FIREMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
(A FIDUCIARY FUND OF THE CITY OF CHICAGO, ILLINOIS)

FINANCIAL STATEMENTS

DECEMBER 31, 2018 AND 2017

FIREMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

FINANCIAL STATEMENTS WITH SUPPLEMENTARY INFORMATION

DECEMBER 31, 2018 AND 2017

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LEGACY
PROFESSIONALS LLP
CERTIFIED PUBLIC ACCOUNTANTS

REPORT OF INDEPENDENT AUDITORS

To the Board of Trustees of
Firemen's Annuity and Benefit
Fund of Chicago

Report on the Financial Statements

We have audited the accompanying financial statements of Firemen's Annuity and Benefit Fund of Chicago (the Plan), a fiduciary fund of the City of Chicago, Illinois, which comprise the statements of pension plan fiduciary net position as of December 31, 2018 and 2017, and the related statements of changes in pension plan fiduciary net position for the years then ended, and the related notes to the financial statements, which collectively comprise the Plan's basic financial statements.

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 audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit includes performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the 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 examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. 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.

4 Westbrook Corporate Center | Suite 700 | Westchester, IL 60154 | 312-368-0500 | 312-368-0746 Fax | www.legacycpas.com

Opinion

In our opinion, the financial statements referred to in the first paragraph present fairly, in all material respects, the plan net position of Firemen's Annuity and Benefit Fund of Chicago as of December 31, 2018 and 2017, and the changes in plan net position for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis on pages 4 through 4d and the required supplementary information on pages 31 through 33 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 considers 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 inquires 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.

Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the Plan's basic financial statements as a whole. The accompanying supplementary information on pages 34 through 36 is presented for purposes of additional analysis and is not a required part of the financial statements. Such 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 audits 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 information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Other Matters (continued)

Previously Audited Information

We also have previously audited the basic financial statements for the years ended December 31, 2016, 2015, 2014, and 2013 (which are not presented herein), and we expressed unmodified opinions on those financial statements. In our opinion, the information on page 36 is fairly stated in all material respects in relation to the basic financial statements from which it has been derived.

Legacy Professionals LLP

Westchester, Illinois

June 19, 2019

This section presents Management's Discussion and Analysis of the financial position and performance of the Firemen's Annuity and Benefit Fund of Chicago (the Plan) as of and for the year ended December 31, 2018 and 2017. This discussion is presented as an overview of the financial activities of the Plan and should be read in conjunction with the Plan's financial statements.

Overview of the Basic Financial Statements

The following discussion and analysis is intended to serve as an introduction to the Plan's basic financial statements. The financial statements are prepared on an economic sources focus and accrual basis of accounting in accordance with Governmental Accounting Standards Board (GASB) pronouncements. The basic components of the financial package are described below:

Statements of Pension Plan Fiduciary Net Position provide a snapshot of account balances and net position held in trust for future benefit payments and any liabilities as of the Plan's year end. Over time, increases and decreases in net position may serve as a useful indicator of whether the financial position of the Plan is improving or deteriorating.

Statements of Changes in Pension Plan Fiduciary Net show the revenues (additions) and expenses (deductions) during the year, where additions less deductions equal net increase (decrease) in net position. The net increase (decrease) in net position reports the change in net position as reported in the Statements of Changes in Pension Plan Fiduciary Net Position of the prior year and the current year.

Notes to the Financial Statements provides additional information that is essential to achieving a better understanding of the data provided in the basic financial statements.

Required Supplementary Information provides schedules and related notes concerning actuarial information, funding progress, employer contributions, and investment returns.

Supplementary Information includes schedules of administrative expenses, investment expenses, additions by source, and deductions by type.

Financial Highlights

Plan Net Position

The condensed Statements of Pension Plan Fiduciary Net Position reflect the resources available to pay benefits to members. A summary of the Statement of Pension Plan Fiduciary Net Position is as follows:

Plan Net Position
As of December 31,

	2018	2017	2016	Current Year Increase/(Decrease) in Dollars	Current Year Increase/(Decrease) in Percent
Assets:					
Receivables	$ 255,802,652	$ 232,724,014	$ 208,693,164	$ 23,078,638	9.9 %
Prepaid expenses	173,473	165,861	213,718	7,612	4.6 %
Investments, at fair value	787,924,273	901,201,369	814,391,075	(113,277,096)	-12.6 %
Collateral held for securities on loan	91,416,894	111,709,566	123,059,048	(20,292,672)	-18.2 %
Total assets	1,135,317,292	1,245,800,810	1,146,357,005	(110,483,518)	-8.9 %
Liabilities:					
Payables	8,110,059	7,937,930	4,284,164	172,129	2.2 %
Securities lending collateral	91,416,894	111,709,566	123,059,048	(20,292,672)	-18.2 %
Total liabilities	99,526,953	119,647,496	127,343,212	(20,120,543)	-16.8 %
Plan net position	$ 1,035,790,339	$ 1,126,153,314	$ 1,019,013,793	$ (90,362,975)	-8.0 %

Plan net position decreased by $90,362,975 or 8.0% from $1,126,153,314 at December 31, 2017 to $1,035,790,339 at December 31, 2018. Comparatively, plan net position increased by $107,139,521 or 10.5% from $1,019,013,793 at December 31, 2016 to $1,126,153,314 at December 31, 2017.

The decrease in plan net position for the year ended December 31, 2018 was primarily due to a significant decrease in investment returns from the previous year.

The increase in plan net position for the year ended December 31, 2017 was primarily due to strong investment returns and a significant increase in employer contributions from the previous year.

Changes in Plan Net Position

The Statements of Changes in Pension Plan Fiduciary Net Position reflects the changes in the resources available to pay benefits to members. A summary of the Statement of Changes in Pension Plan Fiduciary Net Position is as follows:

Changes in Plan Net Position
For the Years Ended December 31,

	2018	2017	2016	Current Year Increase/(Decrease) in Dollars	Percent
Additions:					
Employer contributions	$ 249,684,038	$ 228,452,611	$ 156,158,391	$ 21,231,427	9.3 %
Plan member contributions	45,894,781	47,364,276	48,959,929	(1,469,495)	-3.1 %
Net investment income (loss)	(58,646,763)	139,910,123	54,708,936	(198,556,886)	-141.9 %
Net securities lending income	598,237	597,279	653,249	958	0.2 %
Other	54,146	85,333	5,525,415	(31,187)	-36.5 %
Total additions	237,584,439	416,409,622	266,005,920	(178,825,183)	-42.9 %
Deductions:					
Benefits	320,595,085	302,518,486	283,085,767	18,076,599	6.0 %
Administrative expenses	3,285,110	3,171,986	3,216,823	113,124	3.6 %
Annuitant health care	-	-	2,056,995	-	N/A
Litigation settlement	-	-	60,385	-	N/A
Refunds of contributions	4,067,219	3,579,629	3,673,250	487,590	13.6 %
Total deductions	327,947,414	309,270,101	292,093,220	18,677,313	6.0 %
Net increase (decrease) in plan net position	$ (90,362,975)	$ 107,139,521	$ (26,087,300)	$ (197,502,496)	-184.3 %

Additions to Plan Net Position

Total additions were $237,584,439 in 2018, $416,409,622 in 2017 and $266,005,920 in 2016.

Employer contributions increased by $21,231,427 or 9.3% from $228,452,611 for the year ended December 31, 2017 to $249,684,038 for the year ended December 31, 2018. Comparatively, employer contributions increased by $72,294,220 or 46.3% from $156,158,391 for the year ended December 31, 2016 to $228,452,611 for the year ended December 31, 2017.

During the year ended December 31, 2018, the Plan recognized an increase in employer contributions due to both an increase in the required funding as required by the Illinois Compiled Statutes and the intercept of state grant payments to make up for employer contribution shortfalls.

During the year ended December 31, 2017, the Plan recognized an increase in employer contributions due to Public Act 99-0506 which changed the employer funding policies from a multiplier of plan member contributions to amounts as specifically stated in the Illinois Compiled Statutes for Plan years 2015 through 2019.

Additions to Plan Net Position (continued)

Plan member contributions decreased by $1,469,495 or 3.1% from $47,364,276 for the year ended December 31, 2017 to $45,894,781 for the year ended December 31, 2018. Comparatively, plan member contributions decreased by $1,595,653 or 3.3% from $48,959,929 for the year ended December 31, 2016 to $47,364,276 for the year ended December 31, 2017. Plan member contributions for the year ended December 31, 2018 decreased due to reduced staffing levels in the Chicago Fire Department. Active participants were 4,487, 4,613 and 4,760 at the years ended December 31, 2018, 2017 and 2016, respectively.

Net investment income (loss) decreased by $198,556,886 or 141.9% from a net investment income of $139,910,123 for the year ended December 31, 2017 to a net investment loss ($58,646,763) for the year ended December 31, 2018. Comparatively, net investment income increased by $85,201,187 or 155.7% from $54,708,936 for the year ended December 31, 2016 to $139,910,123 for the year ended December 31, 2017. Investment earnings fluctuate primarily from the overall performance of the financial markets from year to year.

The Plan’s realized return on investments for the year ended December 31, 2018 was -6.2% versus 18.3% for the year ended December 31, 2017 and 8.0% for the year ended December 31, 2016.

Portfolio Rate of Return
For the Years Ended December 31,

	2018	2017	2016
Domestic Equities	-5.8%	21.5%	13.1%
Benchmark	-4.6%	21.8%	12.0%
International Equities	-15.0%	28.8%	4.0%
Benchmark	-14.6%	24.8%	3.3%
Fixed income	-0.4%	6.1%	4.8%
Benchmark	0.0%	3.5%	2.7%
Total Plan	-6.2%	18.3%	8.0%

Deductions to Plan Net Position

Total deductions were $327,947,414 in 2018, $309,270,101 in 2017, and $292,093,220 in 2016.

Benefits increased by $18,076,599 or 6.0% from $302,518,486 for the year ended December 31, 2017 to $320,595,085 for the year ended December 31, 2018. Comparatively, benefits increased by $19,432,719 or 6.9% from $283,085,767 for the year ended December 31, 2016 to $302,518,486 for the year ended December 31, 2017. In recent times, benefits have increased yearly due to several factors; a contractual free healthcare incentive which has added annuitants above the expected number, cost of living increases, and new annuitants coming on the pension roll at higher rates than the annuitants that are being removed from the pension roll.

Annuitant health care decreased from $2,056,995 for the year ended December 31, 2016 to $0 for subsequent years due to Public Act 98-0043, which terminated the retiree healthcare subsidy paid by the Plan as of December 31, 2016.

Administrative expenses, litigation settlements and refunds of contributions have all remained at relatively constant amounts over the last three years.

Actuarial Information

The Plan's funding for pension benefits as of December 31, 2018, 2017 and 2016 is as follows:

Funding for Pension Benefits
For the Years Ended December 31,

	2018	2017	2016
Total pension liability	$ 6,252,360,385	$ 5,746,150,005	$ 5,149,258,197
Plan fiduciary net position	1,035,790,339	1,126,153,314	1,019,013,793
City's net pension liability	$ 5,216,570,046	$ 4,619,996,691	$ 4,130,244,404
Plan fiduciary net position as a percentage of the total pension liability	16.57%	19.60%	19.79%

Contact Information

This financial report is designed to provide plan participants, retirees, beneficiaries, the employer and all other interested users with a complete, detailed, easy to understand financial portrait of the Plan at December 31, 2018. Comments, questions or concerns regarding this report or requests for additional information should be addressed to:

Steve Swanson, Executive Director
Firemen's Annuity and Benefit Fund of Chicago
20 S. Clark Street, Suite 1400
Chicago, IL 60603

Firemen's Annuity and Benefit Fund of Chicago

Statements of Pension Plan Fiduciary Net Position

December 31, 2018 and 2017

	2018	2017
Assets		
Receivables		
Employer contributions - net	$ 246,112,696	$ 222,194,272
Investment income	2,624,486	2,559,800
Other	2,574,616	3,090,610
Securities lending	57,196	88,334
Unsettled trades	4,433,658	4,790,998
Total receivables	255,802,652	232,724,014
Prepaid expenses	173,473	165,861
Investments		
Cash deposits and short-term investments	24,454,811	46,195,477
Corporate bonds	109,211,831	121,812,826
Equities	494,106,560	617,148,695
Pooled funds	65,409,809	31,170,538
Private equity and venture capital	13,303,807	16,485,995
U.S. and Foreign Government obligations	81,437,455	68,387,838
Total investments	787,924,273	901,201,369
Collateral held for securities on loan	91,416,894	111,709,566
Total assets	1,135,317,292	1,245,800,810
Liabilities		
Accounts payable and accrued expenses	88,401	1,342,608
Participant accounts	580,944	519,101
Securities lending collateral	91,416,894	111,709,566
Securities lending	14,275	22,063
Unsettled trades	7,426,439	6,054,158
Total liabilities	99,526,953	119,647,496
Net position restricted for pensions	$ 1,035,790,339	$ 1,126,153,314

See accompanying notes to financial statements.

FIREMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

STATEMENTS OF CHANGES IN PENSION PLAN FIDUCIARY NET POSITION

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
ADDITIONS		
Contributions		
Employer contributions		
Statutory	$ 248,000,650	$ 223,432,162
Exempt rank funding	1,683,388	5,020,449
Total employer contributions	249,684,038	228,452,611
Plan member		
Annuities	45,756,912	47,222,223
Death benefits	137,869	142,053
Total plan member contributions	45,894,781	47,364,276
Investment income		
Net appreciation (depreciation) in fair value of investments	(75,968,716)	125,047,682
Interest	10,877,857	8,864,708
Dividends	12,303,951	11,491,614
	(52,786,908)	145,404,004
Less investment expenses	(5,859,855)	(5,493,881)
Net investment income (loss)	(58,646,763)	139,910,123
Securities lending		
Income	2,589,960	1,766,076
Borrower rebates	(1,792,673)	(970,095)
Management fees	(199,050)	(198,702)
Net securities lending income	598,237	597,279
Gift Fund donations	3,580	4,330
Miscellaneous income	2,273	18,549
Tax levy interest	48,293	13,543
Interest on settlement	-	48,911
Total additions	237,584,439	416,409,622

See accompanying notes to financial statements.

Firemen's Annuity and Benefit Fund of Chicago

Statements of Changes in Pension Plan Fiduciary Net Position

Years Ended December 31, 2018 and 2017

	2018	2017
Deductions		
Benefits		
Age and service benefits		
Employees	$ 262,133,711	$ 243,139,971
Spouses	35,552,709	34,672,687
Dependents	961,841	966,833
Total age and service benefits	298,648,261	278,779,491
Disability benefits		
Duty	13,942,327	15,154,696
Occupational	6,628,851	7,172,217
Ordinary	303,239	249,882
Total disability benefits	20,874,417	22,576,795
Gift Fund payments	256,000	378,000
Death benefits	816,407	784,200
Total benefits	320,595,085	302,518,486
Administrative expenses	3,285,110	3,171,986
Refunds of contributions	4,067,219	3,579,629
Total deductions	327,947,414	309,270,101
Net increase (decrease)	(90,362,975)	107,139,521
Net position		
Beginning of year	1,126,153,314	1,019,013,793
End of year	$ 1,035,790,339	$ 1,126,153,314

See accompanying notes to financial statements.

NOTE 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Financial Reporting Entity - Accounting principles generally accepted in the United States of America define a financial reporting entity as consisting of the primary government and its component units for which the primary government is financially accountable. Financial accountability includes appointing a voting majority of a component unit's governing board, the ability of a primary government to impose its will on the component unit, or a potential for a component unit to provide specific financial benefits to or impose specific financial burdens on the primary government. Firemen's Annuity and Benefit Fund of Chicago (the Plan) has determined that no other outside entity meets the above criteria and, therefore, no other entity has been included as a component unit in the Plan's financial statements.

Based on the above criteria, the Plan is considered to be a fiduciary fund of the City of Chicago, Illinois (the City) and is included in the City's financial statements.

Method of Accounting - The financial statements are presented using the accrual basis of accounting. Employer contributions are recognized as income pursuant to legal requirements as specified by the Illinois Compiled Statutes (the Statutes). Plan member contributions are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

Investments - Investments are reported at fair value, which generally represents reported market value as of the last business day of the year. Where less than an entire investment holding is sold, average value is used to determine realized gain or loss.

Capital Assets - The Plan has set a capitalization threshold of $100,000 for all capital asset types. As of December 31, 2018 and 2017, the Plan does not have any capital assets.

Estimates - The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures in the financial statements. Actual results could differ from those estimates.

Subsequent Events - Subsequent events have been evaluated through June 19, 2019, which is the date the financial statements were available to be issued.

NOTE 2. PLAN DESCRIPTION

The Plan was established in 1931 and is governed by legislation contained in the Statutes, particularly 40 ILCS, Act 5, Article 6 (the Article), which specifically and exclusively refers to the Plan. The Plan can be amended only by the Illinois Legislature. The Plan is a single-employer defined benefit pension plan with a defined contribution minimum. The Plan was established for the purpose of providing retirement and disability benefits for employees of the City of Chicago employed under the provisions of the Municipal Personnel Ordinance as fire service and for the dependents of such employees.

The Statutes authorize a Board of Trustees (the Board) of eight members to carry out the provisions of the Article. According to the Article, four members of the Board are ex officio and four are elected by the employee members of the Plan. The four ex officio members are the City Treasurer, the City Clerk, the City Comptroller and the Deputy Fire Commissioner. All members of the Board of Trustees are fiduciaries with respect to the Plan and are statutorily mandated to discharge their duties, as such, solely in the interest of the Plan's participants and beneficiaries.

The Board has the powers and duties required in the Article to collect all contributions due to the Plan, to invest the Plan's reserves, to have an annual audit, to appoint employees, to authorize or suspend payment of any benefit and to have exclusive original jurisdiction in all matters relating to or affecting the Plan. The Board approves its own budget prepared by the Plan's administrative staff. The Board is required annually to submit to the City Council of the City of Chicago a detailed report of the financial affairs and status of the reserves of the Plan. Provisions in other articles of 40 ILCS require the Board to submit its annual audit and actuarial valuation reports to the State of Illinois Department of Insurance, as well as another detailed annual report, the form and content of which are specified by the Department of Insurance.

The Plan provides retirement benefits, as well as, death and disability benefits. Employees who reach compulsory retirement age of 63, except for emergency medical technicians, which is age 65, with at least 10 years of service and less than 20 years of service are entitled to receive an annuity of 30% of average salary for the first ten years of service plus an additional 2% for each year in excess of 10 years with partial City contributions to a maximum of 50%.

At age 50 or more with 10 or more but less than 20 years of service, a Tier 1 employee is entitled to an annuity of the entire sum accumulated for age and service annuity from deductions from salary, plus 1/10 of the sum accumulated from contributions by the City for each completed year of service after the first 10 years. For Tier 2 employees, the annuity is based on an accrual rate of 2.5% reduced by one half of one percent per month for retirement prior to age 55, subject to a maximum of 75%.

NOTE 2. PLAN DESCRIPTION (CONTINUED)

Employees with at least 20 years of service are entitled to receive a minimum formula annuity upon attainment of age 50 for Tier 1 employees and age 55 for Tier 2 employees, of 50% of final average salary plus an additional amount equal to 2.5% of final average salary for each year of service or fraction thereof in excess of 20 years of service. For Tier 1 employees, final average salary is based on the highest average annual salary for any four consecutive years within the last ten years of service immediately preceding the date of retirement. For Tier 2 employees, the final average salary is based on 96 consecutive months within the last 120 months, capped at $106,800 indexed annually at the lesser of 3% and 50% of the Consumer Price Index (CPI-U). This annuity shall not exceed 75% of the final average salary. The monthly annuity is increased by 3% of the original annuity at the first of the month following the later of age 55 or the first anniversary of retirement and by 3% each first day of January thereafter, if born before January 1, 1966. There is no limit on the increases. If born after January 1, 1966, the monthly annuity is increased by 1.5% of the original annuity at the first of the month following the later of age 60 or the first anniversary of retirement and 1.5% on each first day of January thereafter, but not to exceed a total increase of 30%.

Participants should refer to the applicable State Statutes for more complete information.

Any employee of the City employed under the provisions of the Municipal Personnel Ordinance as fire service is covered by the Plan. At December 31, 2018 and 2017, participation in the Plan consisted of the following:

	2018	2017
Retirees and beneficiaries currently receiving benefits	5,022	4,878
Terminated plan participants entitled to but not yet receiving benefits	92	77
Active plan participants	4,487	4,613
Total participants	9,601	9,568

NOTE 3. EMPLOYER'S PENSION LIABILITY

Net Pension Liability

The components of the city's net pension liability of the Plan for the years ended December 31, 2018 and 2017 are as follows:

	2018	2017
Total pension liability	$ 6,252,360,385	$ 5,746,150,005
Plan fiduciary net position	1,035,790,339	1,126,153,314
City's net pension liability	$ 5,216,570,046	$ 4,619,996,691
Plan fiduciary net position as a percentage of the total pension liability	16.57%	19.60%

See the schedule of changes in the city's net pension liability and related ratios in the required supplementary information for additional information related to the funded status of the Plan.

The actuarial assumptions used in the December 31, 2018 and 2017 valuations were based on the results of an actuarial experience study conducted by Gabriel Roeder Smith & Company for the period of January 1, 2012 through December 31, 2016, which was adopted and effective as of March 21, 2018. Based on the December 31, 2018 Economic Assumption Review, the economic actuarial assumptions were adopted and became effective December 31, 2018. Key economic actuarial assumption changes include decreasing the discount rate and investment return assumption from 7.5% to 6.75%, decreasing the wage inflation rate from 3.75% to 3.5%, and decreasing the general inflation rate from 2.5% to 2.25%.

NOTE 3. EMPLOYER'S PENSION LIABILITY (CONTINUED)

Net Pension Liability (continued)

The net pension liabilities were determined by actuarial valuations performed as of December 31, 2018 and 2017 using the following actuarial methods and assumptions:

Actuarial valuation date	December 31, 2018 and 2017
Actuarial cost method	Entry-Age Normal
Asset valuation method	5 year smoothed market
Actuarial assumptions:	
Inflation	2018 - 2.25% per year, 2017 - 2.50% per year
Salary increases	2018 - 3.5% per year, plus additional service based increases 2017 - 3.75% per year, plus additional service based increases
Investment rate of return	2018 - 6.75 per year, 2017 - 7.50% per year
Retirement age	Experience-based table of rates that are specific to the type of eligibility condition last updated pursuant to an experience study of the period January 1, 2012 through December 31, 2016.
Mortality	Scaled RP-2014 Blue Collar Healthy Annuitant Mortality Table, sex distinct, with generational mortality improvement using MP-2017 two-dimensional mortality improvement scales.
Disabled mortality	Scaled RP-2014 Blue Collar Healthy Annuitant Mortality Table, sex distinct, with generational mortality improvement using MP-2017 two-dimensional mortality improvement scales.
Pre-retirement mortality	Scaled RP-2014 Blue Collar Healthy Annuitant Mortality Table, sex distinct, with generational mortality improvement using MP-2017 two-dimensional mortality improvement scales.
Postretirement annuity increases	Tier 1 participants - 1.50% simple interest for 20 years for members born after January 1, 1966, 3.00% simple interest for life for members born before January 1, 1966. Tier 2 participants - the lesser of 3.0% or one half of the increase in the Consumer Price Index.

NOTE 3. EMPLOYER'S PENSION LIABILITY (CONTINUED)

Discount Rate

A discount rate of 6.61% was used to measure the total pension liability at December 31, 2018. The discount rate was based on an expected rate of return on Plan investments of 6.75% and a municipal bond rate of 3.71%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between the statutory contribution rates and the member rate. Based on these assumptions, the Plan's fiduciary net position and future contributions were sufficient to finance the benefit payments only through the year 2072. As a result, the long-term expected rate of return on Plan investments was applied to projected benefit payments through the year 2072, and the municipal bond rate was applied to all benefit payments after that date.

A discount rate of 7.23% was used to measure the total pension liability at December 31, 2017. The discount rate was based on an expected rate of return on Plan investments of 7.50% and a municipal bond rate of 3.31%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between the statutory contribution rates and the member rate. Based on these assumptions, the Plan's fiduciary net position and future contributions were sufficient to finance the benefit payments only through the year 2070. As a result, the long-term expected rate of return on Plan investments was applied to projected benefit payments through the year 2070, and the municipal bond rate was applied to all benefit payments after that date.

The municipal bond rates were from the Federal Reserve statistical release (H.15) and described as Bond Buyer Index, general obligation, 20 years to maturity, mixed quality.

Discount Rate Sensitivity

The following is an analysis of the net pension liability's sensitivity to changes in the discount rate at December 31, 2018 and 2017. The following table presents the net pension liability of the city using the blended discount rate as well as the city's net pension liability calculated using a discount rate 1 percent lower and 1 percent higher than the current discount rate:

	1% Decrease	Current Discount Rate	1% Increase
City's Net Pension Liability -	5.61%	6.61%	7.61%
December 31, 2018	$ 5,982,108,511	$ 5,216,570,046	$ 4,577,347,681

	1% Decrease	Current Discount Rate	1% Increase
City's Net Pension Liability -	6.23%	7.23%	8.23%
December 31, 2017	$ 5,303,879,317	$ 4,619,996,691	$ 4,046,477,380

NOTE 4. SUMMARY OF EMPLOYER FUNDING POLICIES

Covered employees are required to contribute 9.125% of their salary to the Plan. If an employee leaves covered employment without qualifying for an annuity, accumulated contributions are refunded with statutory interest.

The City, for its employer portion, is required by the Statutes to contribute the remaining amounts necessary to finance the requirements of the Plan. Public Act 99-0506, enacted into law on May 30, 2016, specifies the amounts of contributions to be paid by the City as follows:

Plan year ending December 31,	Required Statutory Contribution
2016	$ 208,000,000
2017	$ 227,000,000
2018	$ 235,000,000
2019	$ 245,000,000

Beginning with the Plan year ending December 31, 2020, the City is required to fund the Plan on an actuarial basis sufficient to produce a funding level of 90% by the year ended December 31, 2055.

NOTE 5. RESERVES FOR ACTUARIAL LIABILITIES

The reserves for actuarial liabilities are based on an annual valuation submitted by the Plan's consulting actuary. The annual actuarial valuation establishes the reserves required for various statutory liabilities which arise from pension benefit schedules that are part of the current pension code legislation. The pension code legislation can be amended only by the Illinois Legislature.

The Prior Service Annuity Reserve is a reserve account for the accumulation of City contributions to provide for: a) employee and spouse annuities that are based on service performed before the Plan's effective date of July 1, 1931 and b) any excess in minimum annuity formula requirements over the amounts required for age and service annuities, and for spouse annuities.

The City Contribution Reserve is used to accumulate amounts contributed by the City to provide for annuities based on age and service of each employee and spouse. An individual account is maintained for each employee and spouse until the employee retires, at which time the individual account balances are transferred to the Annuity Payment Reserve.

The Annuity Payment Reserve receives the amounts transferred from the individual accounts in the City Contribution Reserve and the Salary Deduction Reserve when an employee retires and qualifies for an annuity. All age and service annuity payments are charged to this reserve.

Note 5. Reserves for Actuarial Liabilities (continued)

The Salary Deduction Reserve is similarly used to accumulate deductions made from employee salaries for age and service annuities for the employee and spouse. Individual accounts are maintained until the employee retires or withdraws from service before qualifying for an annuity. At retirement, account balances are transferred to the Annuity Payment Reserve. In case an eligible employee elects to take a refund of contributions instead of an annuity, the contribution refund is charged to this reserve.

The Death Benefit Reserve accumulates contributions from employees and the City for ordinary death benefits. All ordinary death benefits paid are charged to this reserve.

The Ordinary Disability Reserve accumulates contributions from employees and the City for ordinary disability benefits. All ordinary disability benefits paid are charged to this reserve.

The Supplementary Payment Reserve accumulates amounts to provide automatic annual postretirement increases to employee annuitants who retired before September 1, 1959 and amounts in excess of the original annuity grant due to increases in the minimum annuity.

The Gift Reserve accumulates donations to be used to provide an extra benefit to widowed spouse annuitants and orphaned child annuitants.

The Reserve (deficit) represents the difference between the actuarially determined present value of all future pension payments and the value of the Plan's present assets plus the present value of future contributions. A deficit indicates that additional assets will be needed to provide for future benefits, while a surplus indicates that present assets and future contributions exceed the expected requirements for future pension payments.

Net position restricted for pensions as of December 31, 2018 and 2017 were comprised of the following reserve surplus (deficit) balances:

	2018	2017
Prior Service Annuity Reserve	$ 2,681,871,668	$ 2,525,779,195
City Contribution Reserve	812,335,456	829,966,098
Annuity Payment Reserve	1,115,776,575	1,020,357,166
Salary Deduction Reserve	669,428,431	684,030,774
Death Benefit Reserve (deficit)	(20,090,677)	(20,022,931)
Ordinary Disability Reserve	618,700	575,231
Supplementary Payment Reserve (deficit)	(192,946)	(132,298)
Gift Reserve	12,584,506	12,575,998
Reserve (deficit)	(4,236,541,374)	(3,926,975,919)
Total fiduciary net position for pension benefits	$ 1,035,790,339	$ 1,126,153,314

NOTE 6. INVESTMENTS

Investment Policies

The Board of Trustees is responsible for establishing reasonable and consistent investment objectives, policies and guidelines governing the investment of Plan assets in accordance with the Statutes. The Plan is authorized to invest in bonds, notes, certificates of indebtedness, mortgage notes, real estate, stocks, shares, debentures, or other obligations or securities as set forth in the "prudent person" provisions of the Statutes. All of the Plan's financial instruments are consistent with the permissible investments outlined in the Statutes and any index-linked financial instruments are limited to those indices that replicate the permissible investments outlined in the Statutes. During the years ended December 31, 2018 and 2017, there were no significant changes to the investment policies.

Long-Term Expected Rate of Return

The Plan's investment policies in accordance with the Statutes establish the following target allocation across asset classes:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Equity	60.00%	7.19%
Fixed income	20.00%	3.75%
Real estate	8.00%	6.25%
Other investments	12.00%	5.82%
Total	100.00%	

The long-term expected real rate of return on the Plan's investments was determined using an asset allocation study conducted by the Plan's investment management consultant in which best estimate ranges of expected future real rates of return (net of investment expense and inflation) were developed for each major asset class. These ranges were 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 or arithmetic real rates of return for each major asset class included in the Plan's target asset allocation are listed in the preceding table.

Annual Money-Weighted Rate of Return

The annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was (6.6%) and 17.9% for the years ended December 31, 2018 and 2017, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. U.S. Government obligations or obligations explicitly guaranteed by the U.S. Government are not considered to have credit risk and do not require disclosure of credit quality. The Plan establishes minimum investment rating guidelines for each investment manager based on their area of concentration and level of allowable risk. The following table presents a summarization at December 31, 2018 and 2017 of the lowest credit quality rating of investments in corporate bonds, foreign government obligations, short-term investments, and fixed income mutual funds as valued by Moody's Investors Service and/or Standard & Poor's, as applicable.

NOTE 6. INVESTMENTS (CONTINUED)

Credit Risk (continued)

Type of Investment	Rating	2018	2017
Cash deposits and short-term investments	Not Rated	$ 24,454,811	$ 46,195,477
Corporate bonds	Aaa/AAA	$ 5,249,815	$ 7,440,119
	Aa/AA	5,762,702	3,205,088
	A/A	16,599,598	16,218,585
	Baa/BBB	43,035,071	43,162,492
	Ba/BB	12,333,842	18,735,419
	B/B	2,886,700	6,650,539
	Caa/CCC	1,466,862	1,980,849
	Ca/CC	394,454	454,909
	C/C	-	305,655
	D/D	-	318,005
	Not Rated	13,260,993	12,929,229
	U.S. Government Guaranteed	8,221,794	10,411,937
		$ 109,211,831	$ 121,812,826
Pooled funds - fixed income	Aa/AA	$ 18,901,115	$ 18,149,195
	A/A	3,730	665,837
	B/B	3,457,754	6,644,256
		$ 22,362,599	$ 25,459,288
U.S. and Foreign Government obligations	Aaa/AAA	$ 3,327,576	$ 17,297,624
	Aa/AA	8,738,137	8,954,062
	A/A	1,894,104	2,668,759
	Baa/BBB	1,797,328	1,122,914
	Ba/BB	957,698	2,336,740
	B/B	585,749	957,113
	Not Rated	292,932	5,730,373
	U.S. Government Guaranteed	63,843,931	29,320,253
		$ 81,437,455	$ 68,387,838

NOTE 6. INVESTMENTS (CONTINUED)

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Investments held for longer periods are subject to increased risk of adverse interest rate changes. Investments are diversified to minimize the risk of loss resulting from over-concentration of assets in a specific maturity period, a single issuer, or an individual class of securities. The Plan requires investment managers to display an overall level of interest rate risk that is consistent with the benchmark specified by the Plan. The following table presents a summarization of debt investments at December 31, 2018 and 2017 using the segmented time distribution method:

Type of Investment	Maturity	2018	2017
Cash deposits and short-term investments	Less than 1 year	$ 24,454,811	$ 46,195,477
Corporate bonds	Less than 1 year	$ 3,516,249	$ 2,957,306
	1-5 years	31,720,403	24,361,722
	5-10 years	39,461,995	50,748,327
	Over 10 years	34,513,184	43,745,471
		$ 109,211,831	$ 121,812,826
Pooled funds - fixed income	Less than 1 year	$ 1,426,239	$ 4,543,866
	1-5 years	20,936,360	20,915,422
		$ 22,362,599	$ 25,459,288
U.S. and Foreign Government obligations	Less than 1 year	$ 4,858,715	$ 3,108,685
	1-5 years	29,101,391	19,664,102
	5-10 years	11,407,669	13,858,852
	Over 10 years	36,069,680	31,756,199
		$ 81,437,455	$ 68,387,838

NOTE 6. 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 a deposit. The Plan requires investment managers to invest in at least ten countries if investing in foreign obligations and/or equities. The Plan's exposure to foreign currency risk at December 31, 2018 and 2017 is as follows:

Type of Investment	Fair Value (USD) 2018	Fair Value (USD) 2017
Corporate bonds:		
European euro	$ -	$ 79,131
Mexican peso	153,037	787,148
U.S. dollar	109,058,794	120,946,547
	$ 109,211,831	$ 121,812,826
U.S. and Foreign Government obligations:		
Argentine peso	$ 363,678	$ 520,661
Brazilian real	861,698	744,748
Chinese yuan	141,900	362,568
Japanese yen	336,354	333,589
Malaysian ringgit	-	736,038
Mexican peso	1,148,598	1,909,301
Russian ruble	475,137	677,902
South African rand	716,588	842,834
U.S. dollar	77,393,502	62,260,197
	$ 81,437,455	$ 68,387,838

NOTE 6. INVESTMENTS (CONTINUED)

Foreign Currency Risk (continued)

Type of Investment	Fair Value (USD) 2018	Fair Value (USD) 2017
Equities:		
Australian dollar	$ 4,815,436	$ 4,402,116
Brazilian real	6,066,860	6,697,821
British pound	29,490,875	33,299,495
Canadian dollar	5,720,634	6,745,319
Chilean peso	485,384	550,258
Colombian peso	202,199	216,977
Danish krone	1,735,313	2,526,384
Egyptian pound	332,158	355,698
European euro	42,540,920	50,541,477
Hong Kong dollar	19,074,486	21,389,351
Hungarian forint	545,893	767,989
Indian rupee	4,680,468	6,744,901
Indonesian rupiah	2,487,992	2,322,752
Israeli shekel	1,301,648	1,213,282
Japanese yen	29,792,577	38,098,403
Malaysian ringgit	648,549	964,924
Mexican peso	2,927,668	2,717,515
New Zealand dollar	-	176,406
Norwegian krone	1,615,265	1,905,721
Pakistan rupee	60,634	80,898
Philippines peso	728,141	680,280
Polish zloty	157,317	204,948
Qatari riyal	179,770	-
Singapore dollar	710,410	1,351,747
South African rand	2,305,830	3,924,147
South Korean won	9,723,873	12,770,503
Swedish krona	3,206,000	4,259,235
Swiss franc	7,700,110	8,339,352
Taiwan dollar	6,930,336	6,169,097
Thailand baht	1,247,059	1,214,626
Turkish lira	436,032	515,622
United Arab Emirates dirham	353,667	-
U.S. dollar	305,903,056	396,001,451
	$ 494,106,560	$ 617,148,695

NOTE 6. INVESTMENTS (CONTINUED)

Additional Investment Disclosures

During 2018 and 2017, net realized gain on investments sold, reflecting the difference between the proceeds received and cost value of securities sold, was $57,714,961 and $46,678,187 respectively. These amounts are included in the net appreciation (depreciation) in fair value of investments as reported on the statements of changes in pension plan fiduciary net position. The calculation of realized gains and losses is independent of the calculation of net appreciation (depreciation) in the fair value of plan investments. Investments purchased in a previous year and sold in the current year result in their realized gains and losses being reported in the current year and their net appreciation in plan assets being reported in both the current year and the previous year(s).

The Plan does not isolate that portion of net appreciation (depreciation) in fair value of investments resulting from changes in the foreign exchange rate on investments from fluctuations arising from changes in the market prices of the securities. Such fluctuations are included with net appreciation in fair value of investments. Net realized gains and (losses) on foreign currency transactions represent net exchange gains or losses on closed foreign currency contracts, disposition of foreign currencies, and the difference between the amount of investment income and foreign withholding taxes recorded on the Plan's books and the U.S. dollar equivalent amounts actually received or paid. Net unrealized gains and (losses) on foreign currency transactions arise from changes in the value of open foreign currency contracts and assets and liabilities other than investments at the year end, resulting from changes in the exchange rate.

NOTE 7. FAIR VALUE MEASUREMENTS

GASB Statement No. 72, *Fair Value Measurement and Application*, established a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy 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). The three levels of the fair value hierarchy are described below:

Basis of Fair Value Measurement

Level 1	Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities
Level 2	Quoted prices in markets that are not considered to be active or financial instruments for which all significant inputs are observable, either directly or indirectly
Level 3	Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable

NOTE 7. FAIR VALUE MEASUREMENTS (CONTINUED)

The Plan categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The Plan has the following recurring fair value measurements as of December 31, 2018 and 2017:

		Fair Value Measurements at 12/31/2018 Using		
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level				
Cash deposits and short-term investments	$ 11,521,302	$ 1,524,852	$ 9,996,450	$ -
Corporate bonds	109,211,831	-	109,211,831	-
Equities	494,106,560	494,106,560	-	-
Pooled funds	43,047,210	43,047,210	-	-
U.S. and Foreign Government obligations	81,437,455	-	81,437,455	-
	739,324,358	$ 538,678,622	$ 200,645,736	$ -
Investments measured at net asset value	48,599,915			
Total investments at fair value	$ 787,924,273			

		Fair Value Measurements at 12/31/2017 Using		
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level				
Cash deposits and short-term investments	$ 16,189,558	$ 4,302,472	$ 11,887,086	$ -
Corporate bonds	121,812,826	-	121,812,826	-
Equities	617,148,695	617,148,695	-	-
Pooled funds	5,711,250	5,711,250	-	-
U.S. and Foreign Government obligations	68,387,838	-	68,387,838	-
	829,250,167	$ 627,162,417	$ 202,087,750	$ -
Investments measured at net asset value	71,951,202			
Total investments at fair value	$ 901,201,369			

NOTE 7. FAIR VALUE MEASUREMENTS (CONTINUED)

Level 1 Measurements

Cash deposits, equities, and pooled funds are traded in active markets on national and international securities exchanges and are valued at closing prices on the measurement date.

Level 2 Measurements

Short-term investments, corporate bonds, and U.S. Government and Foreign Government obligations are generally valued by benchmarking model-derived prices to quoted market prices and trade data for identical or comparable securities. To the extent that quoted prices are not available, fair value is determined based on a valuation model that include inputs such as interest rate yield curves and credit spreads. Securities traded in markets that are not considered active are valued based on quoted market prices, broker to dealer quotations, or alternative pricing sources with reasonable levels of price transparency. Securities that trade infrequently and therefore have little or no price transparency are valued using the investment manager's best estimates.

The valuation methods for investments measured at net asset value (NAV) are presented on the following table:

	Fair Value		Unfunded	Redemption Frequency	Redemption Notice
	12/31/2018	12/31/2017	Commitments	(If Eligible)	Period
Investments measured at net asset value					
Short-term investments (1)	$ 12,933,509	$ 30,005,919	$ -	Daily	N/A
Pooled funds (2)	22,362,599	25,459,288	-	Daily	N/A
Private equity and venture capital (3)	13,303,807	16,485,995	23,247,100	Closed-end	N/A
Total	$ 48,599,915	$ 71,951,202			

(1) Short-term investments - This investment's objective is to invest in short-term investments of high quality and low risk to protect capital while achieving investment returns. The fair value of the investment in the fund has been determined using the NAV per share of the investment.

(2) Pooled funds - This investment is made up of four funds with an investment objective to maximize the total return. The fair value of the investments in this type has been determined using the NAV per share of the investments.

NOTE 7. FAIR VALUE MEASUREMENTS (CONTINUED)

(3) Private equity and venture capital - This investment consists of eleven limited partnership investments with an investment objective to achieve long-term capital appreciation, preserve capital, and achieve a consistent pattern of returns through investments in limited partnerships, privately issued securities, private equity funds, and other pooled investments with a focus on the venture sector and undervalued alternative investments. Closed-end limited partnership interests are generally illiquid and cannot be redeemed. It is expected that the liquidation of the limited partnership interests will generally coincide with the terms of the various partnership agreements. The limited partnership termination dates range from March 31, 2017 to September 21, 2024 but may be terminated earlier or extended later as set forth in the terms of the applicable partnership agreement. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.

NOTE 8. SECURITIES LENDING

The Statutes and the Board of Trustees permit the Plan to lend its securities to broker-dealers and other entities with a simultaneous agreement to return collateral for the same securities in the future. The Plan's custodian, acting as the lending agent, lends securities for collateral in the form of cash, U.S. Government obligations and irrevocable letters of credit equal to 102% of the fair value of domestic securities plus accrued interest and 105% of the fair value of foreign securities plus accrued interest. The Plan is not restricted as to the type or amount of securities it may loan. The Plan does not have the right to sell or pledge securities received as collateral unless the borrower defaults.

The average term of securities loaned was 51 days in 2018 and 59 days in 2017; however, any loan may be terminated on demand by either the Plan or the borrower. Cash collateral may be invested in a short-term investment pool, which had an average weighted maturity at both December 31, 2018 and 2017 of 27 days. Cash collateral may also be invested in term loans in which the investments (term loans) match the term of the securities loaned.

As of December 31, 2018 and 2017, the fair value (carrying amount) of loaned securities was $89,631,906 and $108,636,573 respectively. As of December 31, 2018 and 2017, the fair value (carrying amount) of cash collateral received by the Plan was $91,416,894 and $111,709,566 respectively. The cash collateral is included as an asset and a corresponding liability on the statements of plan net position.

Although the Plan's securities lending activities are collateralized as described above, they involve both market and credit risk. In this context, market risk refers to the possibility that the borrower of securities will be unable to collateralize the loan upon a sudden material change in the fair value of the loaned securities. Credit risk refers to the possibility that counterparties involved in the securities lending program may fail to perform in accordance with the terms of their contracts.

NOTE 8. SECURITIES LENDING (CONTINUED)

Indemnification deals with the situation in which a client's securities are not returned due to the insolvency of a borrower. The contract with the lending agent requires it to indemnify the Plan if borrowers fail to return the securities (and if the collateral is inadequate to replace the securities lent) or fail to pay the Plan for income distributions by the issuers of securities while the securities are on loan.

There were no losses due to default of a borrower or the lending agent during the years ended December 31, 2018 and 2017.

A summary of securities loaned at fair value as of December 31:

	2018	2017
Corporate bonds	$ 10,901,868	$ 12,254,513
Equities	72,245,010	90,776,836
U.S. and Foreign Government obligations	6,485,028	5,605,224
Total	$ 89,631,906	$ 108,636,573

NOTE 9. DERIVATIVES

The Plan invests in derivative financial instruments as provided by the Plan's statement of investment policy. The Plan uses derivative financial instruments to gain exposure to an asset class or manage portfolio risk. A derivative security is a financial contract whose value is based on, or "derived" from, a traditional security, an asset, or a market index. Derivative instruments include options, forward contracts, swaps, and futures as part of the Plan's portfolio. Derivative transactions involve, to varying degrees, credit risk, interest rate risk and market risk. Credit risk is the possibility that a loss may occur because a party to a transaction fails to perform according to the previously agreed upon terms. Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Market risk is the possibility that a change in interest or currency rates will cause the value of a financial instrument to decrease or become more costly to settle.

NOTE 9. DERIVATIVES (CONTINUED)

The Plan's portfolio includes the following derivative instruments at December 31, 2018 and 2017:

	2018		2017	
Derivative	Notional Value	Fair Value	Notional Value	Fair Value
Options	$ -	$ (76,017)	$ -	$ 55,364
Futures purchase commitments	(34,918,624)	-	(83,730,531)	-
Futures sales commitments	34,918,624	-	83,730,531	-
Swap assets	41,001,000	319,807	5,390,000	93,377
Swap liabilities	(104,502,500)	(374,867)	(3,939,500)	(144,383)
Total	$ (63,501,500)	$ (131,077)	$ 1,450,500	$ 4,358

The Plan uses options to reduce the risk of holding an asset. An option is a contract that conveys the right, but not the obligation, to buy (call) or sell (put) an item at an agreed upon price during a certain period of time or on a specific date. For the years ended December 31, 2018 and 2017, the options expire approximately one to three months after year end.

Futures contracts are used to provide exposure to an asset class using uninvested cash. These contracts are a legally binding agreement, made on the trading floor of a futures exchange, to buy or sell a commodity or financial instrument sometime in the future. Futures contracts have little credit risk, as organized exchanges are the guarantors. For the year ended December 31, 2018, the futures contracts mature from one month to 3 years after year end. For the year ended December 31, 2017, the futures contracts mature from one month to 2 years after year end.

Swaps are used by the Plan to hedge certain risks such as interest rate risk, or to speculate on changes in the underlying price of an asset. Traditionally, a swap is the exchange of one security for another to change the maturity, quality, structure of an issue, or because investment objectives have changed. For the year ended December 31, 2018, the swaps have maturity dates ranging from February 2020 through August 2047. For the year ended December 31, 2017, the swaps have maturity dates ranging from June 2022 through November 2043.

The Plan's derivative instruments are reported at fair value in equity investments on the statements of pension plan fiduciary net position. The gain or loss on derivative instruments is reported as part of investment income on the statements of changes in pension plan fiduciary net position.

NOTE 10. EMPLOYER CONTRIBUTIONS RECEIVABLE - NET

Employer contributions due and not paid prior to year end are recorded as contributions receivable and are reserved for uncertain collections. The allowance for uncollectible accounts is based on the likelihood of future collections. Employer contributions receivable at December 31, 2018 and 2017 consist of the following:

	2018	2017
Employer contributions receivable for	$ 265,845,811	$ 239,263,553
Less allowance for uncollectible accounts	(19,733,115)	(17,069,281)
Total	$ 246,112,696	$ 222,194,272

NOTE 11. DEFERRED COMPENSATION PLAN

The Plan offers its employees a deferred compensation plan established in accordance with Internal Revenue Code Section 457. The deferred compensation plan, which is funded through employee contributions, is available to all Plan employees and permits them to defer a portion of their salary until future years. Participation in the deferred compensation plan is optional. The deferred compensation is managed by a third party administrator. The assets of the deferred compensation plan are placed in trust with the third party for the exclusive benefit of the participants and their beneficiaries and are not considered assets of the Plan.

NOTE 12. RELATED PARTY TRANSACTIONS

The Plan has allowed the Ende, Menzer, Walsh & Quinn Retirees', Widows' and Children's Assistance Fund (the Corporation) to utilize its facilities and equipment to accommodate the once a year distribution to widows and orphans in December at no additional expense to the Plan. This distribution by the Corporation, to the widows and orphans, had been handled by the Plan.

Three of the Plan's Trustees and the Executive Director are also directors of the Corporation.

During both of the years ended December 31, 2018 and 2017, the Plan contributed to the Corporation from the balances in the gift reserve account as allowed under the discretionary authority granted by 40ILCS Act 5, Article 6-202 to render financial assistance to qualified widows and children annuitants of the participants of the Plan.

NOTE 13. LEASE AGREEMENTS

The Plan leases office facilities with lease payments subject to an escalation clause for increases in real estate taxes and maintenance charges. The lease runs through May 2034. Rental expense for 2018 and 2017 was $269,467 and $245,980 respectively. Future minimum rental payments required under the noncancelable operating lease is as follows:

Year ending December 31,	
2019	$ 191,930
2020	237,164
2021	240,808
2022	244,452
2023	248,096
2024	251,740
2025	255,384
2026	259,028
2027	262,672
2028	266,316
2029	269,960
2030	273,604
2031	277,248
2032	280,892
2033	284,535
2034	119,189
Total	$ 3,963,018

NOTE 14. PRONOUNCEMENTS ISSUED NOT YET EFFECTIVE

In November 2016, GASB issued Statement No. 83, *Certain Asset Retirement Obligations*. Statement No. 83 addresses accounting and financial reporting for certain asset retirement obligations and establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for asset retirement obligations. Statement No. 83 is effective for the Plan's fiscal year ending December 31, 2019.

In January 2017, GASB issued Statement No. 84, *Fiduciary Activities*. Statement No. 84 improves guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. Statement No. 84 is effective for the Plan's fiscal year ending December 31, 2019.

NOTE 14. PRONOUNCEMENTS ISSUED NOT YET EFFECTIVE (CONTINUED)

In June 2017, GASB issued Statement No. 87, *Leases*. Statement No. 87 was issued to improve accounting and financial reporting for leases by governments. This Statement increases the usefulness of governmental financial statements by requiring recognition of certain lease assets and liabilities for leases that were previously classified as operating leases. Statement No. 87 establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Statement No. 87 is effective for the Plan's fiscal year ending December 31, 2020.

In June 2017, GASB issued Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*. Statement No. 88 was issued to improve the information that is disclosed in notes to government financial statements related to debt. This Statement also clarifies which liabilities governments should include when disclosing information related to debt. Statement No. 88 is effective for the Plan's fiscal year ending December 31, 2019.

In June 2018, GASB issued Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*. Statement No. 89 was issued to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and simplify accounting for interest cost incurred before the end of a construction period. Statement No. 89 is effective for the Plan's fiscal year ending December 31, 2020.

In August 2018, GASB issued Statement No. 90, *Major Equity Interests - An Amendment of GASB Statements No. 14 and No. 61*. Statement No. 90 was issued to improve the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. Statement No. 90 is effective for the Plan's fiscal year ending December 31, 2019.

In May 2019, GASB issued Statement No. 91, *Conduit Debt Obligations.* Statement No. 91 was issued to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with commitments extended by issuers, arrangements associated with conduit debt obligations, and related note disclosures. Statement No. 91 is effective for the Plan's fiscal year ending December 31, 2021.

The Plan is currently evaluating the impact of adopting the aforementioned GASB Statements.

REQUIRED SUPPLEMENTARY INFORMATION

Firemen's Annuity and Benefit Fund of Chicago

Required Supplementary Information

Schedule of Changes in the City's Net Pension Liability and Related Ratios

	2018	2017	2016	2015	2014
Total pension liability					
Service cost including pension plan administrative expense	$ 97,143,246	$ 93,366,729	$ 94,115,473	$ 87,203,153	$ 83,095,601
Interest on the total pension liability	410,821,674	371,622,080	342,084,603	338,986,636	329,965,941
Benefit changes	-	-	227,212,695	-	-
Difference between expected and actual experience	(56,417,879)	26,954,338	24,110,158	(7,980,712)	-
Assumption changes	382,610,753	414,218,762	(74,372,930)	176,281,502	88,448,895
Benefit payments	(320,595,085)	(302,518,486)	(283,085,767)	(274,459,754)	(261,571,672)
Refunds	(4,067,219)	(3,579,629)	(3,673,250)	(3,557,317)	(2,321,666)
Pension plan administrative expense	(3,285,110)	(3,171,986)	(3,216,823)	(3,149,549)	(3,069,192)
Net change in total pension liability	506,210,380	596,891,808	323,174,159	313,323,959	234,547,907
Total pension liability					
Beginning of year	5,746,150,005	5,149,258,197	4,826,084,038	4,512,760,079	4,278,212,172
End of year	$ 6,252,360,385	$ 5,746,150,005	$ 5,149,258,197	$ 4,826,084,038	$ 4,512,760,079
Plan fiduciary net position					
Contributions - employer	$ 249,684,038	$ 228,452,611	$ 154,101,396	$ 236,104,362	$ 107,334,399
Contributions - employee	45,894,781	47,364,276	48,959,929	46,552,247	48,056,393
Net investment income (loss)	(58,000,233)	140,569,856	60,881,106	7,595,562	30,867,889
Benefit payments	(320,595,085)	(302,518,486)	(283,085,767)	(274,459,754)	(261,571,672)
Refunds	(4,067,219)	(3,579,629)	(3,673,250)	(3,557,317)	(2,321,666)
Pension plan administrative expense	(3,285,110)	(3,171,986)	(3,216,823)	(3,149,549)	(3,069,192)
Other	5,853	22,879	(53,891)	7,141	7,393
Net change in plan fiduciary net position	(90,362,975)	107,139,521	(26,087,300)	9,092,692	(80,696,456)
Plan fiduciary net position					
Beginning of year	1,126,153,314	1,019,013,793	1,045,101,093	1,036,008,401	1,116,704,857
End of year	$ 1,035,790,339	$ 1,126,153,314	$ 1,019,013,793	$ 1,045,101,093	$ 1,036,008,401
City's net pension liability	$ 5,216,570,046	$ 4,619,996,691	$ 4,130,244,404	$ 3,780,982,945	$ 3,476,751,678
Plan fiduciary net position as a percentage of the total pension liability	16.57%	19.60%	19.79%	21.66%	22.96%
Covered payroll	$ 456,969,301	$ 469,407,281	$ 478,470,944	$ 465,231,594	$ 460,189,982
Employer's net pension liability as a percentage of covered payroll	1141.56%	984.22%	863.22%	812.71%	755.50%

Note: This schedule is intended to show information for ten years. The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

SCHEDULE OF CITY CONTRIBUTIONS AND RELATED NOTES

LAST TEN FISCAL YEARS

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Actuarially determined contribution	$ 412,220,284	$ 372,845,121	$ 333,952,291	$ 323,544,987	$ 304,265,411	$ 294,877,895	$ 271,505,718	$ 250,056,273	$ 218,388,037	$ 203,866,919
Contributions in relation to the actuarially determined contribution	(249,684,038)	(228,452,611)	(154,101,396)	(236,104,362)	(107,334,399)	(103,669,015)	(81,521,883)	(82,869,839)	(80,947,311)	(89,211,671)
Contribution deficiency	$ 162,536,246	$ 144,392,510	$ 179,850,895	$ 87,440,625	$ 196,931,012	$ 191,208,880	$ 189,983,835	$ 167,186,434	$ 137,440,726	$ 114,655,248
Covered payroll	$ 456,969,301	$ 469,407,281	$ 478,470,944	$ 465,231,594	$ 460,189,982	$ 416,491,784	$ 418,964,763	$ 425,385,354	$ 400,404,320	$ 400,912,173
Contributions as a percentage of covered payroll	54.64%	48.67%	32.21%	50.75%	23.32%	24.89%	19.46%	19.48%	20.22%	22.25%

Notes to Schedule

Valuation Date: December 31, 2018

Methods and assumptions used to determine contribution rates as of the valuation date:

Actuarial cost method	Entry Age Normal
Amortization method	Prior to 2015, the total City contribution was generated by a tax equal to 2.26 times the contributions by the firemen to the Plan two years prior to the year of the tax levy. For years 2015-2019, the statutory contributions are $199 million, $208 million, $227 million, $235 million and $245 million, respectively. For years on and after 2020, the statutory contributions are equal to a level percentage of pay contribution determined so that the Plan attains a 90 percent funded ratio by the end of 2055 on an open group basis.
Remaining amortization period	Not applicable
Asset valuation method	5 year smoothed market
Inflation	2.25% per year
Salary increases	Salary increase rates based on age-related productivity and merit rates plus wage inflation of 3.50%.
Investment rate of return	6.75% per year
Retirement age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2017 valuation, pursuant to an experience study of the period January 1, 2012 through December 31, 2016.
Mortality	Post-retirement mortality: Scaling factors of 106% for males and 98% for females of the RP-2014 Blue Collar Healthy Annuitant mortality table, sex distinct, with generational mortality improvement using MP-2017 two-dimensional mortality improvement scales. Disabled mortality: Scaling factors of 107% for males and 99% for females of the RP-2014 Blue Collar Healthy Annuitant mortality table, sex distinct, with generational mortality improvement using MP-2017 two-dimensional mortality improvement scales. Pre-retirement mortality: Scaling factors of 92% for males and 100% for females of the RP-2014 Blue Collar Healthy Annuitant mortality table, sex distinct, with generational mortality improvement using MP-2017 two-dimensional mortality improvement scales. Future mortality improvements in pre and post-retirement mortality are reflected by projecting the base mortality tables back from the year 2014 to the year 2006 using the MP-2014 projection scale and projecting from 2006 using the MP-2017 projection scale.
Postretirement annuity increases	A retiree born before January 1, 1966, with at least 20 years of service or receiving a mandatory retirement minimum annuity, receives an increase of 3 percent of the original annuity, starting on the first of the month following the first anniversary of his retirement or the first of the month following attainment of age 55, whichever is later, and shall not be subject to a 30 percent maximum increase. For retirees born after January 1, 1966, automatic increases are 1.5 percent of the original annuity, commencing at age 60, or the first anniversary of retirement, if later, to a maximum of 30 percent. For participants that first became members on or after January 1, 2011, increases are equal to the lesser of 3.00 percent and 50 percent of CPI-U of the original benefit, commencing at age 60.

See Report of Independent Auditors.

Firemen's Annuity and Benefit Fund of Chicago

Required Supplementary Information

Schedule of Investment Returns

	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	-6.6%	17.9%	7.5%	-0.1%	3.4%

Note: This schedule is intended to show information for ten years. The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

SUPPLEMENTARY INFORMATION

Firemen's Annuity and Benefit Fund of Chicago

Supplementary Information

Schedules of Administrative Expenses

Years Ended December 31, 2018 and 2017

	2018	2017
Administrative expenses		
Disaster recovery	$ 7,200	$ 4,217
Employee benefits	516,606	489,472
Equipment and maintenance	39,160	40,817
General and administrative	156,474	166,517
Insurance and surety bond	159,375	163,139
Office salaries	1,275,029	1,424,160
Printing and postage	83,257	53,467
Professional and consulting fees		
Actuarial	136,850	77,655
Audit	43,665	55,800
Consulting	139,183	33,307
Legal	331,191	308,688
Medical	122,950	104,354
Payroll administration	4,703	4,413
Rent	269,467	245,980
Total administrative expenses	$ 3,285,110	$ 3,171,986

Firemen's Annuity and Benefit Fund of Chicago

Supplementary Information

Schedules of Investment Expenses

Years Ended December 31, 2018 and 2017

	2018	2017
Investment manager expenses		
Adams Street Partners, LLC	$ 294,721	$ 147,568
Apollo Global Management, LLC	29,715	38,629
Neuberger Berman - Private Equity	3,166	123,273
Brandes Investment Partners	372,392	358,173
Brown Advisory	227,367	220,576
Chicago Equity Partners, LLC	66,354	67,774
Credit Suisse	13,038	11,318
Earnest Partners, LLC	150,248	151,294
Epoch Investment Partners, Inc.	348,479	352,631
Garcia Hamilton & Associates, L.P.	5,822	-
GlobeFlex Capital, L.P.	447,142	462,524
Jackson Square (Formerly Delaware Investments)	253,043	240,744
Keeley Asset Management Corp.	180,316	181,773
Kennedy Capital Management	185,234	185,182
Logan Capital Management, Inc.	175,232	174,262
Loomis, Sayles & Company, L.P.	274,356	280,227
LSV Asset Management	413,673	427,213
Mesirow Financial	1,108	30,789
Muller & Monroe Asset Management, LLC	-	3,494
Neuberger Berman	351,696	347,153
Pomona Management, LLC	246,615	139,138
Rhumbline Advisers	15,698	16,377
The Boston Company Asset Management, LLC	161,709	161,372
Wells Fargo (Formerly Metropolitan West Capital Management, LLC)	195,244	194,539
Western Asset Management Company	200,597	205,148
William Blair & Company	364,453	353,733
	4,977,418	4,874,904
Other trading expenses and investment fees		
Northern Trust	531,925	274,381
Investment consulting fees		
Callan Associates, Inc.	270,012	264,096
Investment custodian fees		
Northern Trust	80,500	80,500
Total investment expenses	$ 5,859,855	$ 5,493,881

Firemen's Annuity and Benefit Fund of Chicago

Supplementary Information

Additions by Source

Year Ended December 31,	Employer Contributions	Plan Member Contributions	Net Investment and Net Securities Lending Income (Loss)	Other	Total Additions
2013	$ 106,219,800	$ 42,520,218	$ 190,532,880	$ (57,079)	$ 339,215,819
2014	$ 109,805,454	$ 48,056,393	$ 30,863,888	$ 11,394	$ 188,737,129
2015	$ 238,485,820	$ 46,552,247	$ (346,886)	$ 7,949,589	$ 292,640,770
2016	$ 156,158,391	$ 48,959,929	$ 55,362,185	$ 5,525,415	$ 266,005,920
2017	$ 228,452,611	$ 47,364,276	$ 140,507,402	$ 85,333	$ 416,409,622
2018	$ 249,684,038	$ 45,894,781	$ (58,048,526)	$ 54,146	$ 237,584,439

Deductions by Type

Year Ended December 31,	Benefits	Administrative Expenses	Annuitant Health Care	Other	Total Deductions
2013	$ 247,057,741	$ 3,101,827	$ 2,550,785	$ 2,223,407	$ 254,933,760
2014	$ 261,571,672	$ 3,066,946	$ 2,471,055	$ 2,323,912	$ 269,433,585
2015	$ 274,459,754	$ 3,149,549	$ 2,381,458	$ 3,557,317	$ 283,548,078
2016	$ 283,085,767	$ 3,216,823	$ 2,056,995	$ 3,733,635	$ 292,093,220
2017	$ 302,518,486	$ 3,171,986	$ -	$ 3,579,629	$ 309,270,101
2018	$ 320,595,085	$ 3,285,110	$ -	$ 4,067,219	$ 327,947,414