at a rate equal to the actuarial assumed rate of return, currently 7.25% 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 2020, a total of $8,374,424 in interest was credited to members' DROP accounts. During 2020, a total of $4,349,633 was distributed from the DROP accounts to members who had retired and exited DROP. As of December 31, 2020, the reserve for DROP payments was $117,584,834.

Notes to Financial Statements

Note 5 Amended Deferred Retirement Option Plan (DROP II)

Between May 1, 2003, and August 31, 2003, active members of DERP 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 DERP. The balance in each member's DROP II account earns interest equal to DERP's investment earnings rate provided it is not less than 3% per annum and not more than DERP's annual actuarial assumed rate of return, currently 7.25% 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 $299,265 in interest was credited to members' DROP II accounts during 2020. Also during 2020, a total of $127,581 was distributed to members who had exited DROP II. As of December 31, 2020, the reserve for DROP II payments was $4,932,095.

Note 6 Deposits and Investments

It is the objective of DERP in managing the trust as a whole to provide a net realized nominal rate of return meeting or exceeding the actuarial assumption of 7.25% annualized, over a full market/economic cycle of three to seven years. The relative investment objective of DERP 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	44.0 %	36.0 % - 48.0%
Fixed Income	25.5 %	20.5 % - 30.5%
Real Estate	8.0 %	5.0 % - 11.0%
Absolute Return	5.0 %	2.5 % - 7.5%
MLPs	5.0 %	3.0 % - 7.0%
Alternatives	12.5 %	7.0 % - 18.0%
Total Fund	**100.0 %**	

Investment Performance

For the year ended December 31, 2020, the money-weighted rate of return on the investment assets was 5.4%, net of fees.

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 rate of return expresses investment performance, net of pension/OPEB plan investment expenses, adjusted for the changing amounts actually invested. 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.

Note 6 Deposits and Investments (continued)

Fair Value Measurement

DERP 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.

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.

DERP'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 DERP.

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

Equities and U.S. Treasuries 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. DERP 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. DERP currently does not maintain fixed income securities classified as Level 3.

Notes to Financial Statements

Note 6 Deposits and Investments (continued)

Investments by fair value level	Totals at December 31, 2020	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
U.S. Government Obligations				
Treasuries	$ 26,337,263	$ 26,337,263	$ —	$ —
Agencies	73,172,064	—	73,172,064	—
Total U.S. Government Obligations	**99,509,327**	**26,337,263**	**73,172,064**	**—**
Domestic corporate bonds and other fixed income				
Asset Backed & Corporate Bonds	82,483	—	82,483	—
Index fund	321,474,672	—	321,474,672	—
Total Domestic corporate bonds and other fixed income	**321,557,155**	**—**	**321,557,155**	**—**
Domestic stocks				
Equities	273,669,907	273,669,907	—	—
Index fund	236,554,255	236,554,255	—	—
Total Domestic stocks	**510,224,162**	**510,224,162**	**—**	**—**
International stocks				
Equity funds	486,077,374	486,077,374	—	—
Index fund	43,579,300	43,579,300		
Total International stocks	**529,656,674**	**529,656,674**	**—**	**—**
Publicly traded partnerships				
Master limited partnerships	105,548,917	105,548,917		
Total Publicly traded partnerships	**105,548,917**	**105,548,917**	**—**	**—**
Total Investment by fair value level	**1,566,496,235**	**$ 1,171,767,016**	**$ 394,729,219**	**$ —**
Total Investments measured at the NAV (See detailed schedule on the following page)	816,737,812			
Total Investments	2,383,234,047			
Total Investments measured at amortized cost	33,147,082			
Total Investments measured at fair value	**$ 2,416,381,129**			
Total Invested securities lending collateral	**$ 82,051,725**	—	82,051,725	—

Note 6 Deposits and Investments (continued)

Investments measured at the NAV	Totals at December 31, 2020	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Fixed Income Investments				
Private Debt	$ 153,529,712	$ 54,518,044	Not Eligible	N/A
Emerging Market Debt	52,231,313	—	Monthly	3 Days
Total Fixed Income Investments	**205,761,025**	**54,518,044**		
Real Estate Investments				
Real Estate - Open end	139,235,504	—	Quarterly	20-90 Days
Real Estate - Closed end	29,370,969	23,201,839	Not Eligible	N/A
Total Real Estate Investments	**168,606,473**	**23,201,839**		
Alternative Investments				
Private Equity	313,504,254	80,985,513	Not Eligible	N/A
Energy Investments	62,027,910	31,347,416	Not Eligible	N/A
Timber	37,376,832	—	Not Eligible	N/A
Total Alternative Investments	**412,908,996**	**112,332,929**		
Absolute Return				
Hedge Fund	29,461,318	—	Quarterly	65 Days
Total Absolute Return	**29,461,318**	**—**		
Total Investments measured at the NAV	**$ 816,737,812**	**$ 190,052,812**		

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 commingled 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. Liquidity of these closed-end funds is determined by the monetization of underlying investments, and subject to reinvestment terms.

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.

Notes to Financial Statements

Note 6 Deposits and Investments (continued)

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.

Liquidity of these closed-end funds is determined by the monetization of underlying investments, and subject to reinvestment terms.

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.

Credit Risk

To mitigate the risk that issuers or other counterparties to an investment will not fulfill their obligations, DERP manages credit risk through the constraints on investments specified in each manager's investment guidelines included in DERP'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 DERP's investment in debt securities as of December 31, 2020:

S&P	Moody's	Asset Backed	Corporate	Implicit U.S. Agency Securities	Total
AA+ to AA-	Aa3 to A1			$ 73,172,064	$ 73,172,064
CC+ to CC-	Ca	$ 50,417			50,417
NR	NR		$ 32,066		32,066
		$ 50,417	**$ 32,066**	**$ 73,172,064**	73,254,547
U.S. Treasury Securities					26,337,263
Non-rated Funds					527,235,697
Total					**$ 626,827,507**

NR - no rating available.
Non-rated Funds are investments held in various funds, which are not rated, and not in specific securities.

Concentration of Credit Risk

DERP 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, 2020, DERP 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 DERP would not be able to recover its deposits, investments, or collateral securities in the possession of an outside party. DERP has no formal policy for custodial credit risk for deposits and investments. At December 31, 2020, DERP's cash deposits were collateralized in the amount of $250,000 with the remaining $23,050,941 not collateralized.

Note 6 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. DERP 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. 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, 2020, DERP's fixed income investments had the following maturities by investment type:

Investment Type	Fair Value	Less than 1 Year	1-5 Years	6-10 Years	More than 10 Years
U.S. Treasury securities	$ 26,337,263	$ —	$ 20,317,253	$ 6,019,937	$ 73
U.S. agency securities	73,172,064	—	27,865,234	36,222,110	9,084,720
Asset backed	50,417	—	—	—	50,417
Corporate	32,066	25,816	—	—	6,250
Total	**99,591,810**	**$ 25,816**	**$ 48,182,487**	**$ 42,242,047**	**$ 9,141,460**
Non-rated Funds	527,235,697				
Total	**$ 626,827,507**				

Non-rated Funds are investments held in various funds, which are not rated, and not in specific securities.

Notes to Financial Statements

Note 6 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. DERP's Investment Policy allows 16.0% to 26.0% of total investments to be invested in international equities. DERP's Investment Policy allows 1.0% to 4.0% of total investments to be invested in international fixed income. The following positions represent DERP's total exposure to foreign currency risk (in U.S. Dollars) as of December 31, 2020:

Foreign Currency	Equities	Fixed Income	Total
Euro	$ 98,360,919	$ —	$ 98,360,919
Chinese Yuan	61,585,819	2,940,623	64,526,442
Japanese Yen	50,427,768	—	50,427,768
British Pound Sterling	39,650,338	—	39,650,338
Swiss Franc	35,287,539	—	35,287,539
South Korean Won	31,965,712	992,395	32,958,107
Taiwan Dollar	31,766,260	—	31,766,260
Hong Kong Dollar	25,045,242	—	25,045,242
Indian Rupee	22,329,182	—	22,329,182
Canadian Dollar	22,021,213	—	22,021,213
Brazilian Real	10,401,370	6,863,194	17,264,564
Australian Dollar	14,954,808	—	14,954,808
South African Rand	9,298,250	5,646,205	14,944,455
Mexican Peso	4,033,900	8,174,200	12,208,100
Russian Ruble	5,458,740	5,834,238	11,292,978
Swedish Krona	9,345,933	—	9,345,933
Malaysian Ringgit	2,617,575	5,661,874	8,279,449
Columbian Peso	1,035,309	6,194,634	7,229,943
Argentine Peso	6,721,964	—	6,721,964
Danish Krone	6,548,102	—	6,548,102
Indonesia Rupiah	2,070,619	3,650,969	5,721,588
Thai Bhat	4,922,603	490,974	5,413,577
Polish Zloty	1,816,675	2,292,955	4,109,630
New Israeli Shekel	3,907,177	—	3,907,177
Singapore Dollar	3,886,783	—	3,886,783
Hungary Forint	2,012,016	945,387	2,957,403
Turkey	2,363,631	—	2,363,631
Chilean Peso	1,308,787	898,379	2,207,166
United Arab Emirati Dirham	1,972,948	—	1,972,948
Romanian Leu	—	1,023,734	1,023,734
Qatari Riyal	957,173	—	957,173
Norwegian Krone	872,087	—	872,087
New Zealand Dollar	570,621	—	570,621
Philippine Peso	332,080	146,248	478,328
Pakistani Rupee	273,478	—	273,478
Egyptian Pound	253,944	—	253,944
Czech Koruna	—	41,785	41,785
Peruvian Sol	—	15,669	15,669
Other	933,695	—	933,695
Total	**$ 517,310,260**	**$ 51,813,463**	**$ 569,123,723**

Note 7 Securities Lending Transactions

The Investment Policy permits DERP to participate in a securities lending program to augment income. The program is administered by DERP'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 DERP. 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. DERP 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, 2020, the fair value of underlying securities lent was $137,788,434. The fair value of associated collateral was $145,163,822; of this amount, $82,051,725 represents the fair value of cash collateral as reported on the financial statements and $63,112,097 is the fair value of non-cash collateral not reported on the financial statements. DERP has no credit risk exposure at December 31, 2020, since the collateral held exceeds the value of securities lent. The custodial agent bank indemnifies DERP in the event of a collateral shortfall.

DERP 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 8 Capital Assets

DERP's capital assets activity for the year ended December 31, 2020, was as follows:

	January 1	Additions	Deletions	December 31
Capital assets, not being depreciated				
Land	$ 430,041	$ —	$ —	$ 430,041
Construction in Progress	58,472	—	(58,472)	—
Capital assets, being depreciated				
Building	1,136,014	—	—	1,136,014
Furniture and equipment	6,066,077	41,269	—	6,107,346
Total capital assets, being depreciated	**7,202,091**	**41,269**	**—**	**7,243,360**
Accumulated depreciation				
Building	(1,060,970)	(37,522)	—	(1,098,492)
Furniture and equipment	(3,460,942)	(397,741)	—	(3,858,683)
Total accumulated depreciation	**(4,521,912)**	**(435,263)**	**—**	**(4,957,175)**
Total capital assets being depreciated, net	**2,680,179**	**(393,994)**	**—**	**2,286,185**
Capital assets, net	**$ 3,168,692**	**$ (393,994)**	**$ (58,472)**	**$ 2,716,226**

The 2020 depreciation expense for the pension and health benefit accounts was $412,412 and $22,851 respectively.

Note 9 Commitments and Contingencies

As of December 31, 2020, DERP had commitments for the future purchase of investments in private debt of $54,518,044, real estate of $23,201,839, and alternative investments of $112,332,929. The purpose of such commitments is to assist DERP 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 10 Net Pension Liability of Employers

The components of the net pension liability of the employers at December 31, 2020, were as follows:

Total pension liability	$ 3,923,231,251
Plan fiduciary net position	2,366,684,798
Net pension liability	**$ 1,556,546,453**
Plan fiduciary net position as a percentage of the total pension liability	60.32 %

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of January 1, 2020 rolled forward to a measurement date of December 31, 2020, using the following actuarial assumptions, applied to all prior periods included in the measurement:

Inflation	2.50%
Salary Increases	3.00% to 7.00%
Investment Rate of Return	7.25%

The actuarial valuation as of January 1, 2020 was rolled forward using a 7.25% discount rate to reflect the rate adopted during the measurement period.

The mortality tables were based on the RP-2014 Mortality Table (gender-specific) projected with the Ultimate MP Scale with a multiplier of 110% male and 105% female. The Disabled mortality tables were based on the RP-2014 Disabled Life Mortality Table for Males and Females projected with the Ultimate MP Scale.

The actuarial assumptions used in the January 1, 2020 valuation were based on the results of an actuarial experience study as of January 1, 2018.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return were adopted by DERP's trustees after considering input from DERP'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, 2020 these best estimates are summarized in the table on the following page.

Note 10 Net Pension Liability of Employers (continued)

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Public Equity	**44.0%**	
US Equity		
US Large Cap	18.0%	7.2%
US Small Cap	4.0%	7.9%
International Equity		
Developed Markets	14.0%	7.9%
Emerging Markets	8.0%	9.1%
Fixed Income	**25.5%**	
Core Fixed Income	17.0%	2.6%
Private Debt		
Private Debt	4.0%	6.2%
Distress Debt	2.5%	7.0%
Emerging Market Debt	2.0%	4.8%
Real Estate	**8.0%**	7.5%
Absolute Return	**5.0%**	4.9%
MLPs	**5.0%**	8.5%
Alternatives	**12.5%**	
Private Equity	7.0%	9.4%
Natural Resources	5.5%	8.8%
Total	**100.0%**	

A single discount rate of 7.25% 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 7.25%. The projection of cash flows used to determine this single rate assumed that DERP 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 DERP 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 DERP's net pension liability, calculated using a single discount rate of 7.25%, as well as what DERP'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 6.25%	Current Single Discount Rate Assumption 7.25%	1% Increase 8.25%
Net Pension Liability	$ 1,987,908,954	$ 1,556,546,453	$ 1,194,636,648

Notes to Financial Statements

Note 11 Net Other Post-Employment Benefits (OPEB) Liability of Employers

The components of the net OPEB liability of the employers at December 31, 2020, were as follows:

Total OPEB liability	$	172,066,810
Plan fiduciary net position		75,006,275
Net OPEB liability	**$**	**97,060,535**
Plan fiduciary net position as a percentage of the total pension liability		43.59 %

Actuarial Assumptions

The total OPEB liability was determined by an actuarial valuation as of January 1, 2020 rolled forward to a measurement date of December 31, 2020, using the following actuarial assumptions, applied to all prior periods included in the measurement:

Inflation	2.50%
Salary Increases	3.00% to 7.00%
Investment Rate of Return	7.25%

The actuarial valuation as of January 1, 2020 was rolled forward using a 7.25% discount rate to reflect the rate adopted during the measurement period.

The mortality tables were based on the RP-2014 Combined Mortality Table (gender-specific) projected with the Ultimate MP Scale with a multiplier of 110% male and 105% female. The Disabled mortality tables were based on the RP-2014 Disabled Life Mortality Table for Males and Females projected with the Ultimate MP Scale.

The actuarial assumptions used in the January 1, 2020 valuation were based on the results of an actuarial experience study as of January 1, 2018.

The long-term expected rate of return on OPEB 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 OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return were adopted by DERP's trustees after considering input from DERP's investment consultant and actuary. For each major asset class that is included in the OPEB plan's target asset allocation as of December 31, 2020 these best estimates are summarized in the table on the following page.

Note 11 Net Other Post-Employment Benefits (OPEB) Liability of Employers (continued)

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Public Equity	**44.0%**	
US Equity		
US Large Cap	18.0%	7.2%
US Small Cap	4.0%	7.9%
International Equity		
Developed Markets	14.0%	7.9%
Emerging Markets	8.0%	9.1%
Fixed Income	**25.5%**	
Core Fixed Income	17.0%	2.6%
Private Debt		
Private Debt	4.0%	6.2%
Distress Debt	2.5%	7.0%
Emerging Market Debt	2.0%	4.8%
Real Estate	8.0%	7.5%
Absolute Return	5.0%	4.9%
MLPs	5.0%	8.5%
Alternatives	**12.5%**	
Private Equity	7.0%	9.4%
Natural Resources	5.5%	8.8%
Total	**100.0%**	

A single discount rate of 7.25% was used to measure the total OPEB liability. This single discount rate was based on the expected rate of return on OPEB plan investments of 7.25%. The projection of cash flows used to determine this single rate assumed that DERP member and employer contributions will be made at the current contribution rate. Based on these assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current DERP members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The OPEB Plan is not impacted by healthcare cost trends because the benefit is a flat dollar amount, independent of healthcare costs. Regarding the sensitivity of the net OPEB liability to changes in the single discount rate, the following presents DERP's net OPEB liability, calculated using a single discount rate of 7.25%, as well as what DERP's net OPEB 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 6.25%	Current Single Discount Rate Assumption 7.25%	1% Increase 8.25%
Net OPEB Liability	$ 114,306,256	$ 97,060,535	$ 82,426,336

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,	2020	2019
Total Pension Liability		
Service Cost (Entry-Age Normal)	$ 58,953,668	$ 56,355,775
Interest on the Total Pension Liability	271,949,654	261,392,243
Benefit Changes	—	—
Difference between Expected and Actual Experience	19,741,953	56,265,688
Transition to Entry-Age Normal[1]	—	—
Assumption/Method Changes[2][3]	96,394,671	—
Benefit Payments	(237,428,009)	(231,722,495)
Net Change in Total Pension Liability	209,611,937	142,291,211
Total Pension Liability - Beginning	3,713,619,314	3,571,328,103
Total Pension Liability - Ending (a)	**$ 3,923,231,251**	**$ 3,713,619,314**
Plan Fiduciary Net Position		
Employer Contributions	$ 105,863,173	$ 87,464,822
Employee Contributions	63,816,511	60,074,876
Pension Plan Net Investment Income	180,417,579	284,110,225
Benefit Payments	(237,428,009)	(231,722,495)
Pension Plan Administrative Expense	(4,465,837)	(4,123,494)
Other Income	—	—
Net Change in Plan Fiduciary Net Position	108,203,417	195,803,934
Total Fiduciary Net Position - Beginning	2,258,481,381	2,062,677,447
Total Fiduciary Net Position - Ending (b)	**$ 2,366,684,798**	**$ 2,258,481,381**
Net Pension Liability - Ending (a)-(b)	**$ 1,556,546,453**	**$ 1,455,137,933**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	**60.32 %**	**60.82 %**
Covered Payroll	**$ 713,566,300**	**$ 706,441,299**
Net Pension Liability as a Percentage of Covered Payroll	**218.14 %**	**205.98 %**

(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%.

(3) As of October 1, 2017, the valuation interest rate was lowered from 7.75% to 7.50%.

(4) As of October 1, 2020, the valuation interest rate was lowered from 7.50% to 7.25%.

2018	2017	2016	2015	2014
$ 49,796,219	$ 49,158,616	$ 46,577,860	$ 46,419,739	$ 42,793,142
248,598,306	241,977,403	237,104,293	229,130,437	221,367,921
—	—	—	—	—
13,946,045	14,324,507	16,967,117	29,122,513	—
—	—	—	—	140,652,205
80,783,495	69,289,533	—	73,157,470	—
(220,006,730)	(207,612,390)	(194,541,616)	(183,992,079)	(172,686,029)
173,117,335	167,137,669	106,107,654	193,838,080	232,127,239
3,398,210,768	3,231,073,099	3,124,965,445	2,931,127,365	2,699,000,126
$ 3,571,328,103	**$ 3,398,210,768**	**$ 3,231,073,099**	**$ 3,124,965,445**	**$ 2,931,127,365**
81,719,744	71,731,309	$ 68,794,871	$ 67,234,597	$ 59,941,041
52,700,679	50,599,952	48,037,800	46,689,696	39,521,451
(73,146,389)	302,942,063	147,443,477	(35,746,029)	101,595,704
(220,006,730)	(207,612,390)	(194,541,616)	(183,992,079)	(172,686,029)
(4,016,288)	(3,899,901)	(3,742,451)	(3,785,416)	(3,638,296)
—	—	—	—	—
(162,748,984)	213,761,033	65,992,081	(109,599,231)	24,733,871
2,225,426,431	2,011,665,398	1,945,673,317	2,055,272,548	2,030,538,677
$ 2,062,677,447	**$ 2,225,426,431**	**$ 2,011,665,398**	**$ 1,945,673,317**	**$ 2,055,272,548**
$ 1,508,650,656	**$ 1,172,784,337**	**$ 1,219,407,701**	**$ 1,179,292,128**	**$ 875,854,817**
57.76 %	**65.49 %**	**62.26 %**	**62.26 %**	**70.12 %**
$ 671,120,225	**$ 636,738,387**	**$ 613,284,274**	**$ 602,454,420**	**$ 554,103,740**
224.80 %	**184.19 %**	**198.83 %**	**195.75 %**	**158.07 %**

Required Supplementary Information (Unaudited)

Schedule of Changes in Net OPEB Liability and Related Ratios

(Ultimately 10 Fiscal Years will be displayed)

Fiscal year ending December 31,	2020	2019	2018	2017
Total OPEB Liability				
Service Cost (Entry-Age Normal)	$ 2,060,169	$ 2,073,228	$ 1,932,881	$ 2,103,783
Interest on the Total OPEB Liability	12,345,681	12,489,835	11,796,771	11,700,994
Benefit Changes	—	—	—	—
Difference between Expected and Actual Experience	(3,134,783)	(3,352,740)	627,097	—
Transition to Entry-Age Normal	—	—	—	—
Assumption/Method Changes	3,881,572	—	7,900,882	—
Benefit Payments	(13,129,533)	(13,122,521)	(13,050,165)	(13,171,022)
Net Change in Total OPEB Liability	2,023,106	(1,912,198)	9,207,466	633,755
Total OPEB Liability - Beginning	170,043,704	171,955,902	162,748,436	162,114,681
Total OPEB Liability - Ending (a)	**$ 172,066,810**	**$ 170,043,704**	**$ 171,955,902**	**$ 162,748,436**
Plan Fiduciary Net Position				
Employer Contributions	6,870,452	5,084,799	$ 4,952,754	$ 4,367,474
Employee Contributions	4,029,080	3,310,427	3,132,783	3,005,989
OPEB Plan Net Investment Income	5,687,452	9,185,163	(2,364,015)	10,422,137
Benefit Payments, Including Refunds of Employee Contributions	(13,129,533)	(13,122,521)	(13,050,165)	(13,171,022)
OPEB Plan Administrative Expense	(141,397)	(133,008)	(133,128)	(133,959)
Other		—	—	—
Net Change in Plan Fiduciary Net Position	3,316,054	4,324,860	(7,461,771)	4,490,619
Total Fiduciary Net Position - Beginning	71,690,221	67,365,361	74,827,132	70,336,513
Total Fiduciary Net Position - Ending (b)	**$ 75,006,275**	**$ 71,690,221**	**$ 67,365,361**	**$ 74,827,132**
Net OPEB Liability - Ending (a)-(b)	**$ 97,060,535**	**$ 98,353,483**	**$ 104,590,541**	**$ 87,921,304**
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability	**43.59 %**	**42.16 %**	**39.18 %**	**45.98 %**
Covered Payroll	**$ 713,566,300**	**$ 706,441,299**	**$ 671,120,225**	**$ 636,738,387**
Net OPEB Liability as a Percentage of Covered Payroll	**13.60 %**	**13.92 %**	**15.58 %**	**13.81 %**

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
2014	$ 2,931,127,365	$ 2,055,272,548	$ 875,854,817	70.12 %	$ 554,103,740	158.07 %
2015	3,124,965,445	1,945,673,317	1,179,292,128	62.26 %	602,454,420	195.75 %
2016	3,231,073,099	2,011,665,398	1,219,407,701	62.26 %	613,284,274	198.83 %
2017	3,398,210,768	2,225,426,431	1,172,784,337	65.49 %	636,738,387	184.19 %
2018	3,571,328,103	2,062,677,477	1,508,650,626	57.76 %	671,120,225	224.80 %
2019	3,713,619,314	2,258,481,381	1,455,137,933	60.82 %	706,441,299	205.98 %
2020	3,923,231,251	2,366,684,798	1,556,546,453	60.32 %	713,566,300	218.14 %

Schedule of the Net OPEB 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
2017	$ 162,748,436	$ 74,827,132	$ 87,921,304	45.98 %	$ 636,738,387	13.81 %
2018	171,955,902	67,365,361	104,590,541	39.18 %	671,120,225	15.58 %
2019	170,043,704	71,690,221	98,353,483	42.16 %	706,441,299	13.92 %
2020	172,066,810	75,006,275	97,060,535	43.59 %	713,566,300	13.60 %

Required Supplementary Information (Unaudited)

Schedules of Employer Contributions

Pension Benefit

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)
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)	519,003,905	11.55 %
2015	59,811,786	67,234,597	(7,422,811)	545,955,845	12.32 %
2016	66,135,502	68,794,871	(2,659,369)	563,316,210	12.21 %
2017	76,859,156	71,731,309	5,127,847	636,738,387	11.27 %
2018	82,818,225	81,719,744	1,098,481	671,120,225	12.18 %
2019	106,297,687	87,464,822	18,832,865	706,441,299	12.38 %
2020	102,905,472	105,863,173	(2,957,701)	713,566,300	14.84 %

OPEB Benefit

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)
2011	$ 4,965,060	$ 4,202,033	$ 763,027	$ 517,398,105	0.81 %
2012	5,153,185	4,241,291	911,894	517,396,257	0.82 %
2013	4,721,761	4,135,064	586,697	531,559,017	0.78 %
2014	4,093,763	4,332,376	(238,613)	519,003,905	0.83 %
2015	4,322,064	4,380,107	(58,043)	545,955,845	0.80 %
2016	4,253,678	4,364,140	(110,462)	563,316,210	0.77 %
2017	4,837,383	4,367,473	469,910	636,738,387	0.69 %
2018	5,208,156	4,952,754	255,402	671,120,225	0.74 %
2019	6,168,489	5,084,799	1,083,690	706,441,299	0.72 %
2020	5,732,330	6,870,452	(1,138,122)	713,566,300	0.96 %

Notes to Schedules of Contributions (Pension and OPEB)

Valuation Date:	**January 1, 2020**
Notes	Actuarially determined contribution rates are calculated as of December 31 of each year and are applicable for the following calendar (fiscal) year.

Key Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age method.Credit method.
Asset Valuation Method	The market value of assets less any unrecognized investment gains or losses from the prior five years (with 20% of each year's gains/losses recognized annually). In the initial year, only the unrecognized loss from the prior year (2018) is reflected. In prior years, the asset valuation method was a smoothed market value.
Amortization Method	As of the 2019 actuarial valuation, the UAL as of January 1, 2019 is amortized over a closed 20-year period as a level percentage of payroll, with future changes in the UAL amortized over a new closed 20-year layers. In prior years, the ADC was determined using fixed 30-year layers.
Discount rate	7.50% net of investment expenses (reduced from 7.75% in 2017)
Amortization growth rate	3.00% (reduced from 3.25% in 2017)
Price inflation	2.50% (reduced from 2.75% in 2017)
Salary increases	3.00% (reduced from 3.25% in 2017) plus merit component based on years of service.
Mortality	Adjusted RP-2014 Mortality Tables, with generational projections using Ultimate MP Scale (changed in 2018 from RP-2000 Combined Mortality Projected with Scale AA to 2020).

A complete description of the methods and assumptions used to determined contribution rates for the year ending December 31, 2020 can be found in the January 1, 2020 actuarial valuation report.

Required Supplementary Information (Unaudited)

Schedule of Investment Returns

(Pension and OPEB Plans)
Last 10 Fiscal Years

Fiscal Year Ending December 31,	Annual Return [1]
2011	(0.30)%
2012	13.09 %
2013	18.18 %
2014	5.41 %
2015	(1.78)%
2016	7.70 %
2017	15.14 %
2018	(2.23)%
2019	13.18 %
2020	5.40 %

[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 rate of return expresses investment performance, net of pension/OPEB plan investment expenses, adjusted for the changing amounts actually invested. 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.

Schedule of Administrative Expenses
Year ended December 31, 2020

Personnel services:	
Salaries	$ 1,754,227
Employee benefits	668,645
Total personnel services	**2,422,872**
Professional services:	
Actuarial	145,645
Legal	67,445
Retirement board	11,776
Audit	53,200
Consultation	4,800
Total professional services	**282,866**
Office operations:	
Plan insurance	109,802
Postage	36,503
Office forms and printing	13,946
Office equipment	15,101
Employee travel and conferences	190
Telephone	12,274
Membership education	97,428
Miscellaneous operating	14,279
Employee education	8,390
Office supplies	7,236
Publications	3,376
Total office operations	**318,525**
Computer operations:	
Software licenses and hosting fees	739,896
Supplies and other expenses	17,555
Total computer operations	**757,451**
Miscellaneous administrative expenses:	
Building operations	390,257
Depreciation expense	435,263
Total miscellaneous administrative expenses	**825,520**
Total	**$ 4,607,234**

Supporting Schedules

Schedule of Investment Expenses

Year ended December 31, 2020

Alternative investment portfolio management	$ 4,289,979
International equity portfolio management	1,936,621
Real estate portfolio management	1,888,506
Domestic equity portfolio management	1,767,525
Fixed income portfolio management	1,700,890
Absolute return investment portfolio management	814,624
Other investment related expenses	902,855
Custody	94,682
Total	**$ 13,395,682**

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Investment Section

MEKETA
INVESTMENT GROUP

5796 Armada Drive
Suite 110
Carlsbad, CA 92008

760.795.3450
Meketa.com

MEMORANDUM

TO: Board Members, Investment Staff, Denver Employees Retirement Plan
FROM: Leandro Festino, Mika Malone, Paola Nealon, Jonas Noack, Meketa Investment Group
DATE: May 27, 2021
RE: Investment Consultant's Statement for CAFR

This letter reviews the investment performance of the Denver Employees Retirement Plan (DERP) for the year ending December 31, 2020.

DERP seeks appropriate returns through the use of Modern Portfolio Theory risk/return concepts, with the intent of providing benefits to plan participants and their beneficiaries. To this end, DERP strives to align the portfolio's asset allocation, investments, and other related decisions with this goal in mind.

This alignment is a fundamental part of the Retirement Plan's Board meetings, where performance is examined (both on an overall portfolio basis and at the manager level), asset allocation is reviewed and modified to fit changes in expected return, strategic decisions are discussed, and the Plan's liabilities are reviewed. Meketa Investment Group, DERP's investment consultant, works in concert with DERP staff and other vendors such as DERP's actuary, to provide guidance to the Board regarding performance evaluation, asset allocation, manager assessment, and other areas, as detailed in the contract governing our services.

Meketa calculates investment performance statistics using fair values received from the custodian, BNY Mellon, and from manager statements. Rates of return are presented using a time-weighted rate of return methodology based upon estimated market values.

2020 Calendar Year in Review

We entered calendar year 2020 facing considerable uncertainty regarding the path of fiscal and monetary policies, elevated valuations, declining growth in China, a general slowdown in global growth, the potential for additional trade issues, and political uncertainty in Europe and in the US. All these concerns weighed heavily on most investors' minds. That is, until a new virus, COVID-19, hit the globe and we were faced with extraordinary circumstances – regional lockdowns, and businesses and school closures. As we attempted to flatten the curve, economies essentially shut down.

By most accounts, global financial markets entered calendar 2020 on relatively strong footing. Equity markets continued their march higher early in the year, despite elevated valuations, as investors increasingly began to price in a reflationary growth impulse, as suggested by leading economic indicators in global markets. However, a relatively optimistic backdrop underwent a remarkably rapid shift over the course of just a few weeks.

In January, the first COVID-19 case, reportedly originating in Wuhan, China, was acknowledged by Chinese authorities. By March, the virus began to spread globally, particularly in Europe, with Italy and Spain reporting massive spikes in infections and mortality rates. By virtue of greater freedom of travel and 21st century globalization, the virus spread far more quickly than was initially expected based on previous viral outbreaks. In an effort to contain the spread, countries responded by enacting stringent lockdowns, or "stay at home orders,"

May 27, 2021

leading to an abrupt halt in production and consumption. Layoffs expanded dramatically and swiftly, as businesses were forced to close in an effort to stop the disease from spreading.

The impact of global lockdowns on financial markets was extreme. All major stock indices saw sharp selloffs in the first quarter of 2020. Volatility (the VIX), which had been relatively benign in 2019, having finished the year slightly below 14 and well below its long-term average, then spiked above its prior peak during the Global Financial Crisis, briefly breaching 80 in early March.

At the depth of the drawdown from January 1 to March 23 the Russell 3000 index returned -31.6%, the MSCI EAFE Index (developed market equities) -33.2%, and the MSCI Emerging Markets Index (emerging market equities) -31.8%. The perception of acute stress in credit markets, both in the US and abroad, led to solvency fears, as the Barclays High Yield index fell -19.8%. By April, oil futures had turned negative, with May delivery contract oil price of -$37 a barrel. Investors universally fled risk assets, in all forms, during the selloff in favor of perceived safer assets like US Treasuries.

Over this same time period, the spread between large cap stocks - which tend to experience less volatility in drawdowns - and small cap stocks - which are more pro-cyclical and volatile - widened during the selloff. The Russell 1000 index returned -31.1% versus -39.7% for the Russell 2000 index, a spread of nearly 10.0%. The spread between large cap growth and small cap value further expanded during the selloff, with the Russell 1000 Growth declining 25.1% and the Russell 2000 Value falling 44.3%, for a spread of nearly 20.0%.

The rapid unwind of risk in early 2020, one of the fastest market selloffs in modern financial history, reinforced the importance of diversification. While equity and credit markets fell precipitously, bonds provided an offset for investors. The Bloomberg Barclays US Aggregate generated a return of 1.0% over the course of the drawdown noted above, and long-term Treasuries, measured by the Bloomberg Barclays Long US Government index, generated a return of 20.2%.

The volatility of the pandemic was exacerbated by volatility in oil prices, which experienced a rapid collapse early in 2020. Commodity and natural resource asset classes both participated in the broader market selloff. The Bloomberg Commodity Index and the S&P Global Natural Resources Index were down -23.1% and -44.6% at the trough, respectively.

To combat the expected significant decline in economic activity, fiscal and monetary authorities globally responded with immediate and historic stimulus measures. The Federal Reserve, in the midst of the March drawdown, immediately cut the Fed Funds Target Rate effectively to zero, and subsequently introduced aggressive stimulus measures, including backstop liquidity, funding programs, and trillions of dollars in promised asset purchases. Meanwhile, fiscal authorities released over $2.4 trillion in targeted stimulus, with the promise of additional measures in the future. Importantly, both the speed of the response, and the breadth of the response, made the joint monetary/fiscal stimulus unprecedented.

Swift federal support for unemployment benefits and state mandated mortgage, rental, and loan forbearance programs offset the sudden stop in economic activity in March and April. Comprehensive loan programs helped to support main street small and medium size businesses rescale their business activities to comply with social distancing rules. In spite of unprecedented federal and state support, unemployment soared to nearly 15.0% in the second quarter of 2020. In the second half of the year, as the economy stabilized and partially reopened the unemployment rate fell and by December, the unemployment rate was 6.7%. By the end of 2020, approximately 10.7 million Americans were still unemployed though many continued to receive unemployment benefits. In contrast to high unemployment rates, the housing market benefited from record low mortgage rates so that many refinanced homes or purchased homes; providing a welcome tailwind for the US economy in the construction,

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retail, and financial sectors. The median home price rose 8.0% in 2020. Commercial real estate values suffered from falling vacancies and declining rents for most of the year but showed signs of recovery by year end.

In Japan and Europe, similarly aggressive monetary and fiscal measures were implemented, although it should be noted that they entered the crisis with no room to cut policy rates, so their focus was on quantitative easing and fiscal measures. China's rapid and aggressive response to the COVID pandemic was matched with comprehensive countercyclical stimulus spending and easing of credit conditions. Beijing successfully offset the collapse in consumer spending that resulted from lockdowns, with robust fixed asset investment in real estate and infrastructure. The Chinese economic response supported the nearby Asian economies of Taiwan, Hong Kong, and South Korea. Demand for medical supplies and technology supported Asian exports to the US and Europe.

Robust stimulus across global developed and emerging economies, coupled with incremental positive news regarding the spread of COVID-19, and economies slowly reopening, set the stage for a relatively rapid rebound in risk assets in the second calendar quarter. This recovery, particularly in the riskier assets, continued throughout the year. In addition to the main themes noted above, the year closed out with the leadership change within the US government following the November elections and, soon after, the approval of the first COVID vaccine. Vaccine approvals were a key catalyst for the significant year-end market rally that saw strong market performance across all major asset classes.

US equities, as represented by the Russell 3000 Index, finished the calendar year with a 20.9% return. Emerging markets (MSCI Emerging Markets) delivered 18.3% for the year, with the index up 19.7% in the fourth quarter alone as a weak dollar and vaccine efficacy and approvals exceeded expectations and helped bolster returns. The MSCI EAFE Index, representing foreign developed markets, also saw stronger currency serving as a tailwind in the fourth quarter, with the euro rising against the dollar. Despite strong performance in Q4 of 16.0%, the EAFE Index, however was the equity laggard of the year returning 7.8%.

In the wake of positive vaccine news, we saw a rotation away from growth stocks and into value stocks at year-end. For the fourth quarter, the Russell 3000 Value index returned 17.2% versus 12.4% for its growth counterpart. That said, for the year, the extreme spread between the style indices continued to be evident. The Russell 3000 Growth index returned 38.3% for the calendar year versus 2.9% for the Russell 3000 Value index – a 35 percentage point performance difference. The strong performance by the growth index was largely driven by the tech sector's strong return for the year (+45.2%) and driven in part by the work from home environment and increase in technological needs.

Similarly, we saw a rotation away from large cap stocks into small cap stocks. As of September 30, 2020, the Russell 1000 Index returned 6.4% for the year-to-date, versus -8.7% for the Russell 2000 Index over the same period. However, the fourth quarter performance dispersion between the Russell 1000 Index (+13.7%) and the Russell 2000 Index (+31.4%) was so pronounced that small cap performance nearly outpaced large cap for the full year. As of December 31, the Russell 1000 Index returned 21.0% for the year versus 20.0% for the Russell 2000 Index, essentially closing out the gap that had previously existed.

Within international developed markets, the MSCI EAFE opportunity set, of which Japan, the UK, and the Eurozone are featured most heavily, underperformed relative to the US and emerging markets. This can largely be attributed to the weak footing on which they entered the crisis to begin with, the robust spread of COVID-19; Europe's aging population and structure of care homes; and the stringency of lockdowns in many of these economies. Within emerging markets, we witnessed a wide spread between countries that were able to manage the virus' spread and deployed aggressive countermeasures (e.g., China: 27.3% YTD return) relative to countries facing already-dire economic circumstances

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(e.g., Brazil: -20.1%, Mexico: -4.2%, and South Africa: -9.5%). The same style regime observed in the US, with growth outperforming value through the first three quarters of the year, persisted in both developed and emerging international markets. Again, the relative performance of financials and information technology and consumer stocks were key drivers of the spread between value and growth indices.

The US Treasury yield curve declined materially during 2020 as investors flocked to this safe-haven asset early in the year and aggressive Federal Reserve policies were enacted through policy rate cuts and the quantitative easing program. As such, fixed income markets generated relatively strong results for the year. The Bloomberg Barclays US Aggregate produced a total return of 7.5% over the past year and the Bloomberg Barclays TIPS returned 11.0%. High yield bonds retraced their earlier losses, with the Bloomberg Barclays US High Yield index finishing at 7.1% for the year. However, the standout performer within fixed income was long maturity Treasuries, with the Bloomberg Barclays Long US Government index gaining an impressive 17.6% over the past year.

While equities, and especially large cap growth equities, as well as fixed income, produced relatively strong results despite the COVID-19 shock, we saw mixed results from other asset classes. While energy prices have recovered to some extent, with WTI crude oil trading at $48.55 at the end of the calendar year, the current level still represents a drawdown relative to a year ago, when it traded at $61.14. Natural resource stocks and commodities, on account of uncertainty regarding supply gluts, especially in the oil market, and the uncertainty regarding the recovery of demand, produced weak total returns despite strong fourth quarter performance to close out the year. The S&P Global Natural Resources Index returned 21.9% in Q4 but a paltry 0.7% for the 1-year, while the Bloomberg Commodity Index returned 10.2% in Q4 and -3.1% for the 1-year. One of the hardest hit asset classes in markets in 2020 has been real estate, where fears regarding utilization rates in commercial real estate have prevented the asset class from participating in the recovery to the same extent as other asset classes. The MSCI US REIT Index returned -7.6%.

Elsewhere, an increasingly robust acceleration in money supply growth, widening fiscal deficits on account of unprecedented stimulus measures, and an environment of stagnating growth expectations manifesting in a collapse in real yields, resulted in a significant increase in demand for physical gold. Over the course of the calendar year, the price of gold increased from $1,520.55 per ounce at the start of 2020 to $1,898.36 an increase of 24.5%.

2021 Outlook

After the elections in November 2020, a degree of political uncertainty persisted through January 2021. After the January Capitol protests and swearing in of the Biden administration, markets repriced their positive outlook for the US economy. COVID vaccinations proceeded ahead of consensus and by the time President Biden was sworn into office over one million COVID vaccinations had been administered. Economic forecasts for the US economy have been revised sharply higher for 2021 and 2022. However, some economic uncertainties could prove challenging. These include:

1) Economies opening too soon from virus-related restrictions amid uncertainty regarding new virus variants and vaccine deployment challenges, and ultimately needing to re-deploy lockdown policies.

- A number of countries, including the US, whose policies allowed for greater flexibility in social distancing experienced spikes in infections, and cases of new virus variants appear to be more transmissible. Additionally, supply dynamics and logistical challenges with the vaccine are driving a slower pace of inoculation than expected. This confluence of challenges could move governments to re-impose distancing measures, which would likely depress employment and economic growth.

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May 27, 2021

2) Consumers permanently, or for an extended period, changing economic behaviors.

- The COVID-19 pandemic resulted in an immediate change to societal norms that could last beyond the actual virus impact. Changing consumer spending and work-environment preferences could limit large events including concerts and sports, dining out, travel, and leisure activities. As consumers make up a large portion of developed economy GDPs, this could drive many companies to failure, with lasting impacts on the economy. Stimulus checks and unemployment benefits may fall off quickly by the end of the summer so that consumer demand may not prove to be long-lived.

DERP 2020 Performance

DERP's portfolio returned 5.7% in 2020, underperforming the Policy Index return of 10.0%. For 2020, DERP's performance ranked in the bottom quartile (97th percentile) of the peer universe[1] (1st percentile is best and 100th is worst). The US Equity Composite and Small Cap Composite had the strongest absolute performance during 2020, returning 24.2% and 29.2%, respectively. The Energy Composite had the weakest 2020 performance at -44.0%.

Over the trailing five-year period, the DERP portfolio returned 7.7% on average annually, exceeding the current actuarial assumed rate of return of 7.25%. Over a ten-year period, DERP returned 7.1%, slightly trailing the actuarial assumed rate of return. Additionally, DERP returned 8.5% (annualized) since inception (January 1986), and ranks in the top quartile (25th percentile) of the peer universe since that time.

Performance for DERP over the 2020 calendar year trailed the benchmark's return, but provided a quality, positive return given the drastic drawdown the market experienced at the start of the year. DERP's underperformance relative to peers in 2020 is due in part to its defensive positioning, which compares more favorably versus peers during times of increased market volatility (as experienced in 2018 and the first quarter of 2020). Additionally, DERP's greater allocation to Energy, lower allocations to Public Equities (relative to peers) and value-bias within the Public Equity composites, detracted from their peer rankings in 2020, as Energy lagged the broader market, Public Equities greatly outperformed other asset classes for the year, and value continued to underperform growth for the majority of 2020. Performance in the last few months of 2020 and the first few months of 2021 was ahead of benchmark and peers, as value, energy, and small cap companies gained momentum, however.

During the past year, the Board reviewed the asset allocation of the Plan, and made a few minor adjustments. We remain convinced that a moderately conservative positioning is appropriate given the risks faced globally, including high valuations of most asset classes, and the unique circumstances affecting the Plan, such as its funding status, net cash flow position, and ratio of active participants to retirees. We will continue to monitor the portfolio and work with staff to advise the Board of recommended material positioning changes. We look forward to continuing to work with staff and the Board to assist the Plan in meeting its obligations to participants and their beneficiaries.

Sincerely,

LFestino

Leandro Festino, CFA, CAIA
Managing Principal, Consultant
LAF/JEN/sf

[1] Based on InvestorForce peer rankings: Defined Benefit Public Funds over $1 billion in assets.

Investment Policy

The Denver Employees Retirement Plan (DERP) was established on January 1, 1963, as a defined benefit pension plan. DERP Board assumes full and absolute responsibility for establishing, implementing, and monitoring adherence to the pension fund policy. The investment of the Trust shall be in accord with all applicable laws of the State of Colorado and the City and County of Denver. Specifically:

(a) 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.

(b) 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 with like aims.

(c) Investments shall be diversified so as to minimize the risk of loss and to maximize rate of return, unless under the circumstances it is clearly prudent not to do so.

Investment Responsibilities

DERP Board is responsible for formulating investment strategies, asset allocation, and monitoring the performance of investment management firms and professionals. DERP Board has formal written objectives and guidelines contained in DERP'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 DERP Board.

The investment managers are each responsible for implementing investment strategies in accordance with the stated investment policies, guidelines, and objectives of DERP. Each manager is responsible for optimizing investment return within its guideline constraints and in the sole interest of DERP's members and beneficiaries. The Board has directed all investment managers to vote proxies in the interest of DERP'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) The investment objective for the Trust as a whole is to provide a net realized rate of return meeting or exceeding the actuarial assumption of seven point two five percent (7.25%), annualized, over a full market/economic cycle of three to seven years.

(b) Consistent with this minimum investment objective, an attempt to maintaining an efficient portfolio determined by the risk/return concepts of Modern Portfolio Theory will be made.

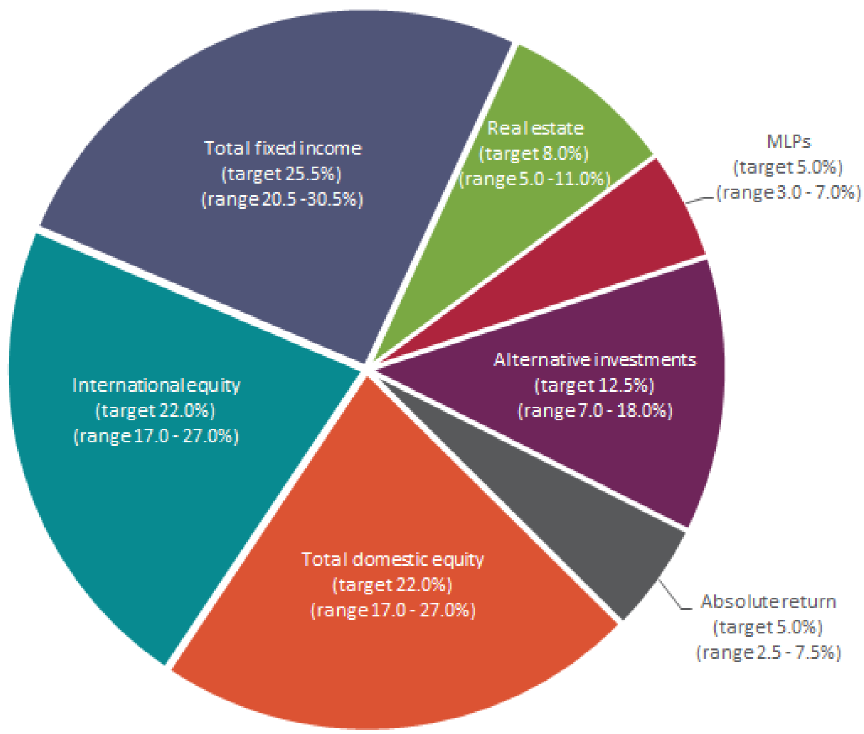
(c) The relative investment objective, over a market/ economic cycle of three to seven years, is to exceed the rate of return that would have been achieved by a statically allocated and passively managed portfolio, at the same risk, in accordance with the long term asset allocation policy set forth.

Asset Allocation Target

DERP 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 DERP Board in 1989. There have been subsequent asset allocation plans adopted, with the most recent being on November 20, 2020. DERP's investment consultant assisted DERP Board in developing the latest asset allocation.

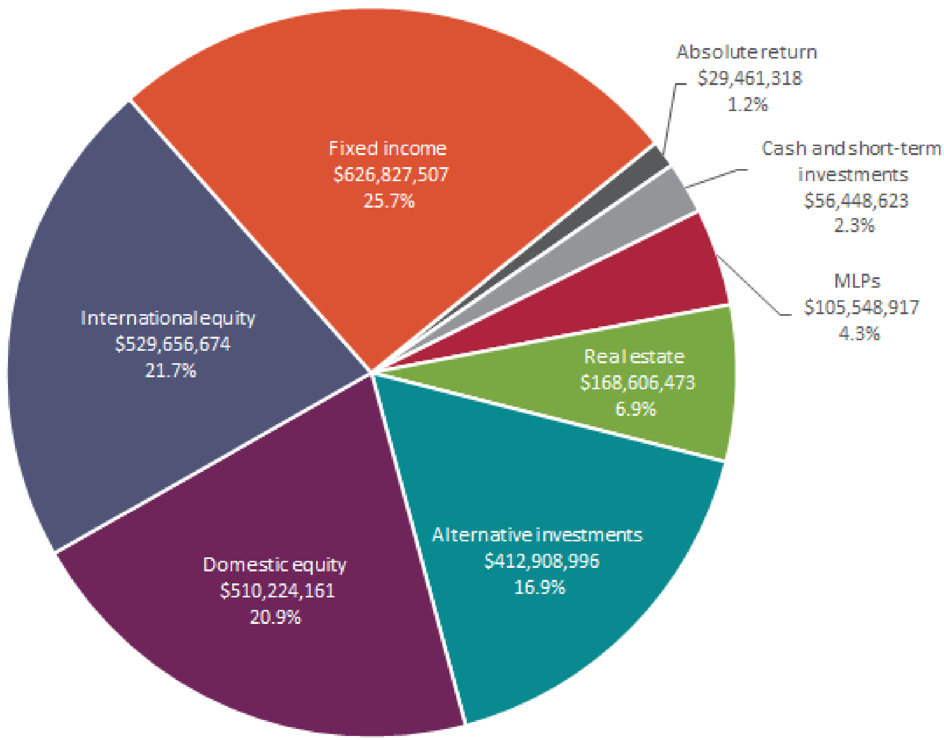
The asset allocation strategy as of December 31, 2020 is depicted in the chart below:



At target, a portfolio so allocated would be expected to achieve a 7.8% return with a standard deviation (risk) of 12.6%.

Asset Allocation by Asset Class

The total Fiduciary Net Position of DERP on December 31, 2020, was $2,441,691,073 including cash and investments of $2,439,682,670. At December 31, 2020, DERP's investment assets were allocated as shown in the following chart:



DERP 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 DERP. Investment manager, custodian, and consultant fees are aggressively negotiated and reviewed periodically.

The top ten stock and bond holdings as of December 31, 2020, are shown in the following tables:

Top Ten Stock Holdings
December 31, 2020

Shares	Stocks	Fair Value
6,552	ALPHABET INC-CL C	$ 11,478,318
50,162	MICROSOFT CORP	11,157,032
2,676	AMAZON.COM INC	8,715,545
121,982	COMCAST CORP	6,391,857
20,767	BERKSHIRE HATHAWAY INC	4,815,244
35,317	MARRIOTT INTERNATIONAL INC/MD	659,019
16,155	FACEBOOK INC	4,412,900
20,630	AON PLC	4,358,500
16,188	GOLDMAN SACHS GROUP INC/THE	4,268,937
387,413	GENERAL ELECTRIC CO	4,184,060

Top Ten Bond Holdings
December 31, 2020

Par	Bonds	Coupon Rate	Maturity Date	Fair Value
10,000,000	FNMA Bond	1.875 %	9/24/2026	$ 10,812,500
6,000,000	FNMA Bond	6.625 %	11/15/2030	9,084,720
5,000,000	FNMA Bond	6.250 %	5/15/2029	7,131,600
6,500,000	FNMA Bond	2.125 %	4/24/2026	7,081,750
5,800,000	U.S. Treasury Note	2.750 %	4/30/2023	6,150,726
5,000,000	FHLBC Bond	3.125 %	6/11/2027	5,814,800
5,500,000	U.S. Treasury Note	1.375 %	9/30/2023	5,684,965
5,000,000	FHLBC Bond	2.380 %	8/4/2025	5,442,450
4,500,000	FHLBC Bond	3.250 %	11/16/2028	5,381,460
4,500,000	FHLBC Bond	5.365 %	9/9/2024	5,352,525

Complete listings of stock and bond holdings are available at DERP’s office.

Investment Performance

DERP contracts with Meketa Investment 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 net of fees unless otherwise stated. The estimated annualized return from January 1, 1986 to December 31, 2020 is 8.50%. Annualized investment results compared with benchmarks for the year ending December 31, 2020, are as follows:

	Last Year	Last 3 Years	Last 5 Years
Domestic Equity	24.2 %	16.8 %	16.1 %
Russell 3000 Index	20.9 %	14.5 %	15.4 %
International Equity	6.3 %	1.4 %	7.4 %
International Equity Policy Index	11.8 %	4.7 %	9.6 %
Fixed Income	4.7 %	4.6 %	5.3 %
Fixed Income Policy Index	7.8 %	4.9 %	5.5 %
Real Estate	(3.5)%	1.5 %	3.8 %
NCREIF Index	1.4 %	5.0 %	6.3 %
MLPs	(25.3)%	(10.2)%	(4.3)%
Alerian Midstream Blended	(20.2)%	(7.4)%	(2.6)%
Alternatives	(1.4)%	5.6 %	7.9 %
Total Portfolio	5.7 %	5.3 %	7.7 %
Total Fund Policy Index	10.0 %	7.7 %	9.4 %
Change in Consumer Price Index (CPI-U)	1.4 %	2.1 %	2.0 %

Schedule of Investment Commissions

December 31, 2020

Broker	Quantity (Units)		Broker Commission		Commission Per/Share
GOLDMAN SACHS & CO	807,476	$	9,027	$	0.011
ISI GROUP INC	955,488		8,981		0.009
JEFFERIES & CO INC	918,471		8,831		0.010
MERRILL LYNCH PIERCE FENNER SMITH INC	548,480		8,695		0.016
WELLS FARGO SECURITIES, LLC	667,371		8,324		0.012
CREDIT SUISSE	908,636		7,514		0.008
UBS SECURITIES LLC	628,670		7,383		0.012
J.P. MORGAN SECURITIES LLC	573,023		7,368		0.013
RBC CAPITAL MARKETS LLC	773,714		7,181		0.009
CITIGROUP GLOBAL MARKETS, INC.	646,319		7,016		0.011
BARCLAYS CAPITAL	829,675		6,980		0.008
MORGAN STANLEY & CO INC	447,818		5,674		0.013
LIQUIDNET INC	526,283		5,331		0.010
PIPER JAFFRAY & CO.	516,966		4,328		0.008
CANTOR FITZGERALD & CO INC	165,465		3,454		0.021
ITG INC	118,555		2,795		0.024
B RILEY AND CO LLC	130,520		2,610		0.020
COWEN AND CO LLC	203,094		2,418		0.012
USCA SECURITIES LLC	233,801		2,299		0.010
NATIONAL FINL SVCS CORP	75,389		1,972		0.026
STIFEL NICOLAUS	64,029		1,894		0.030
BERNSTEIN SANFORD C & CO	96,102		1,685		0.018
BAIRD, ROBERT W & CO INC	41,983		1,655		0.039
RAYMOND JAMES & ASSOC INC	30,903		1,148		0.037
SCOTIA CAPITAL INC	150,434		1,128		0.008
KNIGHT EQUITY MARKETS LP	110,873		832		0.008
INSTINET CORP	78,230		627		0.008
VIRTU AMERICAS LLC	58,711		568		0.010
PERSHING LLC	15,962		530		0.033
MIRAE ASSET SEC USA	9,352		374		0.040
GUGGENHEIM CAPITAL MARKETS LLC	8,470		339		0.040
WILLIAM BLAIR & CO	8,049		320		0.040
INVESTMENT TECH GROUP INC	21,332		305		0.014
All other brokers (each at $300 or less)	125,688		2,374		0.019
Total	**11,495,332**	**$**	**131,960**	**$**	**0.011**

Schedule of Investment Fees

December 31, 2020

Externally Managed Portfolios		Assets Under Management		Fees
U.S. Equities:				
Actively Managed	$	273,669,907	$	1,712,382
Passively Managed		236,554,255		55,143
International Equities:				
Actively Managed		486,077,374		1,923,295
Passively Managed		43,579,300		13,326
Fixed Income:				
Actively Managed		623,211,437		1,700,890
Passively Managed		3,616,070		—
Real Estate:				
Fees netted with earnings		168,606,473		1,888,506
Fees paid separately		—		—
Absolute Return:				
Fees netted with earnings		29,461,318		814,624
Alternative Investments:				
Fees netted with earnings		406,868,742		3,586,486
Fees paid separately		111,589,171		703,493
	$	**2,383,234,047**	**$**	**12,398,145**
Other Investment Services				
Custody Fees			$	94,682
Other investment related expenses			$	902,855

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Actuarial Section

Classic Values, Innovative Advice

April 22, 2021

Retirement Board
Denver Employees Retirement Plan
777 Pearl Street
Denver, Colorado 80203

Re: Actuarial Certification – Actuarial Valuation as of January 1, 2020

Dear Board Members:

This is the Actuary's Certification Letter for Actuarial Section of the Comprehensive Annual Financial Report (CAFR) for the Denver Employees Retirement Plan (the Plan) as of December 31, 2020 with respect to pension and retiree health benefits.

Actuarial Valuation Used for Funding Purposes

The purpose of the annual Actuarial Valuation Report performed as of January 1, 2020 is to determine the actuarial funding status of the Plan on that date and to calculate the total Actuarial Determined Contribution. Please refer to that report for additional information related to the funding of the Plan.

We prepared the following schedules for inclusion in the Actuarial Section of the CAFR based on the January 1, 2020 actuarial valuation. All historical information prior to the January 1, 2019 actuarial valuation shown in these schedules is based on information reported by the prior actuary, Gabriel, Roeder, Smith and Co.

- Schedule 1 – Summary of Actuarial Assumptions and Methods
- Schedule 2 – Demographic History
- Schedule 3 – Analysis of Financial Experience
- Schedule 4 – Schedule of Funded Liabilities by Type / Member Benefit Coverage Information
- Schedule 5 – Summary of Plan Provisions
- Schedule 6 – Schedule of Funding Progress

The funding ratios shown in the schedule of funded liabilities by type and the schedule of funding progress exhibits are ratios compared to the funding target and are for the purpose of evaluating funding progress in a budgeting context. These ratios are not appropriate for measuring or assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations.

The Retirement Board is responsible for establishing and maintaining the contribution policy for the Plan. However, the City is responsible for establishing the allocation of the total contribution between the employers and employees. The actuarial methods and assumptions used in the actuarial valuation are adopted by the Board of Administration with advice from the actuary. In our opinion, the assumptions and methods used in the actuarial valuation for funding purposes are consistent with applicable Actuarial Standards of Practice. The actuarial cost method and the actuarial assumptions used for funding purposes are the same as those used for financial reporting purposes.

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Actuarial Valuation Used for Financial Reporting Purposes

For financial reporting purposes, the Total Pension Liability is based on the January 1, 2020 actuarial valuation updated to the measurement date of December 31, 2020. At their September 23, 2020 meeting, the Board approved a change in the discount rate from 7.50% to 7.25%. There were no other significant events between the valuation date and the measurement date.

Please refer to our GASB 67/68 and GASB 74/75 reports as of December 31, 2020 for additional information related to the financial reporting of the Plan. The following schedules can be found in these reports for inclusion in the Financial Section of the CAFR.

- Change in Net Pension Liability / Net OPEB Liability
- Sensitivity of Net Pension Liability / Net OPEB Liability to Changes in Discount Rate
- Schedule of Changes in Net Pension Liability / Net OPEB Liability and Related Ratios
- Schedule of Employer Contributions
- Notes to the Schedule of Employer Contributions

Funding Policy/Objective

The Plan's funding objective is to meet its long-term benefit obligations through employer and employee contributions and investment returns. The contributions from the employers and employees equal to the sum of:

- The total Normal Cost under the actuarial funding method, and
- Amortization of the Unfunded Actuarial Liability (UAL)

The UAL is the difference between the EAN Actuarial Liability and the Actuarial Value of Assets. As of January 1, 2019, all of the prior UAL bases were combined and an initial layer to amortize the existing UAL as a level percentage of projected payroll over a 20-year period was created. An additional layer was created to amortize the change in the actuarial cost method and asset smoothing method. Any subsequent unexpected changes in the UAL will be amortized over new 20-year periods.

Assumptions

The actuarial assumptions used in performing the January 1, 2020 valuation were recommended by the prior actuary and adopted by the Retirement Board based on the Actuarial Experience Study dated May 18, 2018 for the period covering January 1, 2013 through December 31, 2017. We reviewed the assumptions and found them to be reasonable. The assumptions and methods used for funding purposes were developed in compliance with the actuarial standards of practice as they relate to pension and retiree medical plans. The assumptions reflect the likely future experience of the System and the assumptions both individually and as a whole represent the best estimate for the future experience of the System.

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Supporting Schedules

The following schedules were prepared by Cheiron:

1. Statement of Current Actuarial Assumptions and Method
2. Analysis of Financial Experience
3. Demographic History
4. Funded Liabilities by Type/Solvency Test
5. Plan Provisions
6. Schedule of Funding Progress

Certification

In preparing our valuation and GASB reports, we relied on information (some oral and some written) supplied by the Plan. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standards of Practice No. 23.

Future actuarial measurements may differ significantly from the current measurements 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; and, changes in plan provisions or applicable law.

Cheiron's reports, the exhibits within this letter and their contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices, and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board, as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinions contained in this section. This section does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Our report and this letter were prepared for the Denver Employees Retirement Plan for the purposes described herein and for the use by the Plan and participating employers' auditors may rely on these reports in completing an audit related to the matters herein. Other users of this information are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,
Cheiron

Anne Harper

Anne D. Harper, FSA, MAAA, EA
Principal Consulting Actuary

Graham Schmidt

Graham A. Schmidt, ASA, FCA, MAAA, EA
Consulting Actuary

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Summary of Actuarial Assumptions and Methods

Contribution Allocation Procedure

The contribution allocation procedure primarily consists of an actuarial cost method, an asset valuation method, and an amortization method as described below. The actuarial cost method, amortization method, and asset valuation method were all adopted by the Board as of May 19, 2019 and implemented as of the January 1, 2019 valuation as described below.

1. **Actuarial Cost Method**

   The cost method for the valuation of liabilities used for this valuation is the Entry Age Normal (EAN) method. The actuarial present value of the projected benefits of each active members is allocated as a level percentage of each individual's projected pay to the period between their date of hire and their assumed maximum retirement age. The normal cost for the Plan is the sum of the individual normal costs for each member. This actuarial cost method is in compliance with GASB standards. The EAN Actuarial Liability is the difference between the Plan's total present value of future benefits and the present value of future normal costs. The unfunded actuarial liability is the difference between the Actuarial Liability and the Actuarial Value of Assets.

   Deferred Retirement Option Plan (DROP I and DROP II) – The DROPs are closed and no new members are assumed to enter either of the two DROPs. All members have retired from the DROPs. For DROP members who have left their DROP balances in the Plan, an Actuarial Liability equal to the sum of the individual DROP account balances is included in the Plan's Actuarial Liabilities. Further detail describing the DROPs can be found in the Summary of Plan Provisions in this report.

2. **Amortization Method**

   The Unfunded Actuarial Liability (or Surplus Funding) is amortized as a percentage of the projected salaries of DERP members. Effective with the January 1, 2019 valuation, the Unfunded Actuarial Liability (UAL) as of January 1, 2019 was amortized over a closed 20-year period. The additional UAL attributable to the change in funding method and asset valuation method was amortized over a separate 20-year period. All future gains and losses will be amortized over new 20-year periods, called layers.

3. **Asset Valuation Method**

   As of January 1, 2019, the Actuarial Value of Assets is determined as the Market Value of Assets less any unrecognized investment gains or losses in each of the last five years. As of January 1, 2021, the unrecognized loss is only from the previous three plan years ending December 31, 2018, December 31, 2019, and December 31, 2020. In general, the gains and losses are equal to the difference between the actual market return and the expected market return and are recognized over a five-year period or 20% per year.

Summary of Actuarial Assumptions and Methods

Actuarial Assumptions

The assumptions used in this report reflect the results of an Experience Study performed by the prior actuary covering the period from January 1, 2013 through December 31, 2017 and adopted by the Board for the January 1, 2018 Actuarial Valuation. More details on the rationale for the demographic and economic assumptions can be found in the Actuarial Experience Study dated May 18, 2018.

1. **Rate of Return**

   Assets are assumed to earn 7.50%, net of investment and administrative expenses

2. **Administrative Expenses**

   No explicit assumption because assumed rate of return is net of administrative expenses

3. **Cost-of-Living / Inflation**

   2.50%

4. **Post Retirement COLA**

   0.00% per year

5. **Internal Revenue Code Section 415 Limit**

   The Internal Revenue Code Section 415 maximum benefit limitation for 2020 is reflected in the valuation and increased annually for future years by the assumed CPI of 2.50%.

6. **Internal Revenue Code Section 401(a)(17)**

   The Internal Revenue Code Section 401(a)(17) maximum compensation limitation for 2020 is reflected in the valuation and increased annually for future years by the assumed CPI of 2.50%.

7. **Interest on Member Contributions**

   The annual credited interest rate on non-vested member contributions is assumed to be 1.0%.

8. **Unused Sick and Vacation Hours**

   For members hired prior to January 1, 2010 and District Attorney's Office and Denver Sheriff Department members regardless of hire date, unused sick and vacation hours are converted into pay at retirement, death, disability or termination. That converted amount is included in the Highest Average Salary. 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 eligible members.

Summary of Actuarial Assumptions and Methods

9. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the table below. Male spouses are assumed to be the same age as female spouses for active members.

Gender	Percent Married
Male	75%
Female	60%

10. Increases in Pay

Wage inflation component: 3.00%
Additional longevity and promotion component:

Service	Non-DHHA
1	7.00%
2	5.50%
3	3.50%
4	3.25%
5	3.00%
6	2.75%
7	2.50%
8	2.25%
9	2.00%
10	1.50%
11	1.50%
12	1.25%
13	1.25%
14	1.00%
15	0.75%
16	0.50%
17	0.50%
18	0.25%
19	0.25%
20	0.25%
21+	0.00%

Age	DHHA
≤ 25	2.00%
26	2.00%
27	2.00%
28	2.00%
29	2.00%
30	2.00%
31	2.00%
32	2.00%
33	2.00%
34	2.00%
35	0.75%
36	0.75%
37	0.75%
38	0.75%
39	0.75%
40	0.50%
41	0.50%
42	0.50%
43	0.50%
44	0.50%
≥ 45	0.00%

Summary of Actuarial Assumptions and Methods

11. Rates of Termination

Sample rates of termination are shown in the following table below.

Non-DHHA		
Service	Male	Female
0-1	18%	23%
1-2	15%	18%
2-3	14%	16%
3-4	11%	13%
4-5	10%	12%
5-6	9%	11%
6-7	8%	10%
7-8	8%	10%
8-9	7%	9%
9-10	6%	9%
10-11	5%	8%
11-12	5%	7%
12-13	5%	5%
13-14	5%	5%
14-15	4%	4%
15-16	4%	4%
16-17	3%	3%
17-18	3%	3%
18-19	3%	3%
19-20	3%	3%
21+	2%	2%

DHHA	
Age	Unisex
≤ 29	10.0%
30 – 39	5.0%
40 – 49	4.0%
50 – 54	2.5%
55+	0%

Summary of Actuarial Assumptions and Methods

12. Rates of Disability

Disability rates of active participants are shown below.

Age	Rate
30	0.0150%
31	0.0150%
32	0.0150%
33	0.0188%
34	0.0203%
35	0.0225%
36	0.0300%
37	0.0375%
38	0.0450%
39	0.0450%
40	0.0525%
41	0.0600%
42	0.0750%
43	0.0825%
44	0.0900%
45	0.0975%
46	0.1200%
47	0.1425%
48	0.1650%
49	0.1875%

Age	Rate
50	0.2025%
51	0.2250%
52	0.2550%
53	0.2775%
54	0.3000%
55	0.3300%
56	0.3675%
57	0.3975%
58	0.4350%
59	0.4725%
60	0.5025%
61	0.5625%
62	0.6000%
63	0.6375%
64	0.6750%
65	0.7500%

15% of disabilities are assumed to be duty-related and 85% are assumed to be non-duty related.

Summary of Actuarial Assumptions and Methods

13. Rates of Mortality

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

Active Mortality
Male: RP-2014 Employee Mortality Table for males with generational projection using Ultimate MP Scale.

Female: RP-2014 Employee Mortality Table for females with generational projection using Ultimate MP Scale.

15% of deaths are assumed to be duty-related and 85% are assumed to be non-duty related.

Healthy Retirees, Beneficiaries, and Deferred Vested Members
Male: RP-2014 Healthy Annuitant Mortality Table for males with a 110% multiplier applied to the base rates and generational projection using Ultimate MP-Scale.

Female: RP-2014 Healthy Annuitant Mortality Table for females projected with a 105% multiplier applied to the base rates and generational projection using Ultimate MP-Scale.

Disabled Retirees
Male: RP-2014 Disabled Retiree Mortality Table for males with generational projection using Ultimate MP Scale.

Female: RP-2014 Disabled Retiree Mortality Table for females with generational projection using Ultimate MP Scale.

14. Form of Benefit Payment and Timing

A straight life annuity is the normal form of benefit and is payable at the beginning of the month.

Summary of Actuarial Assumptions and Methods

15. Rates of Retirement

Non-DHHA Rates of Retirement

Age	Early Retirement Hired before July 1, 2011	Early Retirement Hired after June 30, 2011	Normal Retirement
55	2.5%	N/A	N/A
56	4.0%	N/A	N/A
57	4.0%	N/A	N/A
58	4.0%	N/A	N/A
59	4.0%	N/A	N/A
60	5.0%	2.5%	N/A
61	9.0%	4.5%	N/A
62	10.0%	5.0%	N/A
63	6.0%	3.0%	N/A
64	6.0%	3.0%	N/A
65	N/A	N/A	20.0%
66	N/A	N/A	18.0%
67	N/A	N/A	18.0%
68	N/A	N/A	18.0%
69	N/A	N/A	25.0%
70	N/A	N/A	30.0%
71	N/A	N/A	30.0%
72	N/A	N/A	100.0%

Summary of Actuarial Assumptions and Methods

Eligible for Rule of 75 or Rule of 85

Age	Rule of 75/85
NAR	25.0%
NAR+1	17.0%
NAR+2	17.0%
NAR+3	17.0%
NAR+4	17.0%
NAR+5	17.0%
NAR+6	27.0%
NAR+7	27.0%
NAR+8	27.0%
NAR+9	33.0%
NAR+10	33.0%
NAR+11	100.0%

Normal Age at Retirement (NAR) is defined as the first age at which a member is eligible to retirement under the Rule of 75 or Rule of 85.

All DHHA members are assumed to retire under "Rule of" retirement.

The retirement assumption is 100% after attainment of age 72 (age 75 for the DHHA group) or NAR+11.

Inactive members are assumed to retire at the age when they are first eligible.

16. Retiree Medical Election Percentages

The assumptions for members who elect retiree medical benefits are as follows:

Retirees	85%
Inactives	30%
Beneficiaries	80%
Disabled	80%

17. Maximum Retiree Medical Benefit

The retiree medical benefit is limited to the monthly health premium.

Denver Employees Retirement Plan — Schedule 2

Analysis of Financial Experience

Composite Gain (Loss) for the Years Ending December 31, 2015 through December 31, 2019.

Pension Benefits	Dec 31, 2019	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016	Dec 31, 2015
Demographic Experience	($13,993,345)	($28,925,223)	($10,454,200)	($8,924,900)	($12,616,600)
Investment Income	(36,961,589)	(58,325,659)	(11,792,983)	(43,288,228)	(55,770,203)
Contribution Gain (Loss)[1]	(12,746,285)	(5,527,971)	0	0	0
New Entrants[2]	N/A	N/A	(3,711,800)	(3,714,300)	(2,768,100)
Total Gain (Loss)	($63,701,219)	($92,778,853)	($25,958,983)	($55,927,428)	($71,154,903)
Non-Recurring Items[3]	0	(180,806,014)	(82,057,600)	(66,320,488)	0
Composite Gain (Loss) During Year	($63,701,219)	($273,584,867)	($108,016,583)	($122,247,916)	($71,154,903)

Amounts for 2017 And earlier were calculated by the prior actuary.

[1] *Contribution Gain (Loss) represents implementation lags and payroll growth not as assumed. It was included by the prior actuary in the demographic experience.*

[2] *Actuarial liabilities that accrue for new entrants are offset by contributions made by both the employer and employees.*

[3] *Includes Assumption, Method, and Benefit Changes.*

Health Benefits	Dec 31, 2019	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016	Dec 31, 2015
Demographic Experience	$2,924,694	$1,340,646	($182,500)	$1,857,700	$905,900
Investment Income	(1,226,092)	(2,236,926)	(757,727)	(1,886,477)	(2,389,228)
Contribution Gain (Loss)[1]	(901,196)	(296,989)	0	0	0
New Entrants[2]	N/A	N/A	(209,400)	(165,900)	(131,700)
Total Gain (Loss)	$797,406	($1,193,269)	($1,149,627)	($194,677)	($1,615,028)
Non-Recurring Items[3]	0	(8,912,349)	(4,937,600)	(3,449,169)	0
Composite Gain (Loss) During Year	$797,406	($10,105,618)	($6,087,227)	($3,643,846)	($1,615,028)

Amounts for 2017 And earlier were calculated by the prior actuary.

[1] *Contribution Gain (Loss) represents implementation lags and payroll growth not as assumed. It was included by the prior actuary in the demographic experience.*

[2] *Actuarial liabilities that accrue for new entrants are offset by contributions made by both the employer and employees.*

[3] *Includes Assumption, Method, and Benefit Changes.*

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Denver Employees Retirement Plan Schedule 3

Demographic History

Schedule of Retirees, Disabled, and Beneficiaries

Valuation Date Jan 1,	Added to Rolls Count	Added to Rolls Allowances	Removed from Rolls Count	Removed from Rolls Allowances	Rolls at Valuation Date Count	Rolls at Valuation Date Annual Benefits	Average Annual Benefit	Increase in Average Benefit
2011	410	7,484,590	227	2,827,899	7,606	130,319,793	17,134	2.0%
2012	457	9,392,512	287	2,922,903	7,776	138,317,723	17,788	3.8%
2013	540	11,227,434	271	9,273,325	8,045	146,837,873	18,252	2.6%
2014	658	15,872,322	221	3,126,984	8,482	159,503,726	18,805	3.0%
2015	597	13,833,209	264	4,026,993	8,815	169,735,929	19,255	2.4%
2016	560	12,947,276	301	3,846,224	9,074	179,304,283	19,760	2.6%
2017	558	13,549,263	330	4,951,335	9,302	188,483,949	20,263	2.5%
2018	610	15,814,329	268	3,358,163	9,644	201,456,870	20,889	3.1%
2019	600	15,257,198	299	4,791,186	9,945	211,922,882	21,309	2.0%
2020	553	13,314,532	345	5,448,419	10,153	220,253,735	21,693	1.8%

Amounts for January 1, 2018 and earlier were calculated by the prior actuary.

Schedule of Active Members

January 1,	Active Members Number	Active Members % Increase	Projected Payroll $ Amount	Projected Payroll % Increase	Projected Average Payroll $ Amount	Projected Average Payroll % Increase	Average Age	Average Service
2011	8,403	-2.3%	517,398,105	2.2%	61,573	4.7%	46.2	11.7
2012	8,149	-3.0%	517,396,257	0.0%	63,492	3.1%	46.3	11.9
2013	8,175	0.3%	531,559,017	2.7%	65,023	2.4%	46.4	11.8
2014	8,304	1.6%	540,229,189	1.6%	65,057	0.1%	45.9	11.3
2015	8,489	2.2%	568,562,500	5.2%	66,976	3.0%	45.5	10.9
2016	8,636	1.7%	586,819,180	3.2%	67,950	1.5%	45.1	10.6
2017	8,981	4.0%	623,098,077	6.2%	69,380	2.1%	44.5	10.0
2018	9,094	1.3%	646,777,231	3.8%	71,121	2.5%	44.3	9.7
2019	9,210	1.3%	692,150,700	7.0%	75,152	5.7%	44.2	9.3
2020	9,401	2.1%	737,532,660	6.6%	78,453	4.4%	44.1	9.1

This schedule does not include participants in DROP I or DROP II.
Amounts for January 1, 2018 and earlier were calculated by the prior actuary.

Denver Employees Retirement Plan Schedule 4

Scheduled of Funded Liabilities by Type / Member Benefit Coverage Information

Pension Plan - Schedule of Funded Liabilities by Type

	Actuarial Liabilities						
	(A)	(B)	(C)				
Valuation Date January 1,	Non-Vested Member Contributions[1]	Retirees, Beneficiaries, and Term Vested	Remaining Active Members' Liabilities	Reported Assets	Portion of Actuarial Liabilities Covered by Reported Assets (A)	(B)	(C)
2011	$ 8,618,000	$ 1,471,749,000 [2]	$ 804,389,000	$ 1,942,871,000	100%	100%	57%
2012	14,330,000	1,567,383,000 [3]	804,817,000	1,946,844,000	100%	100%	45%
2013	14,004,000	1,676,748,000 [4]	902,438,000	1,980,204,000	100%	100%	32%
2014	15,239,000	1,793,125,000 [5]	890,636,000	2,062,323,000	100%	100%	29%
2015	21,758,000	1,938,787,000 [6]	933,123,000	2,132,025,000	100%	100%	18%
2016	30,578,000	2,038,925,000 [7]	934,087,000	2,168,754,000	100%	100%	11%
2017	39,110,000	2,177,513,000 [8]	958,017,000	2,207,268,000	100%	100%	0%
2018	47,644,000	2,345,254,000 [9]	965,324,000	2,272,599,000	100%	95%	0%
2019	53,342,000	2,468,387,000 [10]	1,101,941,000	2,255,412,000	100%	89%	0%
2020	58,696,000	2,554,340,000 [11]	1,114,751,000	2,300,324,000	100%	88%	0%

Amounts for January 1, 2018 and earlier were calculated by the prior actuary, and are based on the Projected Unit Credit actuarial cost method.

Amounts for January 1, 2019 and later were calculated by Cheiron, and are based on the Entry Age Normal actuarial cost method.

[1] *Member contributions are allocated between pension and health benefits based on the proportion of the total contribution.*

[2] *Includes DROP accounts of $98,884,000.*

[3] *Includes DROP accounts of $101,401,000.*

[4] *Includes DROP accounts of $105,677,000.*

[5] *Includes DROP accounts of $107,944,000.*

[6] *Includes DROP accounts of $110,655,000.*

[7] *Includes DROP accounts of $113,006,000.*

[8] *Includes DROP accounts of $116,493,000.*

[9] *Includes DROP accounts of $125,524,000.*

[10] *Includes DROP accounts of $118,078,000.*

[11] *Includes DROP accounts of $118,320,000.*

Denver Employees Retirement Plan | Schedule 4

Scheduled of Funded Liabilities by Type / Member Benefit Coverage Information

Retiree Medical Plan - Member Benefit Coverage Information							
	Actuarial Liabilities[1]						
	(A)	(B)	(C)				
Valuation Date January 1,	Non-Vested Member Contributions[2]	Retirees, Beneficiaries, and Term Vested	Remaining Active Members' Liabilities	Reported Assets	Portion of Actuarial Liabilities Covered by Reported Assets (A)	(B)	(C)
2011	$ 535,000	$ 102,248,000	$ 40,329,000	$ 87,609,000	100%	85%	0%
2012	889,000	102,538,000	39,540,000	84,680,000	100%	82%	0%
2013	869,000	104,349,000	43,668,000	82,993,000	100%	79%	0%
2014	946,000	106,514,000	42,322,000	82,737,000	100%	77%	0%
2015	1,350,000	108,982,000	42,590,000	82,195,000	100%	74%	0%
2016	1,898,000	110,239,000	41,118,000	80,383,000	100%	71%	0%
2017	2,427,000	112,599,000	41,076,000	78,723,000	100%	68%	0%
2018	2,957,000	117,103,000	42,200,000	77,858,000	100%	64%	0%
2019	3,311,000	120,108,000	45,418,000	73,706,000	100%	59%	0%
2020	3,257,000	119,238,000	44,633,000	73,107,000	100%	59%	0%

Amounts for January 1, 2018 and earlier were calculated by the prior actuary, and are based on the Projected Unit Credit actuarial cost method.

Amounts for January 1, 2019 and later were calculated by Cheiron, and are based on the Entry Age Normal actuarial cost method.

[1] These liabilities only represent the value of the explicit benefit without regard to the implicit rate subsidy, and therefore are not compliant with GASB No. 75.

[2] Member contributions are allocated between pension and health benefits based on the proportion of the total contribution.

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Summary of Plan Provisions

All actuarial calculations are based on our understanding of the statutes governing the Denver Employees Retirement Plan, as amended and restated under Denver Municipal Code Section 18-391 through 18-430.7, with provisions adopted by the Retirement Board, effective through December 31, 2020. The benefit and contribution provisions of the Plan are summarized briefly below. This summary does not attempt to cover all the detailed provisions of the Plan.

1. Effective Date

January 1, 1963.

2. Plan Year

January 1 through December 31.

3. Type of Plan

Qualified, 401(a) governmental defined benefit retirement plan; for GASB purposes it is multi-employer cost sharing plan.

4. Eligibility Requirements

Elected Officials, Appointed Officials, and Employees as defined in Denver Municipal Code Sections 18-402 and 18-406.

5. Credited Service

Service measured in months from date of employment to date of retirement or prior Termination.

6. Compensation

Gross pay, compensation, and salary shall mean the 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 an 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 designated 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.

Summary of Plan Provisions

7. **Highest Average Salary (HAS)**

Highest average salary during 36 (60 for members hired on or after July 1, 2011) consecutive calendar months of covered service.

8. **Normal Retirement**

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 five years of service, or attainment of age 60 with age plus credited service equal to 85.

Benefit: 1.5% (2.0% if hired before September 1, 2004) of HAS times credited service.

Normal Form: Single Life Annuity.

9. **Early Retirement**

Eligibility: Attainment of age 55 (60 for members hired on or after July 1, 2011) and completion of five years.

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.

10. **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 (60 for members 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.

11. **Deferred Retirement**

Eligibility: Any vested employee who terminates service for any reason other than retirement, disability or death.

Benefit: Based on the formula in effect at the time of separation from service. Payment may commence any month after the member's 55^{th} if hired prior to July 1, 2011, or after the member's 60^{th} birthday for members hired on or after July 1, 2011.

Summary of Plan Provisions

12. Service Connected Disability

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.

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 as of age 65.

Normal Form: Single Life Annuity.

13. Non-Service Connected Disability

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.

Benefit: The higher of 75% of the amount calculated for a service-connected disability or the amount calculated for an early retirement.

Normal Form: Single Life Annuity.

14. Death in the Life 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 five 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.

15. 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.

Summary of Plan Provisions

16. Post-Retirement Death

1) For Normal Retirement (with at least five 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:

Age	Lump Sum
64	$4,750
63	$4,500
62	$4,250
61	$4,000
60	$3,750
59	$3,500
58	$3,250
57	$3,000
56	$2,750
55	$2,500

4) If hired on or after July 1, 2011, for Earl Retirement, the lump-sum at age:

Age	Lump Sum
64	$4,500
63	$4,000
62	$3,500
61	$3,000
60	$2,500

5) In lieu of a single lump-sum payment that would be paid upon death, a retired member may elect to receive the appropriate death benefit limited to five thousand dollars ($5,000) in the form of periodic payments.

17. Optional Forms

Joint and Survivor Options – 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.

Summary of Plan Provisions

18. Deferred Retirement Option Plan

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 resumed regular membership with the retirement plan.

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.

19. 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 62 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.

20. 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.

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Summary of Plan Provisions

21. Refunds

Eligibility: All members leaving covered employment with less than five years of service are eligible. Vested members (those with five or more years of service) may not withdraw their accumulated contributions plus interest in lieu of the deferred benefits otherwise due.

Benefit: Members who withdraw receive a lump-sum payment of his/her employee contributions, plus the interest credited on these contributions. Interest is currently credited at 1.00%.

22. Member Contributions

9.25% of compensation, effective January 1, 2020 (increased from 8.50% effective January 1, 2019).

23. Employer Contributions

15.75% of compensation, effective January 1, 2020 for each member (increased from 13.00% effective January 1, 2019).

24. Cost of Living Increases

Given on an ad hoc basis. There have been no cost of living increases since 2002.

25. Changes Since Prior Valuation

The member and employer contribution rates have increased from the prior valuation as described above.

Denver Employees Retirement Plan Schedule 6

Schedule of Funding Progress

The funding ratios shown in the exhibits below are ratios compared to the Actuarial Liabilities that are intended to be a funding target and are for the purpose of evaluating funding progress in a budgeting context. These ratios are not appropriate for measuring of assessing the solvency of the Plan or the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations.

Pension Plan - Schedule of Funding Progress

Valuation Date January 1,	Actuarial Value of Assets	Actuarial Liability (AL)	Unfunded AL	Funded Ratio	Covered Payroll	Unfunded AL as a % of Covered Payroll
2011	$ 1,942,871,000	$ 2,284,756,000	$ 341,885,000	85.0%	$ 517,398,000	66.1%
2012	1,946,844,000	2,386,530,000	439,686,000	81.6%	517,396,000	85.0%
2013	1,980,204,000	2,593,190,000	612,986,000	76.4%	531,559,000	115.3%
2014	2,062,323,000	2,699,000,000	636,677,000	76.4%	540,229,000	117.9%
2015	2,132,025,000	2,893,668,000	761,643,000	73.7%	568,563,000	134.0%
2016	2,168,754,000	3,003,590,000	834,836,000	72.2%	586,819,000	142.3%
2017	2,207,268,000	3,174,640,000	967,372,000	69.5%	623,098,000	155.3%
2018	2,272,599,000	3,358,222,000	1,085,623,000	67.7%	646,777,000	167.9%
2019	2,255,412,000	3,623,670,000	1,368,258,000	62.2%	692,151,000	197.7%
2020	2,300,324,000	3,727,787,000	1,427,463,000	61.7%	732,075,000	195.0%

Amounts for January 1, 2018 and earlier were calculated by the prior actuary, and are based on the Projected Unit Credit actuarial cost method.

Amounts for January 1, 2019 and later were calculated by Cheiron, and are based on the Entry Age Normal actuarial cost method.

Retiree Medical Plan - Schedule of Funding Progress

Valuation Date January 1,	Actuarial Value of Assets	Actuarial Liability (AL)	Unfunded AL	Funded Ratio	Covered Payroll	Unfunded AL as a % of Covered Payroll
2011	$ 87,609,000	$ 143,112,000	$ 55,503,000	61.2%	$ 517,398,000	10.7%
2012	84,680,000	142,967,000	58,287,000	59.2%	517,396,000	11.3%
2013	82,993,000	148,886,000	65,893,000	55.7%	531,559,000	12.4%
2014	82,737,000	149,782,000	67,045,000	55.2%	540,229,000	12.4%
2015	82,195,000	152,922,000	70,727,000	53.7%	568,563,000	12.4%
2016	80,383,000	153,255,000	72,872,000	52.5%	586,819,000	12.4%
2017	78,723,000	156,102,000	77,379,000	50.4%	623,098,000	12.4%
2018	77,858,000	162,260,000	84,402,000	48.0%	646,777,000	13.0%
2019	73,706,000	168,837,000	95,131,000	43.7%	692,151,000	13.7%
2020	73,107,000	167,128,000	94,021,000	43.7%	732,075,000	12.8%

Amounts for January 1, 2018 and earlier were calculated by the prior actuary, and are based on the Projected Unit Credit actuarial cost method.

Amounts for January 1, 2019 and later were calculated by Cheiron, and are based on the Entry Age Normal actuarial cost method.

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. 74 and No. 75. The value of any implicit rate subsidy in the city-sponsored health plans will be illustrated in the separate disclosures related to those plans.

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Statistical Section

This section of DERP'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 DERP's overall financial status.

Changes in Fiduciary Net Position

Last Ten Fiscal Years

	2011	2012	2013	2014
Pension Benefits				
Additions:				
Member contributions [1]	$ 26,110,772 (2)	$ 30,663,247 (3)	$ 37,138,512 (4)	$ 39,521,451 (5)
Employer contributions [1]	45,703,351	49,756,639	56,427,308	59,941,041
Investment earnings (net of expenses)	(2,396,020)	205,809,820	318,274,197	101,595,703
Total additions to fiduciary net position	**69,418,103**	**286,229,706**	**411,840,017**	**78,178,264**
Deductions:				
Benefit payments	142,108,250	149,470,854	158,285,769	171,178,475
Refunds	948,969	947,756	1,051,298	1,507,554
Administrative expenses	2,883,909	3,334,741	3,597,603	3,638,296
Total deductions from fiduciary net position	**145,941,128**	**153,753,351**	**162,934,670**	**187,777,495**
Change in fiduciary net position	**$ (76,523,025)**	**$ 132,476,355**	**$ 248,905,347**	**$ (109,599,231)**
Health Benefits				
Additions:				
Member contributions (1)	$ 2,329,357	$ 2,492,678	$ 2,543,374	$ 2,725,316
Employer contributions (1)	4,202,033	4,241,292	4,135,064	4,332,376
Investment earnings (net of expenses)	(42,792)	8,635,748	12,911,917	3,966,864
Total additions to fiduciary net position	**6,488,598**	**15,369,718**	**19,590,355**	**6,097,682**
Deductions:				
Benefit payments	12,471,835	12,446,444	12,582,751	12,846,786
Refunds	41,255	39,653	42,505	58,314
Administrative expenses	125,390	139,510	145,169	140,710
Total deductions from fiduciary net position	**12,638,480**	**12,625,607**	**12,770,425**	**13,127,468**
Change in fiduciary net position	**$ (6,149,882)**	**$ 2,744,111**	**$ 6,819,930**	**$ (7,029,786)**

(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, 2011, the employer and employee contributions increased to 9.5% and 5.5%, respectively.

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

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

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

(6) Effective January 1, 2015, the employer and employee contributions increased to 11.20% and 8.00%, respectively.

(7) Effective January 1, 2018, the employer and employee contributions increased to 12.50% and 8.00%, respectively.

(8) Effective January 1, 2019, the employer and employee contributions increased to 13.50% and 8.50%, respectively.

(9) Effective January 1, 2020, the employer and employee contributions increased to 15.50% and 9.50%, respectively

2015	2016	2017	2018	2019	2020
$ 46,689,696 (6)	$ 48,037,800	$ 50,599,952	$ 52,700,679 (7)	$ 60,074,876 (8)	$ 63,816,511 (9)
67,234,597	68,794,871	71,731,309	81,719,744	87,464,822	105,863,173
(35,746,029)	147,443,477	302,942,063	(73,146,389)	284,110,225	180,417,580
78,178,264	**264,276,148**	**425,273,324**	**61,274,034**	**431,649,923**	**350,097,264**
181,827,975	191,790,600	204,064,502	215,658,138	226,412,949	232,594,284
2,164,104	2,751,016	3,547,888	4,348,592	5,309,546	4,833,725
3,785,416	3,742,451	3,899,901	4,016,288	4,123,494	4,465,837
187,777,495	**198,284,067**	**211,512,291**	**224,023,018**	**235,845,989**	**241,893,846**
$ (109,599,231)	**$ 65,992,081**	**$ 213,761,033**	**$ (162,748,984)**	**195,803,934**	**108,203,418**
$ 3,026,103	$ 3,012,052	$ 3,005,989	$ 3,132,783	$ 3,310,427	$ 4,029,080
4,380,107	4,364,140	4,367,474	4,952,754	5,084,799	6,870,452
(1,308,528)	5,225,319	10,422,137	(2,364,015)	9,185,163	5,687,451
6,097,682	**12,601,511**	**17,795,600**	**5,721,522**	**17,580,389**	**16,586,983**
12,905,247	12,859,361	13,049,162	12,905,976	12,951,302	12,976,448
80,925	98,273	121,860	144,189	171,219	153,085
141,296	133,511	133,959	133,128	133,008	141,397
13,127,468	**13,091,145**	**13,304,981**	**13,183,293**	**13,255,529**	**13,270,930**
$ (7,029,786)	**$ (489,634)**	**$ 4,490,619**	**$ (7,461,771)**	**$ 4,324,860**	**$ 3,316,053**

Schedule of Benefit Expenses by Type

Last Ten Fiscal Years

	2011	2012	2013	2014
Age and Service Benefits:				
Retirees	$ 119,878,934	$ 127,091,564	$ 135,648,423	$ 146,505,901
Survivor	$ 5,879,654	$ 6,126,099	$ 6,619,661	$ 7,274,571
Death in Service Benefits	$ 3,659,245	$ 3,736,130	$ 3,781,917	$ 3,965,980
Disability Benefits:				
Retirees:				
On-the-Job	$ 818,527	$ 869,781	$ 826,071	$ 844,509
Off-the-Job	$ 3,888,218	$ 3,854,524	$ 3,940,566	$ 4,018,848
Survivors	$ 1,122,643	$ 1,238,793	$ 1,309,114	$ 1,433,661
Lump Sum Death Benefits	$ 1,508,915	$ 1,315,428	$ 1,350,159	$ 1,415,762
Pension Benefits' Contribution Refunds				
Separation	$ 911,074	$ 941,408	$ 1,051,298	$ 1,507,554
Death	$ 37,895	$ 6,348	$ —	$ —
Health Benefits' Contribution Refunds				
Separation	$ 39,608	$ 39,387	$ 42,505	$ 58,314
Death	$ 1,647	$ 266	$ —	$ —
DROP Benefits	$ 5,352,114	$ 5,238,535	$ 4,809,858	$ 5,719,243
Pension Benefits	$ 136,756,136	$ 144,232,319	$ 153,475,911	$ 165,459,232
Health Benefits	$ 12,471,835	$ 12,446,444	$ 12,582,751	$ 12,846,786

2015	2016	2017	2018	2019	2020
$ 156,519,225	$ 165,246,685	$ 175,893,605	$ 185,677,299	$ 195,391,329	$ 217,219,220
$ 7,755,324	$ 8,482,372	$ 9,001,245	$ 9,413,449	$ 10,222,475	$ 11,309,771
$ 4,054,992	$ 4,135,128	$ 4,248,073	$ 4,320,956	$ 4,392,797	$ 4,616,997
$ 879,295	$ 917,075	$ 913,151	$ 1,003,139	$ 926,796	$ 1,077,114
$ 3,977,212	$ 4,122,190	$ 4,019,183	$ 3,936,770	$ 3,925,053	$ 3,823,114
$ 1,535,422	$ 1,569,064	$ 1,615,969	$ 1,698,309	$ 1,805,386	$ 1,793,476
$ 1,324,545	$ 1,615,976	$ 1,561,969	$ 1,466,130	$ 1,459,441	$ 1,254,830
$ 2,162,575	$ 2,671,771	$ 3,434,692	$ 4,226,993	$ 5,178,686	$ 4,771,796
$ 1,529	$ 2,616	$ 17,882	$ 3,892	$ —	$ 61,929
$ 80,868	$ 174,731	$ 216,049	$ 261,655	$ 302,079	$ 149,826
$ 57	$ 171	$ 1,125	$ 241	$ —	$ 3,259
$ 5,781,960	$ 5,702,111	$ 6,811,306	$ 8,142,084	$ 8,289,671	$ 4,476,210
$ 176,046,015	$ 186,088,490	$ 197,253,196	$ 207,516,054	$ 218,123,278	$ 228,118,074
$ 12,905,247	$ 12,859,360	$ 13,049,162	$ 12,905,976	$ 12,951,302	$ 12,976,448

Schedule of Retired Members by Type of Benefit - Pension

December 31, 2020

		Type of Retirement*							Option Selected**			
Amount of Monthly Benefit	**Number of Retirees**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**1**	**2**	**3**	**4**
$1- 50	66	62	4	—	—	—	—	—	64	—	1	1
51- 100	96	66	11	—	—	5	14	—	63	27	2	4
101- 150	244	190	20	1	—	13	20	—	130	98	4	12
151- 200	278	212	25	—	—	12	26	3	155	93	8	22
201- 250	303	222	38	—	—	15	26	2	162	103	13	25
251- 300	296	208	39	—	2	18	27	2	167	108	6	15
301- 350	292	189	35	—	3	31	29	5	171	86	15	20
351- 400	251	170	34	1	7	18	17	4	143	77	12	19
401- 450	258	175	35	—	6	18	19	5	140	76	11	31
451- 500	252	162	33	—	13	19	20	5	142	77	13	20
501- 600	448	253	85	2	16	26	53	13	230	140	24	54
601- 700	393	228	53	2	23	23	50	14	198	111	32	52
701- 800	334	186	53	2	19	17	42	15	157	112	27	38
801- 900	319	205	38	1	16	17	31	11	153	111	21	34
901- 1,000	303	205	24	2	15	13	32	12	157	89	22	35
1,001-1,100	327	215	29	1	12	12	49	9	145	102	32	48
1,101-1,200	308	214	26	—	11	13	31	13	151	100	22	35
1,201-1,300	294	216	17	4	8	10	33	6	152	76	25	41
1,301-1,400	260	184	12	2	12	8	35	7	131	71	27	31
1,401-1,500	269	203	9	2	10	14	27	4	144	67	21	37
1,501-1,600	249	205	9	1	9	8	17	—	142	54	32	21
1,601-1,700	253	203	5	3	12	11	17	2	143	49	23	38
1,701-1,800	232	197	2	—	7	11	13	2	124	49	26	33
1,801-1,900	239	216	3	—	5	3	11	1	118	55	28	38
1,901-2,000	216	194	2	—	4	3	10	3	116	51	14	35
2,001-2,500	999	868	12	4	24	22	62	7	467	283	99	150
2,501-3,000	771	718	2	7	8	4	32	—	367	197	82	125
3,001-3,500	559	518	1	3	6	9	20	2	240	148	68	103
3,501-4,000	377	356	2	—	3	3	12	1	152	118	35	72
4,001-4,500	297	290	1	—	—	2	4	—	139	77	22	59
4,501-5,000	192	185	—	1	—	2	4	—	91	55	16	30
5,001-5,500	159	153	—	1	—	2	3	—	59	56	18	26
5,501-6,000	90	87	—	—	—	2	1	—	43	32	4	11
6,001-6,500	65	64	—	—	—	1	—	—	31	20	3	11
6,501-7,000	65	59	—	—	1	1	4	—	22	23	5	15
7,001-7,500	45	43	—	—	—	—	2	—	15	17	3	10
7,501-8,000	28	28	—	—	—	—	—	—	15	5	3	5
8,001-8,500	21	19	—	—	—	—	2	—	5	6	5	5
$8,501- over	72	65	—	1	1	1	3	1	23	24	10	15
Totals	**10,520**	**8,233**	**659**	**41**	**253**	**387**	**798**	**149**	**5,267**	**3,043**	**834**	**1,376**

* 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

Schedule of Retired Members by Type of Benefit - Health Insurance Reduction
December 31, 2020

(1) Non Medicare-eligible

Amount of Reduction Eligible to Receive	Number of Retirees
$ 12.50 - 50.00	84
51.00 - 100.00	289
101.00 - 150.00	272
151.00 - 200.00	184
201.00 - 250.00	221
251.00 - 300.00	223
301.00 - 350.00	229
351.00 - 400.00	219
401.00 - 450.00	157
451.00 - 500.00	42
501.00 - 550.00	9
551.00 - 600.00	4
601.00 - 650.00	2
651.00 - 700.00	2
701.00 - 750.00	1
751.00 - 800.00	1
$ 801.00 - over	1
Total	**1,940**

(2) Medicare-eligible

Amount of Reduction Eligible to Receive	Number of Retirees
$ 6.25 - 50.00	619
51.00 - 100.00	1,423
101.00 - 150.00	1,340
151.00 - 200.00	1,151
201.00 - 250.00	501
251.00 - 300.00	93
301.00 - 350.00	42
351.00 - 400.00	15
401.00 - 450.00	8
451.00 - 500.00	3
501.00 - 550.00	1
551.00 - 600.00	1
601.00 - 650.00	1
651.00 - 700.00	—
701.00 - 750.00	—
751.00 - 800.00	—
$ 801.00 - over	—
Total	**5,198**

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.

Schedule of Retired Members by Attained Age and Type of Pension Benefit

December 31, 2020

		Type of Retirement*						
Age	**Number of Retirees/ Beneficiary**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
0-24	36	—	—	—	3	28	4	1
25-29	14	—	—	—	—	2	5	7
30-34	15	—	—	—	1	7	3	4
35-39	19	—	—	—	—	11	6	2
40-44	32	—	—	—	2	14	9	7
45-49	40	—	—	—	6	14	14	6
50-54	71	3	—	—	19	31	13	5
55-59	1,061	937	21	4	22	38	34	5
60-64	1,738	1,454	96	4	58	61	49	16
65-69	2,319	1,963	109	15	48	61	103	20
70-74	2,168	1,780	145	10	51	54	109	19
75-79	1,292	954	131	—	27	24	132	24
80-84	812	565	74	4	8	17	126	18
85-89	533	355	37	4	7	14	105	11
90-94	255	166	17	—	1	5	63	3
95 and up	115	56	29	—	—	6	23	1
Totals	**10,520**	**8,233**	**659**	**41**	**253**	**387**	**798**	**149**

***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

Average Monthly Benefit Payment – Pension

Last Ten Fiscal Years

Retirement Effective Date for the Years Ended December 31:	Years of Credited Service 0-5	6-10	11-15	16-20	21-25	26-30	31+	Total
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	$4,364.42	**$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**
2017								
Average Monthly Benefit	$307.87	$614.46	$970.75	$2,185.44	$3,034.32	$3,940.37	$5,282.81	**$2,333.72**
Mean Final Average Monthly Salary	$4,056.40	$4,695.63	$4,610.13	$6,591.06	$6,936.58	$7,615.46	$8,152.56	**$6,093.97**
Number of Retirees	29	100	71	106	81	64	80	**531**
2018								
Average Monthly Benefit	$303.61	$571.19	$1,171.03	$2,088.90	$2,972.35	$4,651.16	$4,937.44	**$2,385.10**
Mean Final Average Monthly Salary	$4,031.18	$4,366.05	$5,876.33	$6,159.74	$6,597.69	$8,893.55	$7,809.30	**$6,247.69**
Number of Retirees	35	101	67	82	69	66	61	**481**
2019								
Average Monthly Benefit	$309.63	$566.25	$1,161.47	$2,385.78	$3,199.41	$4,016.27	$5,850.66	**$2,498.49**
Mean Final Average Monthly Salary	$4,124.93	$4,452.82	$5,780.38	$6,867.69	$7,234.90	$7,563.72	$8,462.15	**$6,355.23**
Number of Retirees	36	77	87	82	55	56	46	**439**
2020								
Average Monthly Benefit	$282.10	$576.28	$1,096.89	$2,378.30	$3,225.77	$4,612.82	$5,534.90	**$2,529.58**
Mean Final Average Monthly Salary	$3,330.75	$4,192.21	$5,524.10	$6,972.69	$7,022.33	$8,380.70	$8,271.98	**$6,242.11**
Number of Retirees	35	81	84	106	114	98	90	**608**

Average Monthly Benefit Payment – Health Insurance Reduction

Last Ten Fiscal Years

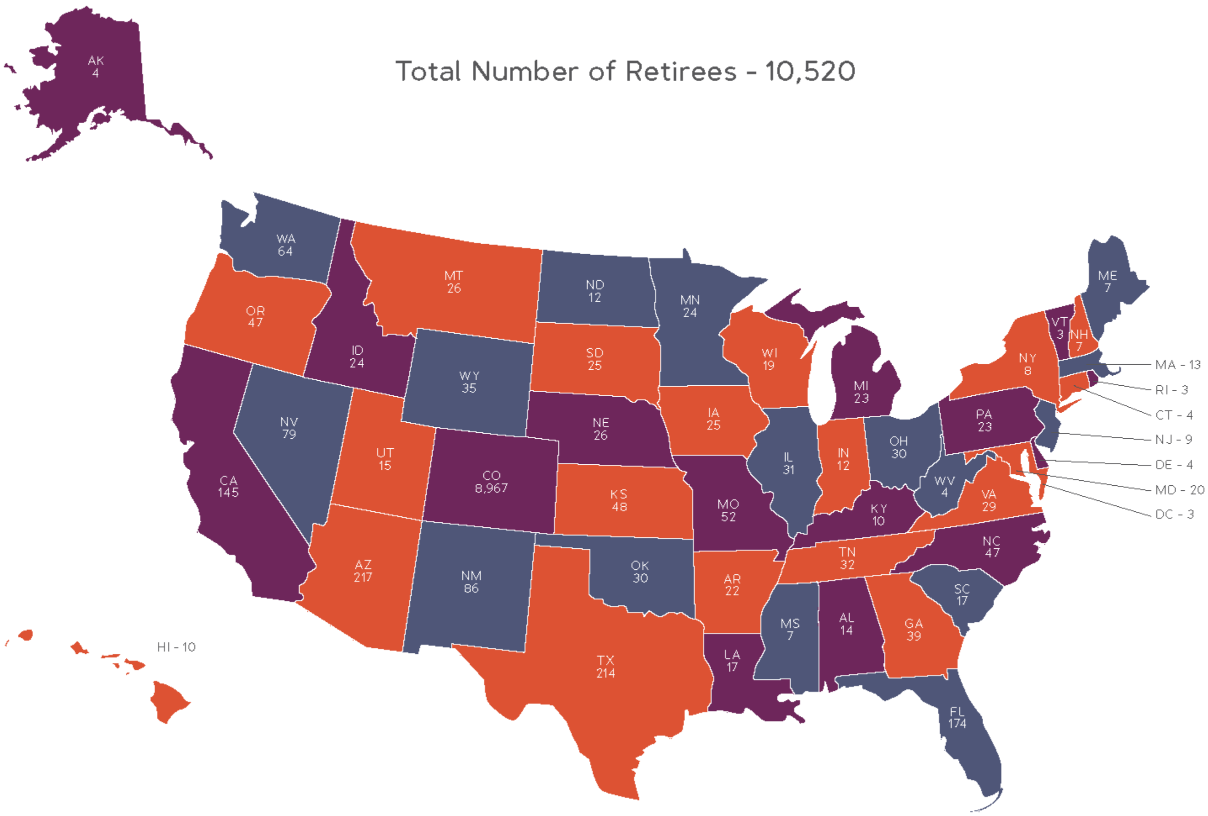
	Years of Credited Service							
As of December 31:	**1-5**	**6-10**	**11-15**	**16-20**	**21-25**	**26-30**	**31+**	**Total**
2011								
Total Eligible Reduction Amount	$4,666	$31,748	$72,015	$157,243	$200,803	$262,652	$313,342	**$1,042,469**
Average Monthly Benefit Paid	$36.45	$62.25	$93.77	$151.05	$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**
2017								
Total Eligible Reduction Amount	$6,116	$35,569	$79,516	$164,180	$208,031	$257,991	$326,844	**$1,078,246**
Average Monthly Benefit Paid	$38.23	$59.18	$88.55	$130.20	$166.03	$215.53	$277.69	**$164.69**
Number of Retirees	160	601	898	1,261	1,253	1,197	1,177	**6,547**
2018								
Total Eligible Reduction Amount	$6,096	$38,087	$80,149	$173,116	$221,294	$275,969	$347,532	**$1,142,244**
Average Monthly Benefit Paid	$36.95	$58.15	$84.81	$126.36	$164.16	$214.10	$270.24	**$161.84**
Number of Retirees	165	655	945	1,370	1,348	1,289	1,286	**7,058**
2019								
Total Eligible Reduction Amount	$6,098	$38,623	$80,951	$170,221	$218,729	$271,553	$337,494	**$1,123,669**
Average Monthly Benefit Paid	$37.18	$57.05	$84.32	$123.89	$159.31	$207.45	$257.43	**$156.76**
Number of Retirees	164	677	960	1,374	1,373	1,309	1,311	**7,168**
2020								
Total Eligible Reduction Amount	$6,362	$38,453	$80,150	$173,714	$227,911	$279,924	$348,420	**$1,154,933**
Average Monthly Benefit Paid	$37.42	$56.14	$83.32	$121.82	$159.27	$206.74	$253.77	**$156.05**
Number of Retirees	170	685	962	1,426	1,431	1,354	1,373	**7,401**

Principal Participating Employers

Current Year and Nine Years Ago

	2020			2011		
	Covered Employees	Rank	Percentage of Total System	Covered Employees	Rank	Percentage of Total System
Pension Benefits						
Participating Government:						
City and County of Denver	25,740	1	94.9 %	18,258	1	93.5 %
Denver Health and Hospital Authority	1,388	2	5.1 %	1,276	2	6.5 %
Total	**27,128**		**100.0 %**	**19,534**		**100.0 %**
Health Benefits						
Participating Government:						
City and County of Denver	25,740	1	94.9 %	18,258	1	93.5 %
Denver Health and Hospital Authority	1,388	2	5.1 %	1,276	2	6.5 %
Total	**27,128**		**100.0 %**	**19,534**		**100.0 %**

Location of DERP Retirees



Other Countries and Territories

Australia - 1
Canada - 2
Costa Rica - 3
Germany - 1
Israel - 3
Italy - 1
Mexico - 3
New Zealand - 1
Philippines - 1
Poland - 1
United Kingdom - 2