EMPLOYEES' RETIREMENT FUND OF THE CITY OF DALLAS

Financial Statements
As of December 31, 2018 and 2017
With Independent Certified Public Accountant's Report Thereon

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

(Required Supplementary Information)

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The management's discussion and analysis of the Employees' Retirement Fund of the City of Dallas (the Plan) financial performance provides an overview of the financial activities and funding conditions for the fiscal years ended December 31, 2018, 2017, and 2016. The intent of this discussion and analysis is to give a narrative overview and analysis of the Plan's financial performance as a whole. For more detailed information regarding performance, readers should also review the financial statements, notes to the financial statements, and required supplementary information in order to enhance their understanding of the Plan's financial performance.

FINANCIAL STATEMENTS

The Plan is a defined benefit plan that provides retirement, disability, and death benefits to full-time and permanent part-time civilian employees of the City of Dallas (the City). The Plan has two basic financial statements:

- A statement of fiduciary net position that provides information about the fair value and composition of plan assets, plan liabilities, and fiduciary net position; and
- A statement of changes in fiduciary net position that provides information about the year-to-year changes in fiduciary net position.

There are also notes to the financial statements that include a brief plan description, a summary of significant accounting policies, and information about contributions, legally required reserves, investment concentrations, and the net pension liability. The report also contains required supplementary information in addition to the basic financial statements. Collectively, this information presents the net position restricted for pension benefits and summarizes the changes in net position for those benefits.

FINANCIAL HIGHLIGHTS

Fiscal year 2018 experienced a decrease in investments. The Plan's Financial highlights for fiscal year ended December 31, 2018 are as follows:

- The Plan had a return of -4.43% for the year, with a 3-year return of 5.75%, and a 5-year return of 4.36%.
- The net position restricted for pension benefits was $3.3 billion as of December 31, 2018. This amount reflects a decrease of $330 million from last year. This decrease is primarily the result of net declines in master limited partnerships ("MLPs"), domestic equity, international equity and global equity funds.
- Total contributions for fiscal year 2018 were $118 million, an increase of approximately $4 million from last fiscal year. This is primarily attributed to a civilian merit pay increase.
- Pension benefits paid to retirees and beneficiaries increased $10.4 million in 2018 compared to 2017, bringing the total benefit payments to $264 million. Refunds of contributions paid to former members upon termination of employment were $8.5 million for 2018 and $8.2 million for 2017.
- Net investment income (net appreciation/depreciation in the fair value of investments, plus interest and dividend income, less investment expenses) decreased $581 million compared to last fiscal year.
- Administrative expenses of $7.5 million in 2018 were approximately $1.5 million more than 2017 due to one-time charges.

CONDENSED FINANCIAL INFORMATION

($ in thousands)

As of and for the FY Ended December 31,	2018	2017	2016
Fiduciary Net Position			
Assets	$4,120,996	$4,381,562	$4,053,238
Liabilities	838,683	769,302	701,195
Fiduciary Net Position for Pension Benefits	3,282,313	3,612,260	3,352,043
Changes in Fiduciary Net Position			
Additions:			
Employer contributions	60,924	58,966	56,130
Employee contributions	56,772	55,175	53,436
Investment & other income, net	(167,662)	413,717	295,251
Deductions:			
Benefit payments	263,981	253,534	243,775
Refund of contributions	8,515	8,156	5,864
Administrative expenses	7,484	5,951	5,343
Depreciation expense	1	-	-
Change in Fiduciary Net Position Restricted for Pension Benefits	($329,947)	$260,217	$149,835
Net Position, Beginning of Year	3,612,260	3,352,043	3,202,208
Net Position, End of Year	3,282,313	3,612,260	3,352,043

FINANCIAL POSITION AND RESULTS OF OPERATIONS

The Plan's total return for fiscal year 2018 was -4.43%, as compared to 13.29% in 2017 and 9.17% in 2016. The one year return was above the policy benchmark of -4.49%. The Plan has performed well over longer time periods. The Plan's 3-year return is 5.75% and the 5-year return is 4.36%.

The best performing asset class in 2018 was private equity, returning 15.11%. The Plan's real estate investments generated 1.09% for the year. The real estate investments consist of publicly traded real estate funds called real estate investment trusts ("REITS") and domestic private real estate funds. The investments in domestic equity returned -8.67% for the year. Overall, the Plan's investment portfolio decreased from $3.6 billion in fiscal year 2017 to $3.3 billion in 2018, a decrease of approximately $330 million.

Additions to fiduciary net position consist of employer and employee contributions and investment income. For fiscal year 2018, additions to fiduciary net position reflect an decrease of $578 million, in comparison to 2017. This decrease is primarily due to a reduction in the fair value of investments,

specifically MLPs, international equities, domestic equities, and global equities. City and employee contributions for fiscal year 2018 were $61 million and $57 million, respectively. Total contributions for 2018 were $118 million compared to $114 million in 2017 and $110 million in 2016.

Net investment income/(loss) is presented net of investment expenses and is comprised of interest, dividend income, gains/(losses) from the sale of investments, net unrealized appreciation/(depreciation) in the fair value of investments, and net income from securities lending activities. For fiscal year 2018, the Plan had a net investment loss of $168 million, (excluding non-investment income of $121 thousand) compared to a net investment gain of $414 million in fiscal year 2017.

Fiscal year 2018 liabilities of $839 million showed an increase of 9% over fiscal year 2017 liabilities of $769 million. Liabilities for 2017 increased $218 million or 9.71% over 2016. The increase in 2018 was primarily due to an increase in currency forward contracts. Year end balances for securities purchased were $9 million in 2018, $13 million in 2017 and $4 million in 2016. Foreign currency exchange contracts at year end were $548 million in 2018, $458 million in 2017 and $383 million in 2016. The changes were due to investment managers' portfolio management.

Deductions from Fiduciary Net Position are largely from benefit payments. During fiscal year 2018, benefits paid were $264 million, an increase of $10.4 million over payments made in 2017. The major cause of the 2018 increase is attributable to new retirements with higher base benefits, as was the increase between 2017 and 2016.

New retirements were 314, 354 and 324 respectively for fiscal years 2018, 2017 and 2016. Cost of living adjustments (COLA) were 2.1% in 2018, 1.4% in 2017 and 0.0% in 2016. A COLA is granted effective January 1 of each year if there is an increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) either from October of the prior year to October of the current year or if the monthly average change is greater than zero. During fiscal year 2018, refunds of contributions amounted to $8.5 million (626 refunds), compared to 2017 refunds of $8.2 million (546 refunds) and 2016 refunds of $5.9 million (478 refunds). The fiscal year 2018 refund amount reflects an increase in the number of members requesting refunds as compared to fiscal year 2017. Administrative expenses of approximately $7.5 million represent approximately 3% of total deductions for the year.

CURRENT ENVIRONMENT

Plan membership for active members decreased during fiscal year 2018. Active membership as of December 31, 2018 decreased from 7,838 to 7,584 members, a decrease of 3.35%. For 2018, the number of new retirements was 314 compared to 354 in 2017. The trend of benefit payments continues to increase. Similar to most mature plans, benefit payments exceed the level of contribution revenue received, and cash generated from investments is needed in order to meet benefit payments.

An actuarial valuation of the Plan's assets and benefit obligations is performed annually by an independent firm, Gabriel Roeder Smith & Company (GRS). Based on the actuarial value of assets, the funded ratio of the Plan decreased from 82.3% in 2017 to 80.0% in 2018. The Unfunded Actuarial Accrued Liability increased from $776 million as of December 31, 2017 to $907 million as of December 31, 2018. Based on Generally Accepted Accounting Principles ("GAAP") requirements, the Plan Fiduciary Net Position as a percentage of the Total Pension Liability was 59.16% in 2018 as compared to 82.51% in 2017. This is due to a decrease in plan net position and a blended discount rate of 5.98% in 2018. See Note 10 (b) for more information regarding the discount rate.

EMPLOYEES' RETIREMENT FUND OF
THE CITY OF DALLAS
Statements of Fiduciary Net Position
As of December 31, 2018 and 2017
($ in thousands)

	2018	2017
ASSETS:		
Cash and short-term investments	$ 102,781	$ 117,468
Collateral on loaned securities	270,118	288,565
	372,899	406,033
Capital Asset:		
Construction In Progress	3,186	-
Furniture and Fixtures, net	17	-
Total capital assets (net)	3,203	-
Receivables:		
Currency contracts	547,775	457,697
Currency contract gains	-	268
Accrued dividends	3,664	4,240
Accrued interest	9,819	9,255
Accrued securities lending	113	103
Securities sold	2,789	7,499
Employer contributions	2,058	1,788
Employee contributions	1,903	1,656
Total receivables	568,121	482,506
Investments, at fair value:		
Commingled index funds	152,656	163,761
Domestic equities	1,210,491	1,377,442
United States and foreign government fixed income securities	198,090	210,114
Domestic corporate fixed-income securities	713,543	720,300
International equities	419,497	508,457
Investments, at estimated fair value:		
Private equities	245,809	210,182
Real estate	236,687	302,767
Total investments	3,176,773	3,493,023
Total assets	4,120,996	4,381,562
LIABILITIES:		
Accounts payable	7,455	6,645
Payable for securities purchased	8,597	13,315
Investment fees payable	3,564	3,080
Currency contracts	547,775	457,697
Currency contract losses	1,174	-
Securities lending collateral	270,118	288,565
Total liabilities	838,683	769,302
NET POSITION		
Net Investment in capital assets	3,203	-
Unrestricted	3,279,110	3,612,260
Net position RESTRICTED for PENSION benefits	$3,282,313	$3,612,260

(A Schedule of Net Pension Liability is presented on page 52)

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

EMPLOYEES' RETIREMENT FUND OF
THE CITY OF DALLAS
Statements of Changes in Fiduciary Net Position
As of December 31, 2018 and 2017
($ in thousands)

	2018	2017
Additions:		
Contributions:		
Employer	$ 60,924	$ 58,966
Employee	56,772	55,175
Total contributions	117,696	114,141
Net investment income:		
Dividends	57,666	51,902
Interest	46,217	43,151
Real estate dividend income	6,268	6,917
Net appreciation/(depreciation) in fair value of investments	(261,974)	326,541
Securities lending rebates paid by borrowers	(5,419)	(2,376)
Securities lending income	7,144	4,261
Total investment income/(loss)	(150,098)	430,396
Less investment expenses:		
Investment management fees	(16,825)	(15,984)
Custody fees	(126)	(140)
Consultant fees	(389)	(385)
Securities lending management fees	(345)	(377)
Total investment expenses	(17,685)	(16,886)
Net investment income/(loss)	(167,783)	413,510
Other income	121	207
Total additions	(49,966)	527,858
Deductions:		
Benefit payments	263,981	253,534
Refund of contributions	8,515	8,156
Administrative expenses	7,484	5,951
Depreciation expense	1	-
Total deductions	279,981	267,641
Net increase/(decrease) in net position restricted for pension benefits	(329,947)	260,217
Net position RESTRICTED FOR PENSION benefits		
Beginning of year	3,612,260	3,352,043
End of year	$3,282,313	$3,612,260

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

1) Description of the Plan

a) General

The Employees' Retirement Fund of the City of Dallas ("ERF" or the "Plan") is a single-employer defined benefit pension plan that provides retirement, disability, and death benefits to its members, and is sponsored by the City of Dallas, Texas (the "City"). All employees of the City are members in the Plan, except police officers, firefighters, elected officers, non-salaried appointee members of administrative boards or commissions, part-time employees working less than one-half time, temporary employees, individuals working under contract, and individuals whose salaries are paid in part by another government agency. Members are entitled to retirement benefits after five years of service and to survivor benefits after two years of service or at the date of eligibility for retirement. The Plan was established and derives its authority to continue in operation from Chapter 40A of the Dallas City Code ("Chapter 40A"). The description of the Plan provisions in this report is for financial disclosure only. It is not intended to create or reduce legal rights. The rights and responsibilities of the Board of Trustees, the Plan, the members and the retirees are governed by the Plan as set forth in Chapter 40A. As of December 31, 2018 and 2017, the Plan's membership consisted of:

	2018	**2017**
Retirees and beneficiaries currently receiving benefits and inactive members entitled to benefits but not yet receiving them	8,716	8,290
Current members:		
Vested	4,420	4,434
Non-vested	3,164	3,404
Total current members	7,584	7,838
Total membership	16,300	16,128

Plan Administration

The Plan is governed by seven Board members, consisting of three members appointed by the City Council who may be Council members, three employee members of the Plan (elected by the membership) and the City Auditor (serving ex officio). The Board has general powers and duties to administer the Plan, including appointing an administrator to carry out the business of the Board, investing the assets of the Plan, making expenditures from the Plan, and determining members' eligibility for benefits.

Based on a Plan amendment passed by the voters of the City of Dallas in November 2004, the Board annually increases or decreases contribution rates in a ratio where the City pays 63% and the employee pays 37% of the contribution rate as determined by the actuarial valuation. The Plan requires notice to the City of the contribution rates and provides procedures by which the City may review and challenge those rates; codifying the Board's policies and procedures relating to the

Plan's actuarial process and the City's participation in the selection of an actuarial firm to perform a peer review/audit; increasing the Board from five members to seven by adding another employee-elected representative and another council-appointed representative effective March 1, 2005; increasing from three to four the number of Board members required to constitute a quorum; increasing the terms of the employee-elected representatives from two to three years; requiring Council approval before the Board may grant temporary or permanent discretionary adjustments to retirement benefits over and above the regular cost-of-living increases; correcting section references to the term "qualified recipient"; and authorizing either the Council or the Board to propose amendments to Chapter 40A, subject to approval by the Board, the Council, and the voters of the City.

Based on a Plan amendment passed by the voters of the City of Dallas in November 2016, a new tier of benefits was added to the Plan (Tier B), effective January 1, 2017. Benefits provided to each tier of membership are outlined below.

The Plan may be terminated only by ordinance recommended by the Board, adopted by the City Council, and approved by a majority of the voters of the City voting in a general or special election. The Plan does not address allocation of the net position in the event of termination.

c) Pension Benefits

Tier A

Members of the Plan hired before January 1, 2017, are entitled to pension benefits equal to 2.75% of the average monthly earnings for each year of credited service. Average monthly earnings are based on the most beneficial to the member and are determined based on the member's earnings for the highest three calendars years, last 6,240 hours of credited services, or the length of credited service if less than three years. Normal retirement age is 55 if credited service began before May 9, 1972 or age 60.

Tier A members are also eligible to retire at age 50 if the sum of the member's age and credited service is equal to or greater than 78. Members who have completed 30 years of credited service may alternatively elect retirement before age 50; however, the pension benefits will be actuarially reduced based on the member's age at retirement.

Tier B

Members of the Plan hired on or after January 1, 2017 are entitled to pension benefits equal to 2.5% of the average monthly earnings of the member for each year of credited service. Average monthly earnings are based on the most beneficial to the member and are determined based on the member's earnings for the five highest calendar years, last 10,400 hours of credited service, or the length of credited service if less than five years. Normal retirement age is 65 with five years of credited service.

Tier B members who have completed 40 years of credited service may elect retirement at any age and are entitled to full pension benefits. Members who elect retirement before age 65 are entitled

to an actuarially reduced pension benefits depending upon the age of the member. Active members may also elect to retire with actuarially reduced benefits once a combination of their age and years of service equal at least 80.

d) Cost of Living Adjustments

Cost of living adjustments for retirees are made each year on the first of January by adjusting the pension base by the percentage change of the Consumer Price Index, not to exceed 5% for Tier A and 3% for Tier B members. The cost of living adjustment effective January 2018 was 2.05% and 1.44% effective January 2017.

e) Disability and Death Benefits

Members who become totally and permanently disabled may qualify for a service-connected disability with no minimum service requirement, or a non-service connected disability with five or more years of credited service. Non-service connected benefits are based on actual credited service or a minimum of 10 years. Service-connected benefits are equal to normal retirement benefits or a minimum of $1,000.

Upon the death of an active married member with less than 15 years of service, the joint and one-half survivor option is the automatic death benefit.

If an active member has at least 15 years of service and is eligible to retire, the member may elect the joint and full survivor option. Under this option, the member receives a reduced base pension payment which is actuarially computed based on the member's age, average monthly earnings, years of credited service at retirement, and the relative age of the spouse. Upon the death of the member, this option pays the full amount of the member's pension payment to the surviving spouse for life.

Upon the death of a member before retirement, death benefits equal to the normal retirement benefit will be paid to a qualified recipient: surviving spouse, minor child under age 18, a disabled child who became disabled before age 18, a dependent parent, or a parent over age 65. Death benefits vary depending on the beneficiary. The surviving spouse, the disabled child, or the dependent parent will receive a lifetime benefit unless the ten-year option is taken. The minor child under age 18 will receive the normal retirement benefit for ten years or until reaching age 18. If the member has less than two years of credited service, the member's contributions will be refunded.

Upon the death of a retired member, a death benefit is paid in accordance with the option selected by the member at retirement. If there are no qualified recipients at the time of death and benefits have not been paid for ten years, death benefits are paid to the designee (an estate, a person or an entity) named by the member. The designee will receive a lump-sum payment based on ten years of benefit payments when the member's death occurs before retirement. If death occurs after retirement, the designee will receive a commuted lump-sum payment representing the balance of a guaranteed ten-year period starting from the date of retirement.

If a member does not have an eligible beneficiary, death benefits will be paid to the designee or member's estate in one commuted value payment. Benefit payments will vary depending on whether death occurred before or after retirement. Upon the death of a member before retirement, the designee or member's estate will receive a lump-sum payment based on ten years of benefit payments. Upon the death of a retired member, the designee or estate will receive a commuted value lump-sum payment representing the balance of a guaranteed ten-year period starting from the date of retirement.

f) Contributions

If employment ends before attaining five years of service and before attaining eligibility for retirement, the member's contributions will be refunded upon written request to the Plan.

If a member's employment is terminated after five years of service, the member may elect a refund of contributions upon a written request, or the member may elect to receive pension benefits at normal retirement age equal to the amount accrued to the date of termination.

Based on the authorization in the Plan, the annual actuarial valuation will establish any new contribution rates for employees and the City. The new rates which became effective October 1, 2018 are 13.32% for employees and a combined rate of 22.68% of pay for the City. The City's 22.68% is divided into 14.39% to the Plan and 8.29% for debt service payments on the pension obligation bonds. The former rates, effective October 1, 2017, were 13.32% of pay for employees and a combined rate of 22.68% of pay for the City.

The percent contributed may vary from the legally required rate as the annual required contribution is based upon covered payroll as of the actuarial valuation date, December 31, whereas contributions are calculated and paid based upon actual payrolls throughout the year. Certain factors, such as changes in benefit provisions, the size or composition of the population covered by the Plan or the actuarial assumptions used, may significantly affect the identification of trends in the amounts reported in the Schedule of Net Pension Liability and Schedule of Changes in Net Pension Liability located in the Required Supplementary Information section.

2) Summary of Significant Accounting Policies

a) Basis of Accounting

The accompanying financial statements are prepared on the economic resources measurement focus and accrual basis of accounting. Accordingly, interest earned but not received and dividends declared but not received as of the Plan's fiscal year end are recorded as accrued interest and dividends receivable, respectively. Contributions owed but not received as of the Plan's fiscal year end are recorded as contributions receivable. Benefits and refunds are recorded when paid. In addition, unsettled investment purchases and sales are accrued.

b) Administrative Expenses

Administrative expenses are paid from the Plan's contributions. The contribution rates calculated by the actuary take into consideration the expected administrative expenses.

c) Use of Estimates

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

d) Investments and Investment Income

The Plan's investment policy requires that investments comply at all times with applicable local, state and federal regulations. The Plan's investment policy is based upon an asset allocation study that considers the current and expected condition of the Plan, the expected long-term capital market outlook and the Plan's risk tolerance. Unless specifically permitted in the investment manager guidelines or other governing document, the investment policy prohibits the purchase of non-negotiable securities, short sales, selling on margin, puts, calls, straddles, options, or "letter" (restricted) stock. Also, unless specifically authorized in a manager's individual guidelines, the investment policy prohibits the use of derivatives (See derivatives disclosure in footnote 3).

Marketable securities are valued at fair value based on quoted market prices, where available. Purchases and sales of securities and any resulting gain or loss are recorded on a trade-date basis. Net appreciation/(depreciation) include the Plan's gains and losses on investments bought and sold as well as held during the year.

In July 2018, the Plan modified the asset allocation. The Plan's asset allocation is shown in the following table.

Asset Class	Allocation Percent
US Equity	
Domestic Equity	15.0
Real Estate	5.0
REITs	5.0
Private Equity	5.0
MLPs	7.5
Total US Equity	37.5
Non-US Equity	
International	15.0
Global	7.5
Global Low Volatility	10.0
Total Non-US Equity	32.5
Total Equity	**70.0**
Opportunistic Credit	5.0
Global Investment Grade	15.0
High Yield	10.0
Total Fixed Income	**30.0**
Total Fund Allocation	**100.0**

e) Private Equity

To enhance the potential for earning higher rates of return relative to its other asset classes and to provide for broader portfolio diversification, the Plan, in 2009, allocated 5% of its total Plan portfolio to private equity. Recognizing that private equity investments have higher risk levels, this target of 5.0% is to be allocated within an acceptable range of 0.0% to 7.0% of private equity-oriented investments. Funding of committed capital in the private equity portfolio can occur over an extended time period and may take several years before the total allocation is fully invested. In order to reach the allocation target, a "committed" allocation up to 1.5 times the allocation is authorized. The Plan currently has three private equity managers.

Investments in these funds as a limited partner are carried at estimated fair value. Estimated fair values of investments in private limited partnerships are determined by the fund managers or general partner based on the latest investee information available, including audited financial statements and other similar data necessary to the valuation process. The private equity value at December 31, 2018 and December 31, 2017 was $246 million and $210 million, respectively.

f) Real Estate

The Plan is authorized to allocate 5% of its portfolio to private real estate. The Plan has two managers that manage real estate funds for a value of $237 million at December 31, 2018 and $303 million at December 31, 2017. The Plan invests in Heitman's core real estate fund, Invesco's core fund, and in Invesco II.

Estimated fair values of investments in these funds are determined by the fund managers based on their best estimates using fair value estimation techniques substantiated, in part, by their audited financial statements and supported by the due diligence of the Plan investment staff.

g) Foreign Currency Transactions

The Plan may enter into forward foreign currency exchange contracts for the purchase or sale of a specific foreign currency at a fixed price on a future date as a hedge against specific transactions or portfolio position to protect the Plan against adverse currency movements. Entering into these arrangements involves the risk of dealing with counterparties and their ability to meet the terms of the contracts. These contracts are valued at fair value at the financial statement date, and any realized and unrealized gains and losses are recorded when they are incurred.

Investments denominated in foreign currencies at December 31, 2018 and 2017 were converted to U.S. dollars at the foreign exchange rates quoted at December 31, 2018 and 2017. These foreign exchange gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

h) Securities Lending

The Board has authorized the Plan to enter into an agreement with The Northern Trust Company ("Northern Trust") for the lending of certain of the Plan's securities (the "Securities Lending Program" or "Program") including, but not limited to, stocks and bonds to counterparty brokers and banks ("borrowers") for a predetermined period of time and fee.

In 2009, the Board capped the securities lending exposure at $538.2 million.

i) Rate of Return

For the year ended December 31, 2018, the annual money-weighted rate of return on pension plan investment, net of investment fees, was -4.99%. The money-weighted rate of return expresses investment performance, net of investment expenses, adjusted for the changing amounts actually invested.

Schedule of Money-Weighted Investment Returns

For Year Ended December 31	Annual Investment Returns*
2016	8.88%
2017	13.08%
2018	-4.99%

*Annual money-weighted rate of return, net of investment fees and adjusted for the changing amounts actually invested. This schedule is intended to include information for ten years. Additional years will be included as they become available.

j) Capital Assets

Capital assets, which include furniture, fixture, and software, are reported in Plan's financial statements. Capital assets are defined by the Plan as assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of two years. As the Plan constructs or develops additional capital assets each period, they are capitalized and reported at historical cost. The reported value excludes normal maintenance and repairs which are essentially amounts spent in relation to capital assets that do not increase the capacity or efficiency of the item or increase its estimated useful life.

Furniture and fixtures are depreciated using the straight line method over an estimated useful life of 5-20 years. Software is depreciated using the straight line method over an estimated useful life of 5-15 years. Constuction in progress is not depreciated.

3) Derivatives

Derivatives are generally defined as contracts whose values depend on, or are derived from, the value of an underlying asset, reference rate, or index. The Plan has classified the following as derivatives:

a) Currency Forward Contracts

A currency forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during fiscal years 2018 and 2017. Currency forwards are usually traded over-the-counter. These transactions are entered into in order to hedge risks from exposure to foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Currency forwards carry market risk resulting from adverse fluctuations in foreign exchange rates. Recognition of realized gain or loss depends on whether the currency exchange rate has moved favorable or unfavorable to the contract holder upon termination of the contract. Prior to termination of the contract, the Plan records the unrealized currency translation gain or loss based on the applicable exchange rates.

The Plan recognized a net realized loss on forward contracts of $2.5 million as of December 31, 2018 and a net realized gain of $0.83 million as of December 31, 2017. As of December 31, 2018, the Plan had a net unrealized loss on forward contracts of $959 thousand and a net unrealized gain of $268 thousand at December 31, 2017. These gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

Currency forward contracts outstanding at December 31, 2018 and 2017 were approximately $548 million and $458 million, respectively ($ in thousands).

Currency	2018 Currency Forward Contracts Outstanding	2017 Currency Forward Contracts Outstanding
Australian Dollar	$ 36,152	$ 31,982
Brazilian Real	1,642	1,574
Canadian Dollar	31,866	31,881
Chile Peso	4,651	3,425
Chinese Yuan renminbi	2,038	-
Columbian Peso	2,341	100
Czech Koruna	2,985	4,102
Denmark Krone	249	525
Euro	29,519	28,659
Hong Kong Dollars	4,509	4,866
Hungary Forint	337	2,726
Indonesia-Rupiahs	1,088	114
Indian Rupee	11,484	5,255
Israel Shekel	1,221	-
Japanese Yen	32,826	38,122
Korean Won	-	1,722
Mexican Peso	6,082	5,564
New Zealand Dollar	23,178	14,107
Norwegian Krone	22,238	11,229
Peruvian Nuevo Sol	-	20
Philippine Peso	1,429	899
Poland Zloty	1,928	4,191
Russia Ruble	3,061	1,723
Singapore Dollar	3,501	2,252
South Africa Rand	4,561	2,940
South Korea Won	5,031	-
Swedish Krona	19,532	9,021
Switzerland Franc	11,255	9,239
Thailand Baht	152	157
Turkey Lira	519	5,315
Taiwan New Dollar	556	2,651
UK Pound	16,004	9,859
US Dollar	265,840	223,477
Totals	$547,775	$457,697

b) Other Forward Contracts

Forward contracts other than currency forward contracts include rights and warrants and various other contractual agreements between two parties to buy or sell an asset at a specified price on a certain future date. Forward contracts carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such loss is remote. No such losses occurred during fiscal years 2018 and 2017. Forward contracts are usually traded over-the-counter. These transactions are entered into in order to hedge risks from exposure to fluctuations in prices in securities, commodities, or other financial instruments. Forward contracts carry market risk resulting from adverse fluctuations in price. Recognition of realized gain or loss depends on whether the price of the asset has moved favorable or unfavorable to the contract holder upon termination of the contract. Prior to termination of the contract, the Plan records the unrealized gain or loss based on the applicable rates.

The Plan recognized a net realized gain on forward contracts of $1.4 million as of December 31, 2018. As of December 31, 2018, the Plan had a net unrealized gain on forward contracts of $95 thousand. These gains are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

c) Swaps

A swap is an agreement between two or more parties to exchange a sequence of cash flows over a period of time in the future. No principal is exchanged at the beginning of the swap. The cash flows that the counterparties exchange are tied to a “notional” amount. The agreements provide, at predetermined future dates, the Plan pays interest based upon a notional principal amount and receives a return based upon the underlying instrument. Notional amounts represent the volume of outstanding transactions and do not represent the potential gain or loss associated with market risk or credit risk of such instruments. Risk associated with swaps includes adverse movements in the underlying instrument.

The Plan recognized a net realized gain of $1.4 million. As of December 31, 2018, the Plan had a net unrealized loss on swaps of $310 thousand. The gains and losses are included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

d) Futures

Financial futures are agreements to purchase or sell a specific amount of an asset at a specified delivery or maturity date for an agreed upon price. These derivative securities are used to improve yield, adjust the duration of the fixed income portfolio, circumvent changes in interest rates, or to replicate an index. Futures contracts are standardized and traded on organized exchanges, thereby minimizing the Plan’s risk. There were no outstanding futures contracts at December 31, 2018 and December 31, 2017.

The Plan recognized a net realized loss of $2.5 million. The loss is included in net appreciation/(depreciation) in fair value of investments in the accompanying Statements of Changes in Fiduciary Net Position.

As of December 31, 2018 and 2017 open derivatives contracts values are as follows ($ in thousands):

	12/31/2018		12/31/2017	
Derivative Type	**Total Notional Value**	**Total Fair Value**	**Total Notional Value**	**Total Fair Value**
Forward Contracts	$547,775	($959)	$457,697	$268
Other Forwards	8,384	95	-	-
Swap Agreements	-	(310)	52,285	
				299
Totals	$556,159	($1,174)	$509,982	$567

4) Deposit and Investment Risk Disclosures

Deposits and investments of state and local governments are exposed to risks that have the potential to result in losses. The common deposit and investment risks include custodial credit risk, credit risk, concentration of credit risk, interest rate risk, and foreign currency risk. The required disclosures related to these risks and the Plan's exposures to these risks are disclosed in the following sections.

a) Custodial Credit Risk

In the event of a failure of the counterparty, custodial credit risk is the risk that the Plan will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. The Plan's custodial credit risk policy is set forth in Chapter 40A of the Dallas City Code and in the master custody agreement which includes the securities lending program. All investments are registered in the name of Employees' Retirement Fund of the City of Dallas or in the name of the Plan's custodian established through a master trust custodial agreement. The securities are held by the custodian in the name of the Plan.

As of December 31, 2018 the Plan had $2.2 million or 0.07% of its approximate $3.2 billion total investments (excluding short term investments) exposed to custodial credit risk. The risk exposure at December 31, 2017 was $1.5 million or 0.04% of total investments (excluding short term investments) of approximately $3.5 billion. These exposures were uninsured and uncollateralized deposits held by custodian banks outside of the United States. The Plan has experienced no losses on these deposits during the year.

b) Concentration of Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of an investment in a single issuer. A concentration of investments in any one single issuer of debt securities presents a greater risk for loss in the event that the issuer fails on its obligations.

The Board has contracted with third party investment managers to manage the investment portfolio of the Plan, subject to the policies and guidelines established by the Board. The Plan's concentration of credit risk policy is communicated to individual managers in their guidelines through limitations or restrictions to securities, sectors, debt ratings, and other factors that may be applicable to a particular manager. As the Plan's custodian bank, Northern Trust has responsibility for the safekeeping of certain investments, handling of transactions based on the instructions of investment managers, and recordkeeping for the investment transactions.

The Plan had no investments that individually represent 5% or more of the net position available for Plan benefits at December 31, 2018.

c) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. Credit quality ratings for the Plan's investments in fixed income securities as of December 31, 2018 and 2017 are included in the schedule below. Securities are rated using Standard and Poor's quality ratings as presented below in the rating scale.

The Plan's strategic fixed income investment policy allocates 30% of the total assets to fixed income. The policy provides for investment of up to 15% of the fixed income allocation in investment grade assets, up to 10% of the fixed income allocation in high yield (below investment grade) assets, and up to 5% for opportunistic credit. The investment grade allocation also allows selected managers to invest in non-US dollar issues on an opportunistic basis up to 20% of their portfolio assets.

Long term bond ratings as of December 31, 2018 and 2017 are as follows (in thousands):

	2018		2017	
Quality Rating	Fair Value	Percentage of Bond Portfolio	Fair Value	Percentage of Bond Portfolio
AAA	$ 57,599	6.32	$ 60,609	6.51%
AA+	17,386	1.91	24,083	2.59%
AA	4,828	0.53	5,514	0.59%
AA-	6,344	0.70	7,119	0.77%
A+	6,919	0.76	4,307	0.46%
A	5,692	0.62	5,383	0.58%
A-	23,476	2.58	22,797	2.45%
BBB+	16,478	1.81	24,985	2.69%
BBB	16,429	1.80	13,384	1.44%
BBB-	20,193	2.22	19,979	2.15%
BB+	28,069	3.08	33,752	3.63%
BB	43,445	4.77	48,745	5.24%
BB-	56,002	6.14	76,529	8.23%
B+	45,113	4.95	61,139	6.57%
B	40,248	4.42	63,069	6.78%
B-	36,414	3.99	48,224	5.18%
CCC+	11,647	1.28	18,131	1.95%
CCC	2,716	0.30	6,822	0.73%
CCC-	71	0.01	1,874	0.20%
CC	226	0.02	1,591	0.17%
C	371	0.04	469	0.05%
DDD	149	0.02	192	0.02%
D	1,455	0.16	882	0.09%
Not rated (NR)*	257,858	28.29	292,290	31.42%
U.S. Government fixed income securities (NR)**	212,505	23.31	88,545	9.52%
	$ 911,633	100.00%	$ 930,414	100.00%

* NR-Investments that are not rated.

**NR-U.S. Treasury Bonds and Notes are obligations of the U. S government or explicitly guaranteed by the US. government and therefore are not considered to have a credit risk.

d) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Plan's foreign currency risk policy is communicated to those managers who are authorized to hedge currencies in their guidelines and sets specific parameters for each manager individually.

The Plan's investment policies limit the aggregate amount that can be invested in each class of investments. The equity investment policy sets an allocation of 15% of assets to international equity, 7.5% of assets to global equity and 10% to global low volatility equity.

The Plan's positions in international equity securities, directly and through commingled funds, were 13.21% and 14.56% of invested assets at December 31, 2018 and 2017, respectively. The Plan's position in global equity securities was 3.75% and 3.24% of invested assets at December 31, 2018 and 2017, respectively. The Plan's position in global low volatility equity was 10.57% at December 31, 2018 and 10.73% at 2017. The Plan's positions in global fixed income assets were 6.24% and 6.02% of invested assets at December 31, 2018 and 2017, respectively.

Non-US Dollar denominated investments at December 31, 2018 and 2017 were as follows (in thousands):

	2018			2017		
	U. S. Dollars Balance of Investments			U. S. Dollars Balance of Investments		
Currency	Equities	Fixed	Currency Forward	Equities	Fixed	Currency Forward
Australian Dollar	10,060	3,001	36,152	$ 10,605	$ 1,117	$31,982
Australian Schilling	-	-	-	-	-	-
Belgium Franc	-	-	-	-	-	-
Brazil Real	4,332	-	1,642	3,350	-	1,574
British Pound Sterling	43,953	1,899	16,004	51,804	-	9,859
Canadian Dollar	30,783	-	31,866	36,062	-	31,881
Chile Peso	-	-	4,651	-	-	3,425
Columbia Peso	-	-	2,341	-	-	100
Czech Republic-Koruna	1,739	-	2,985	1,298-	-	4,102
Denmark Krone	7,443	-	249	7,090	-	525
Dutch Guilder	-	-	-	-	-	-
Euro	88,926	13,243	29,519	106,143	2,316	28,659
Finland Markka	-	-	-	-	-	-
French Francs	-	-	-	-	-	-
German Marks	-	-	-	-	-	-
Hong Kong Dollars	39,485	-	4,509	42,828	-	4,868
Hungary-Forint	893	-	337	1,648	-	2,726
Indian Rupee	-	-	11,484	-	-	5,255
Indonesia-Rupiahs	2,606	3,934	1,088	3,713	-	114
Israel Shekel	5,006	-	1,221	5,218	-	-
Italian Lira	-	-	-	-	-	-

EMPLOYEES' RETIREMENT FUND OF
THE CITY OF DALLAS
Notes to the Financial Statements
December 31, 2018 and 2017

	2018			2017		
	U. S. Dollars Balance of Investments			U. S. Dollars Balance of Investments		
Currency	Equities	Fixed	Currency Forward	Equities	Fixed	Currency Forward
Japanese Yen	81,183	-	32,826	87,550	-	38,122
Korean Won	-	-	-	-	-	1,722
Malaysia Ringgit	1,802	-	-	3,614	-	-
Mexican Peso	1,793	-	6,082	2,847	-	5,564
New Zealand Dollar	4,203	-	23,178	4,072	-	14,107
Norwegian Krone	5,256	-	22,238	6,643	-	11,229
Offshore-Chinese-Renminbi	3,153	-	2,038	-	-	-
Peruvian Nuevo Sol	-	-	-	-		20
Philippines-Pesos	1,029	-	1,429	1,248	-	899
PEI	-	-	-	-	-	-
Poland-Zloty	1,006	-	1,928	1,389	-	4,191
Qatar-Ryal	800	-	-	-	-	-
Portuguese Escudos	-	-	-	-	-	-
Russian Ruble	3,928	-	3,061	-	-	1,723
Singapore Dollar	2,406	-	3,501	4,689	-	2,252
South Africa Rand	4,206	4,258	4,561	5,668	-	2,940
South Korea-Won	14,810	-	5,031	-	-	-
Spanish Pesetos	-	-	-	-	-	-
Swedish Krona	13,005	-	19,532	14,087	-	9,021
Swiss Franc	30,817	-	11,255	30,617	-	9,239
Taiwan New Dollar	3,609	-	556	3,876	-	2,651
Thailand Baht	7,846	-	152	1,763	-	5,315
Turkish Lira	585	-	519	4,012	-	7,973
United Arab-Dirham	159	-	-	11	-	-
Total	$ 416,822	$26,335	$ 281,935	$471,093	$ 3,433	$ 234,220

e) Interest Rate Risk

Interest rate risk is the risk that future changes in prevailing market rates of interest will have an adverse effect on the fair value of debt investments. The fair values of securities with long terms to maturity may be highly sensitive to interest rate changes.

As of December 31, 2018 and 2017 the weighted-average maturity of the bonds by bond type are as follows ($ in thousands):

	2018		2017	
Bond Category	Fair Value 12/31/2018)	Weighted Average Maturity (years)	Fair Value 12/31/2017	Weighted Average Maturity (years)
Asset Backed Securities	$ 32,791	12.20	$ 33,419	10.19
Bank Loans	25,806	5.45	8,441	5.25
Commercial Mortgage-Backed	29,389	27.36	26,143	27.76
Corporate Bonds	493,235	7.97	516,203	7.64
Government Agencies	56,211	18.95	167,634	11.96
Government Bonds	151,413	13.33	57,660	10.66
Government Mortgage-Backed Securities	91,145	20.47	88,983	31.71
Index Linked Government Bonds	7,635	11.93	1,060	29.98
Municipal/ Provincial Bonds	13,729	20.80	20,832	16.20
Non-Government Backed CMOs	10,279	24.23	10,039	22.71
Total	$911,633		$930,414	
Portfolio weighted average maturity		11.90		10.42

Government Mortgage Backed Securities are most sensitive to changes in interest rates as their prepayments can vary significantly with interest rate changes. This change in prepayments will generally cause the duration, or interest rate risk, of these securities to increase when interest rates rise and decrease when interest rates fall. These securities represent 11.81% and 10.02% of the total fixed income portfolio for 2018 and 2017 at year end. Their fair values at year end 2018 and 2017 were $107.7 million and $103.3 million, respectively. The Plan's interest rate risk policy is communicated to the fixed income managers through the Fixed Income Asset Policy and each manager's guidelines.

5) Appreciation or Depreciation of Investments

In 2018 and 2017, the Plan's investments, including investments bought, sold, and held during the year, appreciated (depreciated) in value as follows (in thousands):

	2018	2017
Investments, at fair value:		
Commingled index funds	$ (14,086)	$15,714
Domestic equities	(175,581)	56,379
United States and foreign government fixed income securities	(14,947)	7,069
Domestic corporate fixed-income securities	(39,187)	3,203
International equities	(42,464)	219,894
Short-term investments	(447)	(407)
Currency contracts	260	385
	(286,452)	302,237
Investments, at estimated fair value:		
Real estate	11,876	(2,718)
Private equity and venture capital funds	12,602	27,022
	$ (261,974)	$ 326,541

6) Fair Value Measurement

The Plan's investments are measured and categorized according to fair value hierarchy guidelines established by generally accepted accounting principles.

The definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

These guidelines recognize a three-tiered fair value hierarchy, as follows:

- *Level 1:* Quoted prices for identical investments in active markets;
- *Level 2:* Observable inputs other than quoted market prices in active market; and,
- *Level 3:* Significant unobservable inputs.

At December 31, 2018, the Plan had the following recurring fair value measurements:

Investments at Fair Value Measurement
As of December 31, 2018

		Fair Value Measurements Using		
	12/31/2018	**Level 1**	**Level 2**	**Level 3**
Investments by Fair Value Level				
Cash and Short Term Investment:				
Short-Term Investment Fund	$102,781	$102,781		
Total Cash and Short Term Investment	$102,781	$102,781		
Fixed Income:				
Domestic Asset-Backed and Mortgage-Backed	$73,347		$73,347	
US Government and Agency Obligations	271,958		271,958	
Domestic Corporate and Taxable Municipal Bonds	543,401		543,401	
	-			
Total Fixed Income	$888,706		$888,706	$0
Equity:				
Domestic Common and Preferred Stock	$840,247	$838,861		$1,386
International Common and Preferred Stock	461,302	461,066	54	182
Total Equity	$1,301,549	$1,299,927	$54	$1,568
Directly-Owned Real Estate	$236,687			$236,687
Total Investments by Fair Value Level	$2,529,723	$1,402,708	$888,760	$238,255
Investments Measured at Net Asset Value				
Collective Trust	$481,094			
Alternative Investments:				
Private Equity	$245,809			
Private Debt	22,927			
Total Alternative Investments	$268,736			
Total Investments Measured at Net Asset Value	$749,831			

7) Securities Lending

During the year, Northern Trust lent, on behalf of the Plan, securities held by Northern Trust as Plan custodian and received cash, United States government securities, agency securities, and irrevocable bank letters of credit as collateral. Northern Trust did not have the ability to pledge or sell collateral securities absent a borrower default. Northern Trust's Core USA Collateral Section establishes requirements for participation, collateralization levels, cash and non-cash collateral guidelines, and investment guidelines for the collateral received from borrowers. Borrowers were required to put up collateral for each loan equal to: (i) in the case of loaned securities, the collateral for which is all denominated in the same currency as the loaned securities, 102% of the fair market value of the loaned securities plus any accrued but unpaid distributions thereon, and (ii) in the case of loaned securities denominated in a different currency from the loaned securities, 105% of the fair market value of the loaned securities plus any accrued but unpaid distributions thereon. Additionally, the guidelines set maturity/liquidity requirements for the collateral received from borrowers. The following table shows for open loans at December 31, 2018 and 2017, the type of collateral held, the fair value of the securities on loan, and the fair value of the collateral held ($ in thousands).

	12/31/2018			12/31/2017		
Collateral Type	Fair Value	Collateral Market Value	Collateral Percentage	Fair Value	Collateral Market Value	Collateral Percentage
Cash	$264,410	$270,118	103%	$ 281,143	$ 288,565	103%

The following represents the balances relating to the securities lending transactions as of December 31, 2018 and 2017 ($ in thousands):

	12/31/2018			12/31/2017		
Securities Lent	Underlying Securities	Securities Collateral Value	Cash Collateral Investment Value	Underlying Securities	Securities Collateral Value	Cash Collateral Investment Value
Lent for cash collateral:						
Domestic equities	$119,521	$ -	$121,813	$127,383	$ -	$130,814
Domestic corporate fixed income	80,135	-	81,783	88,621	-	90,933
Global corporate fixed income	2,476	-	2,598	-	-	-
Global government fixed income	6,062	-	6,396	-	-	-
International equities	8,408	-	8,848	9,350	-	9,828
Global Agencies	199	-	203	-	-	-
US Agencies	497	-	505	724	-	740
US government fixed	47,112	-	47,971	55,065	-	56,250
Subtotal	$ 264,410	$ -	$ 270,118	$ 281,143	$ -	$ 288,565

Disclosure of securities lending income is shown gross with the associated reductions for investment expenses on the Statements of Changes in Fiduciary Net Position, and the cash collateral and associated securities lending payable is shown on the Statements of Fiduciary Net Position for December 31, 2018 and 2017. The net income from securities lending in 2018 was $1.4 million compared to $1.5 million in 2017.

8) Federal Income Tax Status

The Internal Revenue Service issued a determination letter dated May 24, 2016, stating that the Plan was designed in accordance with applicable Internal Revenue Code requirements as of that date. The Plan administrator believes that the Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code. Therefore, the Plan was qualified and the related trust was tax-exempt as of the financial statement dates.

9) Capital Assets

Capital assets activity for the year ended December 31, 2018, was as follows:

	Balance 12/31/2017	Increases	Decreases	Balance 12/31/2018
Capital assets not being depreciated:				
Construction in progress	$ -	$ 3,186	$ -	$ 3,186
Capital assets being depreciated:				
Furniture and fixtures	-	18	-	18
Less: Accumulated depreciation for:				
Furniture and fixtures	-	(1)	-	(1)
Total capital assets being depreciated, net	-	17	-	17
Total capital assets	$ -	$ 3,203	$ -	$ 3,203

10) Schedule of Net Pension Liability

a) The components of the net pension liability of the City at December 31, 2018 and 2017 respectively were as follows:

Description	2018	2017
Total Pension Liability	$ 5,547,964	$ 4,377,844
Plan Fiduciary Net Position	3,2282,313	3,612,260
Net Pension Liability	2,265,651	765,584
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	59.16%	82.51%

b) **Actuarial Methods and Assumptions**:

Valuation date	December 31, 2017 for most recent actuarially determined contribution (ADEC) shown on Schedule of Contributions
Actuarial cost method	Entry Age Normal
Asset valuation method	5-year smoothed market
Amortization method	The ADEC is initially based on a 30-year open amortization period. As specified in the Plan's governing documents, the rate may not change from year to year if the calculated rate is less than 300 basis points different from the current rate.
Remaining Amortization Period	Not determined, see description of amortization method
Investment rate of return	7.75%
Salary increases	3.25% to 6.25%, including inflation
Inflation	2.75% per year
Retirement Age	Experienced-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2014 valuation pursuant to an experience study of the 5-year period December 31, 2014.
Mortality	For Actives: Males – RP2000 Employee Mortality Table for male employees, set forward 4 years. Females – RP2000 Employee Mortality Table for female employees, set back 5 years. For Healthy Retirees: Males – RP2000 Combined with Blue Collar Adjustment for male annuitants, with a 109% multiplier and fully generational morality using improvement scale BB. Females – RP 2000 Combined with Blue Collar Adjustment for female annuitants, with a 103% multiplier and fully generational mortality using improvement scale BB. For Disabled Lives: RP 2000 Disabled Mortality Table for male annuitants, set forward one year.

c) Other Information

Notes: There were no benefit changes during the year.
The assumptions described above were for the most recent ADEC shown in the schedule of contributions. The assumptions used in determining the Net Pension Liability as of December 31, 2018 were those used in the actuarial valuation as of December 31, 2018. Please see the actuarial valuation report for a complete description of those assumptions.

The long term rate of return on pension plan investments was estimated using a building block methodology in which best-estimate ranges of expected future real rates of return 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 return rates by the target asset allocation percentage and by adding expected inflation. The following table shows the best estimates of arithmetic real rates of return for each of the Plan's asset classes.

Asset Class	Long-Term Expected Real Rate of Return
Domestic Equity	6.25%
International Equity	6.45
Global Equity	6.45
Low Volatility Global Equity	6.45
Private Equity	8.75
REITS	5.40
Real Assets	5.65
High Yield Fixed Income	4.95
MLPs	9.60
Credit Opportunities	5.75

Discount rate - A single discount rate of 5.98% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.75% and the municipal bond rate of 3.71%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions and employer contributions will be made at the projected future contribution rates assuming that the Plan annually earns 7.75% on its market value of assets and that the number of active members remains constant in the future. Based on these assumptions and the Plan's funding policy, the last year in the single discount rate projection period for which projected benefit payments were fully funded was 2048, and the resulting single discount rate is 5.98%.

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

Sensitivity of the Net Pension Liability
To the Single Discount Rate Assumption
($000)

1% Decrease	Current Single Discount Rate	1% Increase
4.98%	5.98%	6.98%
$3,006,846	$2,265,651	$1,653,805

REQUIRED SUPPLEMENTARY INFORMATION

(Unaudited)

Schedule of Changes in Net Pension Liability and Related Ratios
($ in thousands)

FY ending December 31,	2018	2017	2016	2015	2014
Total Pension Liability					
Service Cost	$84,843	$81,178	$133,457	$78,020	$62,065
Interest on the Total Pension Liability	332,011	325,620	305,826	313,847	290,948
Difference between Expected and Actual Experience	4,793	(59,066)	(38,327)	(26,829)	(21,967)
Assumption Changes	1,020,969		(1,227,079)	1,238,431	292,137
Benefit Payments	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(8,515)	(8,156)	(5,864)	(4,854)	(4,629)
Net Change in Total Pension Liability	**1,170,121**	**86,042**	**(1,075,762)**	**1,363,509**	**392,940**
Total Pension Liability - Beginning	4,377,844	4,291,802	5,367,564	4,004,055	3,611,115
Total Pension Liability – Ending (a)	**5,547,964**	**4,377,844**	**4,291,802**	**5,367,564**	**4,004,055**
Plan Fiduciary Net Position					
Employer Contributions	60,924	58,966	56,130	50,721	45,833
Employee Contributions	56,772	55,175	53,436	50,742	46,536
Pension Plan Net Investment Income	(167,783)	413,5110	294,918	(53,344)	207,992
Benefit Payments	(263,981)	(253,534)	(243,775)	(235,106)	(225,614)
Refunds	(8,515)	(8,156)	(5,864)	(4,598)	(4,629)
Pension Plan Administrative Expense	(7,485)	(5,951)	(5,343)	(4,598)	(4,150)
Other	121	207	333	162	157
Net Change in Plan Fiduciary Position	**(329,947)**	**260,217**	**149,835**	**(196,277)**	**66,125**
Plan Fiduciary Net Position - Beginning	3,612,260	3,352,043	3,202,208	3,398,485	3,332,360
Plan Fiduciary Net Position – Ending (b)	**3,282,313**	**3,612,260**	**3,352,043**	**3,202,208**	**3,398,485**
Net Pension Liability – Ending (a)-(b)	**$2,265,651**	**$765,584**	**$939,759**	**$2,165,356**	**$605,570**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	59.16%	82.51%	78.10%	59.66%	84.68%
Covered Employee Payroll	423,723	$410,913	$402,077	$383,669	$363,109
Net Pension Liability as a Percentage of Covered Employee Payroll	534.70%	186.31%	233.73%	564.38%	168.95%

Notes to Schedule:
The covered employee payroll is the sum of the active members' pay for valuation purposes as of the measurement date. An active member's valuation pay is the greater of their actual pay for the just completed calendar year or their current annual rate of pay.

SCHEDULE OF MONEY-WEIGHTED RATES OF RETURN

	2018	2017	2016	2015	2014
Rate of Return	**-4.99%**	**13.08%**	**8.88%**	**-1.92%**	**6.52%**

Note to schedule:

This schedule is intended to show information for ten years. Additional years' will be displayed as it becomes available**.**

Schedule of the Net Pension Liability (Historical)
Last 10 Fiscal Years
($ in thousands)

FY 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	$4,004,055	$3,398,485	$605,570	84.68%	$353,650	171.23%
2015	5,367,564	3,202,208	2,165,356	59.66%	383,669	564.38%
2016	4,291,802	3,352,043	939,759	78.10%	402,077	233.73%
2017	4,377,844	3,612,260	765,584	82.51%	410,913	186.31%
2018	5,547,964	3,282,313	2,265,651	59.16%	423,083	535.51%

Notes to Schedule:
The covered employee payroll is the sum of the active members' pay for valuation purposes as of the measurement date. An active member's valuation pay is the greater of their actual pay for the just completed calendar year or their current annual rate of pay.

Schedule of Contributions
Last 10 Fiscal Years
($ in thousands)

FY Ending December 31,	Actuarially Determined Contribution[1,3]	Actual Contributions[2,3]	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2009	20,148	25,232	(5,084)	373,807	6.75%
2010	33,952	27,323	6,629	336,490	8.12%
2011	33,612	27,302	6,310	312,380	8.74%
2012	41,570	30,363	11,207	319,274	9.51%
2013	56,394	37,823	18,571	340,748	11.05%
2014	61,747	45,833	15,914	353,650	12.62%
2015	64,648	50,721	13,927	383,669	13.22%
2016	84,316	56,130	28,186	402,077	13.96%
2017	86,785	58,966	27,819	410,913	14.35%
2018	90,328	60,924	29,404	423,083	14.40%

Notes to Schedule:

1. The actuarially determined contribution (ADEC) shown is the employer contribution based on a 30-year open amortization period prior to fiscal year 2006. Beginning in fiscal year 2006 the Current Adjusted Total Obligation Rate (CATOR), as specified in City Ordinance No. 25695, reduced by the member contribution rate and the debt service on the pension obligation bonds is shown.

2. Since the City's fiscal year is October 1 to September 30 and the Plan's fiscal year is the calendar year, the contribution amounts shown above are a blend of the City's two fiscal year rates that occur during the calendar year.