Municipal Employees' Annuity and Benefit Fund of Chicago

A Pension Trust Fund of the City of Chicago
Chicago, Illinois

2018

Comprehensive Annual Financial Report

For the Fiscal Years Ended December 31, 2018 and 2017

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Annuity and Benefit Fund of Chicago

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Prepared by Administrative Staff of the
Municipal Employees' Annuity and Benefit Fund of Chicago
321 North Clark Street, Suite 700
Chicago, Illinois 60654

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Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Municipal Employees' Annuity and Benefit Fund of Chicago Illinois

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

December 31, 2017

Christopher P. Morrill

Executive Director/CEO

RETIREMENT BOARD As of June 1, 2019

JEFFREY J. JOHNSON
Fire Communications Operator II
Office of Emergency Management and Communications
Elected Trustee

THOMAS J. MCMAHON
General Foreman – Hoisting Engineers
Department of Water Management
Elected Trustee

VERNA R. THOMPSON
Supervisor of Traffic Control Aides
Office of Emergency Management and Communications
Elected Trustee

ERIN KEANE
City Comptroller
Department of Finance
Ex-Officio Trustee

MELISSA CONYEARS-ERVIN
City Treasurer
Ex-Officio Trustee

A five-member Retirement Board is the governing body of the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF). By statute, the Retirement Board shall consist of two ex-officio members, the City Comptroller and the City Treasurer, and three members who are employees and elected by the contributing members.

The Retirement Board is ultimately responsible for the operation, administration and management of all the activities of MEABF. Having oversight of the investment activities, the Retirement Board sets investment policies and objectives, hires investment managers and investment consultants and reviews investment performance. The Retirement Board also approves the MEABF operating budget and approves or denies benefit claims.

The Retirement Board appoints the Executive Director, and retains consultants for investment, actuarial, audit, legal and other provisional services necessary for the transaction of business.

The Retirement Board meets monthly and holds special meetings as needed. As members of the Retirement Board, they receive no compensation.

Municipal Employees' Annuity and Benefit Fund of Chicago
A Pension Trust Fund of the City of Chicago
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www.meabf.org

LETTER OF TRANSMITTAL

June 1, 2019

To the Retirement Board of the Municipal Employees' Annuity & Benefit Fund of Chicago

It is with great pleasure that we submit the Comprehensive Annual Financial Report (CAFR) for the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF or the Plan), a pension trust fund of the City of Chicago, for the fiscal years ended December 31, 2018 and 2017.

The CAFR provides an overview of the Plan, comprehensive accounting of Plan activities and operations, detailed financial and actuarial information, investment performance, statistical information and Plan stewardship. A full version of the report is available on the web at http://www.meabf.org/publications.php.

Bansley and Kiener, LLP, Certified Public Accountants, have issued an unmodified ("clean") opinion on the Plan's financial statements as of December 31, 2018 and 2017. The independent auditor's report is located at the front of the Financial Section of this report.

Financial Reporting

Management Responsibility - Responsibility for the preparation, accuracy, completeness and fairness of the presentation, including all disclosures, made in this report rests with management. To the best of our knowledge and belief, the information contained in this report is complete; all disclosures necessary to enable the reader to gain an understanding of MEABF activities have been included.

Plan management is responsible for establishing and maintaining a system of internal controls. The system provides management with reasonable, but not absolute, assurance regarding the safeguarding of assets against loss, theft, or unauthorized disposition and the reliability of the financial records from which the financial reports are prepared. The concept of reasonable assurance recognizes that the cost of a control should not exceed anticipated benefits.

Accounting System – The Plan's financial statements have been prepared in accordance with generally accepted accounting principles applied on a consistent basis, in accordance with the standards and requirements of the Governmental Accounting Standards Board (GASB). The financial statements are prepared on the accrual basis of accounting.

Management's Discussion and Analysis – Management's discussion and analysis (MD&A), which immediately follows the Independent Auditor's Report in the Financial Section, provides an additional narrative introduction, and an overview and analysis of the basic financial statements. This transmittal is designed to complement the MD&A and should be read in conjunction with it.

Plan Administration

MEABF is administered under the direction of a Retirement Board responsible for the oversight, management and administration of the Plan. The Retirement Board is comprised of three elected members and two ex-officio members (the City Treasurer and the City Comptroller). The Retirement Board has a fiduciary duty to act solely in the best interests of the Plan members.

To help carry out their responsibilities, the Retirement Board appoints an Executive Director and retains consultants for investment, actuarial, audit, legal and other provisional services necessary for the transaction of business. The Executive Director oversees the administration of the Plan and reports to the Retirement Board.

Plan Profile

MEABF is a pension trust fund of the City of Chicago and is administered under Chapter 40, Act 5, Article 1,8 and 20 of the Illinois Compiled Statutes (Statutes). The Plan is a defined benefit single employer plan that was established in 1921 by the Illinois State legislature, which is the governing body that sets benefit levels, as well as employee and employer contribution levels for financing the Plan.

In accordance with the statutes, MEABF administers age and service retirement benefits, survivor benefits, post-retirement increases and duty and ordinary disability benefits to eligible members. As of December 31, 2018, MEABF served a total of 31,285 active members (18,372 Tier 1 members (59%), 8,248 Tier 2 members (26%) and 4,665 Tier 3 members (15%); 25,577 retirees and beneficiaries; and 17,575 inactive members. For a more detailed description of the Plan, its membership, benefit provisions and eligibility requirements, please read Note 7 of the Notes to Financial Statements in the Financial Section.

Actuarial Funding Status

An actuarial valuation of the Plan is conducted annually and an experience review is performed and approved by the Retirement Board every five years. In the actuarial valuation as of December 31, 2018, performed by the Plan's independent actuary, Segal Consulting, the actuarial accrued liability, actuarial value of assets and unfunded actuarial accrued liability of MEABF amounted to $16,808.6 million, $4,195.6 million and $12,612.9 million, respectively. As of December 31, 2018 MEABF has a funded ratio of 24.96% (actuarial value of assets divided by actuarial liabilities).

Beginning in 2014, the Plan incorporated GASB 67, which required certain disclosure requirements and a calculation of a blended discount rate that varies from the discount rate used for funding purposes if a projection of the Plan's assets and future contributions are insufficient to pay benefits to current members. Due to Public Act 100-0023 being enacted to provide a funding mechanism that is projected to make all benefit payments to current members, the GASB blended discount rate calculation results in the same discount rate as used for funding purposes. As a result the total pension liability for financial reporting (GASB 67) equals the actuarial accrued liability for funding purposes. For 2018, utilizing the requirements of GASB 67, the total pension liability was $16,808.6 million, leaving a net pension liability of $12,894.4 million. In 2018, based on the requirements of GASB 68, the Plan Sponsor (City of Chicago) must reflect this liability on their financial statements. The 2018 net pension liability was an increase of 9.9% compared to 2017.

MEABF is funded by employer and member contributions in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/8). As of December 31 2018 as mandated by state statute, member contributions are set at 8.5% of pensionable salary for Tier 1 and Tier 2 members and 11.5% of pensionable salary for Tier 3 members. Employer contributions are specified amounts of $266 million in 2018, $344 million in 2019, $421 million in 2020, $499 million in 2021 and $576 million in 2022. Starting in 2023 employer contributions are calculated as a level percent of payroll sufficient to bring the total assets of the Plan up to 90% of the actuarial accrued liability by the end of 2058. The statutory employer contributions have been less than the actuarially determined contributions for the past sixteen years growing over time.

In the opinion of Segal Consulting, the Plan's Consulting Actuary, the risk of insolvency for MEABF has increased. The increased risk of insolvency is due to the 2018 investment performance combined with the fixed-dollar contributions through 2022 which do not change when the Fund experiences unfavorable investment performance. If the fund becomes insolvent, the employer will be required to make contributions on a "pay as you go" basis, which means the employer would have to pay all benefits as they become due. Additional discussion relating to funding is provided in the Actuarial Section.

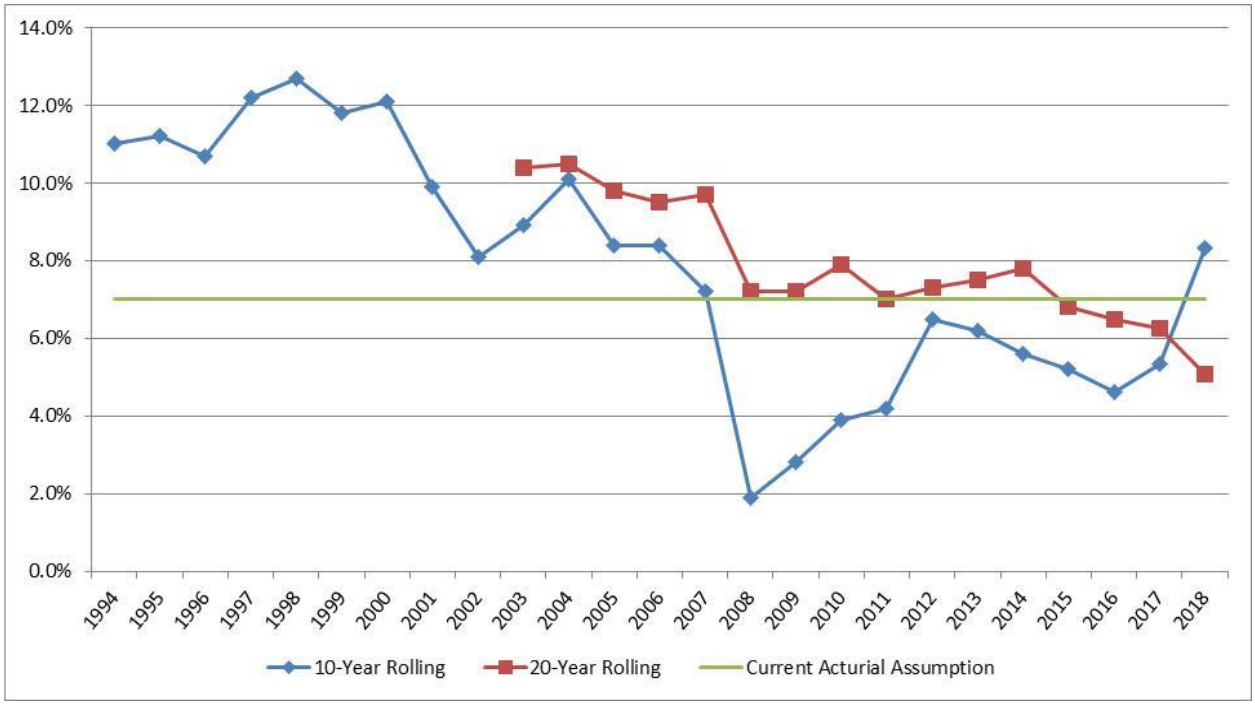
Investments

Plan assets are invested in accordance with the "Prudent Person Rule" for the sole purpose of providing benefits to Plan members. The Plan's portfolio is diversified globally amongst various asset classes, investment styles, and economic sectors in an effort to achieve optimal long-term return, at a pre-determined level of risk. The Plan's Actuary assumes a long-term investment return of 7.0%. In 2018, the Plan's investment portfolio returned, net-of-fees, negative 5.7% compared to negative 3.9% of the policy benchmark. **Going forward, the Plan's ability to meet its return objective over the long term will continue to be challenged as invested assets are liquidated to pay monthly benefits**. During fiscal year 2018, approximately $523.5 million was liquidated to assist in meeting benefit payment obligations.

Economic Condition and Outlook

During 2018, the U.S. economy experienced GDP growth of 2.9%, with global developed economies growing at 2.2%, and emerging economies at roughly 4.5%. The U.S. unemployment rate continued to decrease in 2018, ending the year at 3.9%. Trade tensions and the Federal Reserve's policy discussions led to volatile capital markets at the end of 2018. Continued economic growth and strength in capital markets are essential for the Plan to meet its future obligations.

The chart below compares ten and twenty-year rolling returns to the actuarially assumed rate of return. Over the long-term, MEABF has historically outperformed the assumed rate of return. The effects of the "Tech Bubble" (2000-2002) and the "Great Recession" (2008-2009) pulled down the rolling returns considerably. Despite the negative market returns in 2018, we are pleased that returns have been strong over the last ten years, averaging 8.3% annually, net of fees. The Retirement Board will continue to structure the portfolio in accordance with the target allocation mix, which should reduce downside risk and best position the portfolio to achieve long-term performance goals and objectives.



The Investment Section contains a summary of the Retirement Board's investment policy, including goals and objectives, and a comprehensive analysis of the Plan's portfolio performance for the fiscal year 2018.

Plan Initiatives

Investments:

The Retirement Board took the following actions in 2018:

- Domestic Equity: The Board initiated a small cap value manager search in 2017, which concluded in 2018. A small-cap value manager with roughly $80 million was terminated. The proceeds plus cash were equally awarded to two small-cap value managers.

- Global Equity: The Board conducted a search of an emerging manager of managers program provider in 2018. An emerging manager of managers with roughly $150 million was terminated and the mandate was awarded to a Chicago based emerging manager of managers program provider.

- Fixed Income: The Board conducted a core fixed income manager search because two core fixed income managers with roughly $50 million each were terminated. The proceeds of the termination plus additional cash were equally awarded to two core fixed income managers. One of the new managers is a Minority, Women and Disadvantaged Business Enterprise.

- Real Assets: The Board approved a search for an open-end core infrastructure mandate. A search was initiated and concluded in the fourth quarter of 2018 pending successful contract negotiations. Initial commitment was 2% of the total assets under management at the first capital call.

- Investment Consultant: The Board conducted a general investment consultant search and retained the incumbent investment consultant, Marquette Associates.

Operations:

The following quantifies some of the program services provided during fiscal year 2018:

Benefit Payment Services

- 304,136 annuity benefit payments to retirees and beneficiaries totaling $878.7 million. Of these, 94% were paid via electronic funds transfer with the remaining 6% by check.
- 25,577 annuitants at year-end 2018, 22,025 or 86% remained Illinois residents and 3,552 or 14% were out-of-state residents. About 15,864 annuitants residing in the City of Chicago received benefit payments totaling $562.2 million annually.
- 25,526 annual benefit statements showing new benefit amounts and deductions for 2018 were mailed to annuity benefit recipients.
- 1,351 new retirees, spouse/reversionary/child annuitants added to annuity payroll. 1,174 retirees, spouse/reversionary/child annuitants removed from payroll due to death or termination.
- 4,356 disability benefit payments to disabled participants totaling $10.4 million. At year-end, there were 158 disabled participants receiving ordinary disability benefits and 164 disabled participants were receiving duty disability benefits.
- 28,941 1099Rs issued for tax reporting purposes.
- 24,557 pension verification forms sent to benefit recipients to confirm that the intended recipients were still alive and therefore eligible to receive benefits.

Member Services

- 27,787 printed statements of contributions to active participants.
- 2,988 individualized benefit counseling sessions conducted.
- 2,477 benefit estimates mailed.
- 113,702 phone calls received.
- Quarterly pre-retirement seminars held.
- Responded to approximately 50 requests made in accordance with Illinois Freedom of Information Act.

Withdrawals of Contributions

- 852 lump sum payments to members not eligible for retirement.
- 529 lump sum payments of spousal contributions.
- 27 lump sum payments in lieu of annuity.
- 101 lump sum payments to beneficiaries.

Document management

- 77,830 documents (148,475 pages) indexed and scanned during 2018

Certificate of Achievement for Excellence in Financial Reporting

The Plan was awarded a Certificate of Achievement for Excellence in Financial Reporting for its CAFR for the year ended December 31, 2017 by the Government Finance Officers Association of the United States and Canada (GFOA). The Plan has received this prestigious award in each of the last 29 years.

To be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized CAFR that satisfies both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one-year only. We believe this report conforms to the program requirements and we are submitting it to the GFOA to determine its eligibility for award.

Acknowledgments

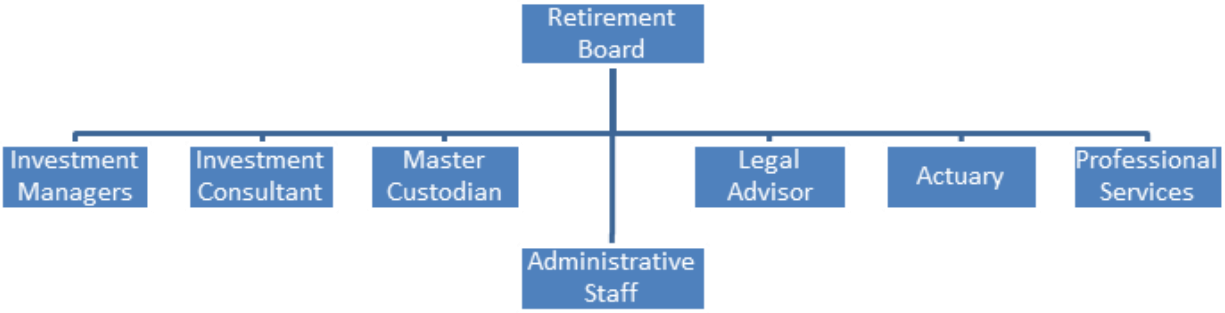
We extend our profound gratitude to the entire Retirement Board for their commitment, leadership and continued support and to the advisors and consultants. We thank the dedicated MEABF staff for their tireless efforts in serving the needs of members. We are grateful to all those who contributed to this project.

Respectively submitted,

Jim Mohler
Executive Director

Sandra Shelby
Comptroller

ORGANIZATION CHART



CONSULTANTS AND ADVISORS

Investment Consultant
Brian Wrubel
James R. Wesner
Marquette Associates
Chicago, IL

Auditor
Gerard J. Peter, C.P.A.
Bansley & Kiener, L.L.P.
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Master Custodian
Kimberly Miller
The Northern Trust Company
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Jacobke Libauskas, ASA,MAAA, EA
Segal Consulting
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Custodian
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City Treasurer
Chicago, IL

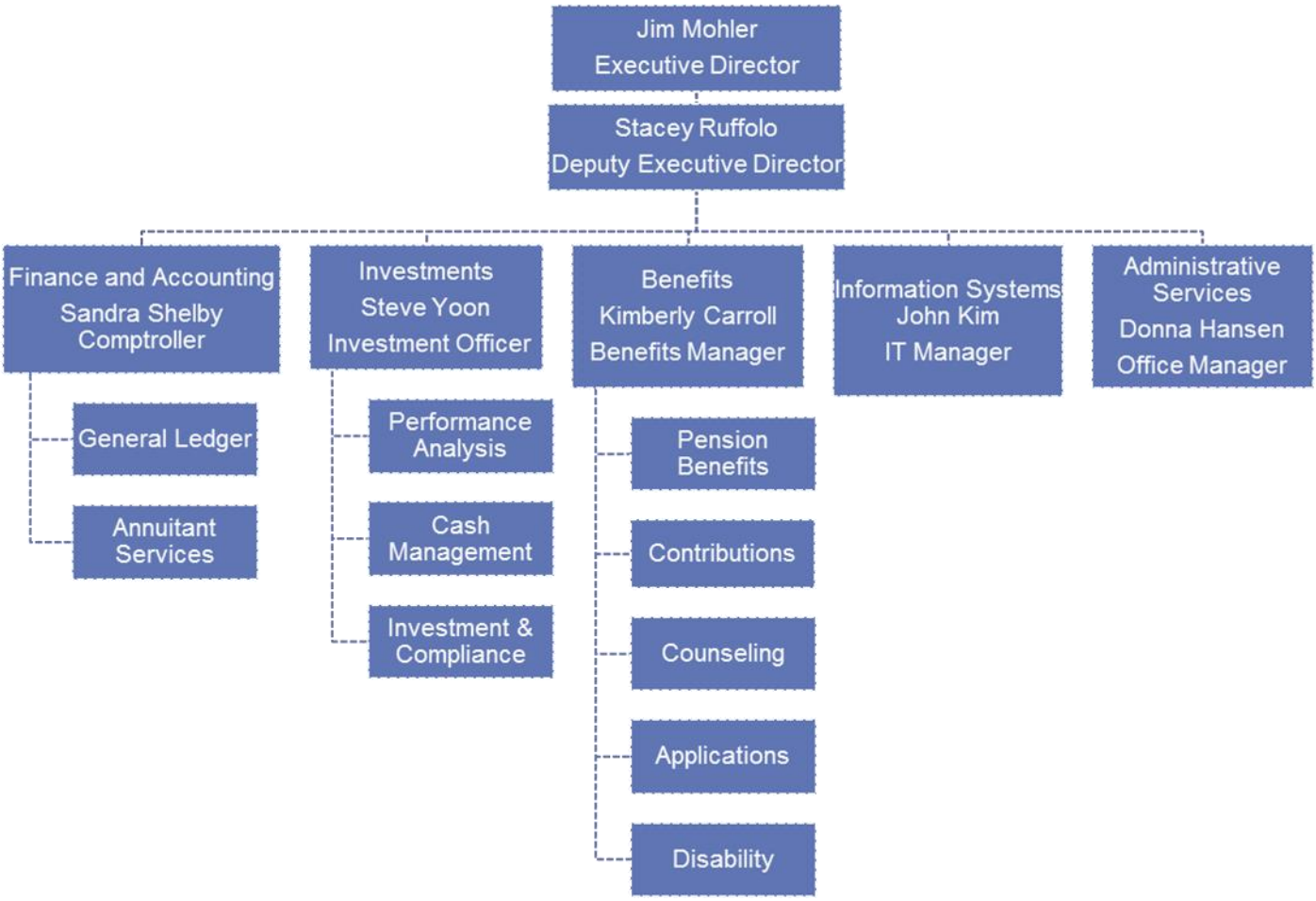
Legal Advisor
Mary Pat Burns
Burke, Burns & Pinelli, Ltd
Chicago, IL

Medical Advisor
Terence Sullivan, M.D.
Chicago, IL

Investment Managers and Investment Fees - are listed on pages 60-61 and 52-53

Brokers used by Investment Managers - are listed on pages 72-73

Administrative Staff (as of June 1, 2019)



Appointed by the Retirement Board, the Executive Director and his staff are responsible for the day-to-day administration and operation. The administrative staff also implements the investment policies and decisions of the Retirement Board and the benefit provisions of the Plan. The administrative staff of forty- five (45) full time employees serves 31,285 actively contributing members; 25,577 retirees and surviving beneficiaries; and 17,575 inactive members.

FINANCIAL

BANSLEY AND KIENER, L.L.P.
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INDEPENDENT AUDITOR'S REPORT

The Retirement Board
Municipal Employees' Annuity & Benefit Fund
of Chicago
Chicago, Illinois

We have audited the statements of fiduciary net position of Municipal Employees' Annuity & Benefit Fund of Chicago (the Plan), a Component Unit of the City of Chicago, as of December 31, 2018 and 2017, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statement 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 the financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our 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 audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Plan's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of Municipal Employees' Annuity & Benefit Fund of Chicago as of December 31, 2018 and 2017, and the changes in its fiduciary net position for the years then ended in accordance 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 the management's discussion and analysis and other supplementary information on pages 16 through 22 and pages 51 through 56 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.

Other Information

Our audits were conducted for the purpose of forming an opinion on the financial statements taken as a whole. The schedules of administrative expenses, investment management compensation, and professional and consulting costs are presented for purposes of additional analysis and are not a required part of the basic financial statements. The schedules of administrative expenses, investment management compensation, and professional and consulting costs are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the basic financial statements as a whole.

Barnaley and Kiener, L.L.P.

Certified Public Accountants

May 22, 2019

Management's Discussion and Analysis

This Management Discussion and Analysis (MD&A) of the Municipal Employees' Annuity and Benefit Fund of Chicago ("MEABF" or the "Plan") provides a narrative overview and analysis of the financial activities of MEABF for the years ended December 31, 2018 and 2017. Readers are encouraged to read the MD&A in conjunction with the financial statements to better understand the financial condition and performance of MEABF during the year ended December 31, 2018. Information for fiscal years 2017 and 2016 is presented for comparative purposes.

Financial Highlights

- The Plan's fiduciary net position decreased by $639.8 million to $3,914.2 million as of December 31, 2018, compared to an increase of $117.8 million, from $4,436.2 million to $4,554.0 as of December 31, 2017.
- The Plan has continued to liquidate portfolio assets at an alarming rate to supplement the disbursement of benefit payments. During fiscal year 2018, approximately $523.5 million in portfolio assets were liquidated compared to $606.4 million in fiscal year 2017 and $586.6 million in fiscal year 2016.
- MEABF's total investment portfolio generated a negative return of 5.7 percent in 2018 on a net-of-fees basis. The net returns in 2017 and 2016 were 15.1 percent and 6.3 percent, respectively. The total portfolio return in 2018 was below the 7.0 percent actuarial investment return assumptions.
- On a fair value basis, this year's money weighted investment rate of return net of investment expense, was a negative 5.2 percent, compared with the last year's return of 14.9 percent.
- Total additions as reported in the statements of changes in fiduciary net position decreased by $729.4 million or 72.0 percent to $283.0 million in 2018 from $1,012.4 million in 2017.
- Total deductions as reported in the statements of changes in fiduciary net position increased by $28.2 million or 3.2 percent to $922.8 million in 2018 from $894.6 million in 2017.
- Annuity benefits paid to retirees and beneficiaries increased by $36.1 million or 4.3 percent to $878.7 million for fiscal year 2018, compared to an increase of $29.5 million or 3.6 percent to $842.6 million in fiscal year 2017 from $813.1 million in fiscal year 2016.
- The December 31, 2018 financial actuarial valuation calculated a total pension liability of $16,808.6 million and the net pension liability of $12,894.4 million.
- As of the December 31, 2018, the most recent funding actuarial valuation, the Plan's unfunded actuarial accrued liability increased to $12,612.9 million from $11,825.6 million from the prior year. As of the December 31, 2018, the most recent funding actuarial valuation, the Plan's funded ratio was 24.9 percent compared with a funded ratio of 27.4 percent for the prior year.

Overview of the Financial Statements

This discussion and analysis is an introduction to the Plan's basic financial statements prepared on an accrual basis of accounting in accordance with Governmental Accounting Standards Board (GASB) pronouncements and reflect all financial activities. The Plan's basic financial statements include (1) Statements of fiduciary net position (2) Statements of changes in fiduciary net position (3) Notes to the financial statements. In addition to the basic financial statements, this financial report also contains required supplementary information and other supplementary schedules.

Basic Financial Statements

The *statements of fiduciary net position* restricted for pension benefits report Plan assets at fair value, liabilities and the resulting fiduciary net position (assets - liabilities = fiduciary net position) at year-end. The *statements of changes in fiduciary net position* report the results of financial activities that occurred during the fiscal year, disclosing the additions to fiduciary net position, such as contributions and net investment income, and deductions from fiduciary net position such as benefit payments and administrative expenses. The resulting net increase (decrease) in fiduciary position (additions - deductions = net increase (decrease) in fiduciary position) reflects the change in net fiduciary position reported in the *statements of fiduciary net position.*

Notes to the Basic Financial Statements

The *notes to the financial statements* are an integral part of the financial statements and include additional information not readily evident in the statements themselves. The notes also include schedules to provide a better understanding of the data provided in the financial statements.

Required Supplementary Information

The required supplementary information following the notes to the financial statements is required by GASB. It provides historical information and additional details considered useful in evaluating the financial condition of the Plan. It includes schedules related to the net pension liability, contributions from employer, and the annual money weighted rate of return on pension plan investments.

Other Supplementary Schedules

Additional supplemental schedules include detailed information regarding administrative expenses, consulting costs and investment management fees.

Fiduciary Net Position Restricted for Pension Benefits (in millions)

(As of December 31, 2018, 2017 and 2016)

	2018	2017	2016
Assets			
Cash, receivables and other assets	$ 380.4	$ 303.3	$ 238.6
Investments, at fair value	3,559.2	4,296.1	4,285.7
Invested securities lending collateral	121.9	243.6	304.8
Total assets	4,061.5	4,843.0	4,829.1
Liabilities			
Accrued expenses and other liabilities	25.4	45.4	88.1
Securities lending collateral	121.9	243.6	304.8
Total liabilities	147.3	289.0	392.9
Fiduciary Net Position restricted for pension benefits	**$ 3,914.2**	**$ 4,554.0**	**$ 4,436.2**

Fiduciary net position restricted for pension benefits decreased by $639.8 million during fiscal year 2018 to $3,914.2 million from $4,554.0 million in 2017. Invested assets at fair value decreased by $736.9 million in 2018 to $3,559.2 from $4,2961.1 million in 2017.

The loss in assets would have been significantly lower if portfolio assets were not liquidated to supplement the disbursement of benefit payments during the year. During 2018 approximately $523.5 million in portfolio assets were liquidated compared to $606.4 million during 2017 and $586.6 million during 2016.

Summary of Investments (in millions)
(As of December 31, 2018, 2017 and 2016)

	2018	2017	2016
Fixed Income	$ 899.5	$ 986.5	$ 1,007.4
Domestic equity	880.9	1,208.0	1,058.2
International equity	682.1	881.7	868.4
Hedged equity	394.4	418.7	463.8
Real estate	408.5	431.4	458.2
Private equity	165.2	200.8	237.6
Short-term investments	128.6	169.0	192.1
	$ 3,559.2	**$ 4,296.1**	**$ 4,285.7**

The asset values reflected above fluctuate from year-to-year, both in aggregate and by asset class, based on the combination of factors such as investment performance, liquidations within certain asset classes, and rebalancing of assets within the overall portfolio.

Investment performance. For fiscal year 2018, the Plan's total investment portfolio generated a negative 5.7 percent return net-of fees, compared to a negative 3.9 percent of the policy benchmark. 2018 returns were below the 15.1 percent return net-of-fees generated in 2017. Hedge fund performance was above its benchmark, while domestic equity, international equity, fixed income, and real estate all fell short of its respective benchmarks for the year. Per asset class, fixed income generated negative 0.1 percent return net-of-fees compared to the Barclays Aggregate Bond Index of 0.0 percent. International equity generated negative 16.8 percent return net-of-fees compared to negative 14.2 percent for the MSCI ACWI ex US. Hedged equity generated negative 5.9 percent net-of- fees compared to negative 9.4 percent of HFRX Equity Hedge Index. Domestic equity generated negative 8.5 percent net-of-fees compared to negative 5.3 percent for Wilshire 5000 Total Market Index. Lastly, real estate generated a 5.8 percent return net-of-fees compared to 6.7 percent for the NCREIF Property Index.

Liquidations within certain asset classes. Liquidations are due to the large operating cash flow deficits that the Plan faces as a result of the shortfall between inflows, in the form of contributions, and outflows, primarily comprised of retirement benefits and refunds required to pay by law**.** In total, MEABF had to liquidate approximately $523.5 million of investments to meet the Plan's cash flow needs for 2018. Liquidity came mainly from liquid assets; domestic equity, international equity and fixed income.

Rebalancing of assets within the overall portfolio. In 2018, MEABF added 2% Infrastructure asset class to the target asset allocation. The Plan reduced its Fixed Income allocation from 27% to 25%. The regular sale of assets to meet the Plan's cash flow needs was done in accordance with aligning the Plan's investment portfolio with its target allocation.

Additions and Deductions to Fiduciary Net Position (in millions)
(Years ended December 31, 2018, 2017 and 2016)

	2018	2017	2016
Additions:			
Employer contributions	$ 349.6	$ 261.7	$ 157.4
Member contributions	138.4	134.8	130.4
Total contributions	488.0	396.5	287.8
Net investment income (loss)	(206.1)	609.0	279.5
Net security lending income (loss)	1.1	1.5	1.9
Other additions (OPEB termination)	-	5.4	-
Total additions	**283.0**	**1,012.4**	**569.2**
Deductions:			
Annuity benefits	878.7	842.6	813.1
Disability benefits	10.4	11.7	12.0
Healthcare subsidy	-	-	7.7
Refunds of contributions	27.1	33.8	34.6
Administrative expense	6.6	6.5	7.0
Total deductions	**922.8**	**894.6**	**874.4**
Net increase (decrease)	**(639.8)**	**117.8**	**(305.2)**
Fiduciary net position restricted for pensions beginning of year	**4,554.0**	**4,436.2**	**4,741.4**
Fiduciary net position restricted for pensions end of year	**$ 3,914.2**	**$ 4,554.0**	**$ 4,436.2**

Additions

Total additions as reported in the Statements of Changes in Fiduciary Net Position decreased by $729.4 million or 72.0 percent in 2018 to $283.0 million from $1,012.4 million in 2017.

Additions from employer contributions increased by $87.9 million to $349.6 million in 2018 from $261.7 million in 2017. The increase is mainly due to the amendment of Public Act 100-0023 (new funding structure) that was put into law during 2017 that requires the employer to remit $344.0 million in 2019 for 2018 contributions and $266.0 million in 2018 for 2017 contributions. The total increase consists of $78.0 million from the new funding structure and $9.9 million from adjustments of the allowance for reserve and receivable accounts. For financial reporting purposes both the net contribution receivable and net employer contributions reflects the required amount and adjustments. Additions from member contributions increased by $3.6 million to $138.4 million in 2018, from $134.8 million in 2017. The net increase is the result of a $3.2 million increase in contributions from City of Chicago members, $2.3 million increase in contributions from Board of Education members and a $1.9 million decrease primarily from the reduction of purchases of permissive services in 2018. Detail regarding active member contribution requirement can be found in note 7 Pension and Other Postemployment Benefit.

Additions from investment income decreased by negative $815.1 million in 2018 to negative $206.1 million in 2018 from $609.0 million in 2017. The decrease was mainly due to the down investment markets that caused the investment portfolio to generate a negative 5.7 percent in 2018 compared to 15.1 percent in 2017. Other contributing factors were:

- Decrease in net appreciation on investments by negative $813.0 million to negative $290.9 million in 2018 compared to $522.1 million in 2017.
- Decrease in income from investments by $4.2 million to $102.1 million in 2018 compared to $106.3 million in 2017.
- Decrease in direct investment fees by $2.0 million to $17.3 million in 2018 from $19.3 million in 2017.

Decrease of other additions of $5.4 million is the result of the Plan eliminating its OPEB liability from prior years. As of January 1, 2017 the Plan has discontinued OPEB for the Plan's retired employees.

MEABF can earn additional investment income by allowing a third party provider to lend a portion of its securities to borrowers on its behalf. The borrower provides collateral on borrowed securities, which is invested in order to earn interest. Securities lending activities generated net income of $1.1 million in 2018 compared to $1.5 million in 2017.

Deductions

MEABF's assets are primarily used to pay annuity benefits, disability benefits, refunds of contributions and the costs of administering the Plan. Deductions from fiduciary net position increased by $28.2 million or 3.2 percent to $922.8 million in 2018 from $894.6 million in 2017. Benefits paid out exceed member and employer contributions by $516.8 million, $599.9 million, and $579.6 million in fiscal years 2018, 2017 and 2016, respectively. In order to supplement benefit payments, the Plan liquidated portfolio assets by approximately $523.5 million, $606.4 million, and $586.6 million in fiscal years 2018, 2017 and 2016, respectively.

Annuity benefits paid increased by $36.1 million or 4.3 percent to $878.7 million in 2018 from $842.6 million in 2017. The increase is primarily due to the compounded annual 3.0 percent adjustment for eligible annuitants and an increase in the number of retirees and beneficiaries receiving benefits. The average annual employee annuity benefit increased to $39,564 in 2018 from $38,376 in 2017. The number of new employee annuitants decreased in 2018 to 1,351 from 1,449 in 2017. There were 25,577 retirees and beneficiaries at year-end December 31, 2018 compared to 25,383 at the beginning of the year.

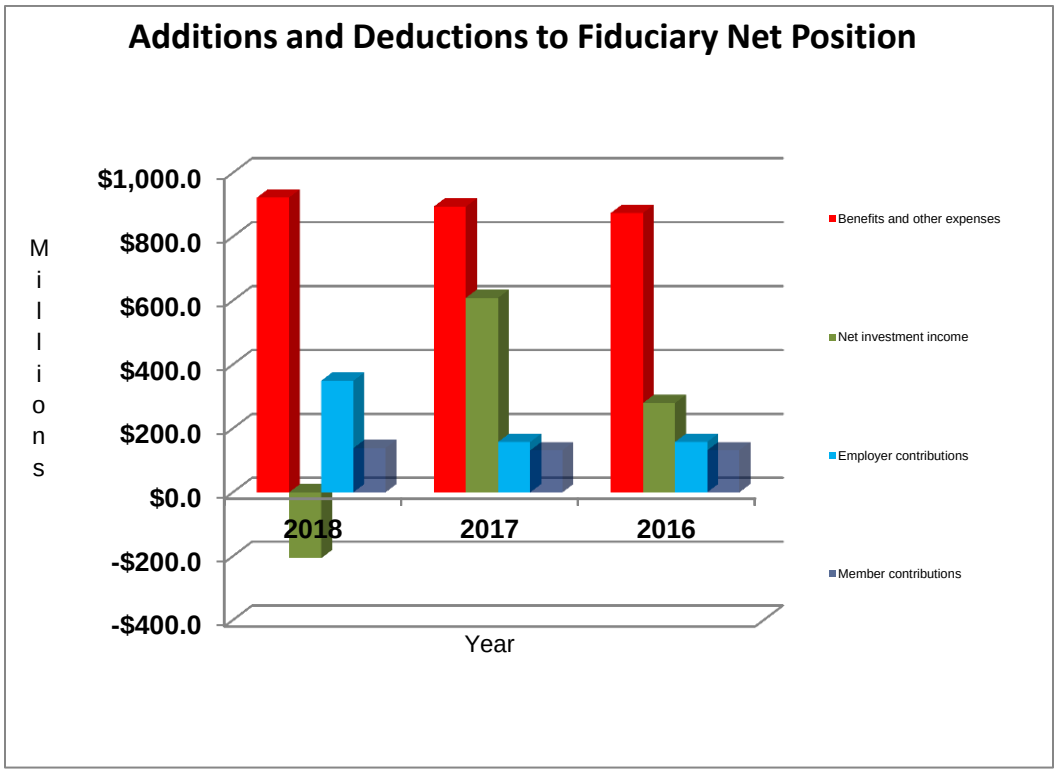
Disability benefits paid decreased by $1.3 million or 11.1 percent to $10.4 million in 2018 from $11.7 million paid in 2017. This net decrease is attributable to a decrease in the number of participants receiving disability. There were 322 participants on disability at year-end December 31, 2018 compared to 373 at the beginning of the year.

Refunds of contributions decreased by $6.7 million to $27.1 million in 2018 from $33.8 million in 2017. The net decrease is due to:

- Decrease in refund of spousal contributions. Refund of spousal contributions totaling $8.9 million were refunded in 2018 compared to $9.2 million refunded in 2017, a decrease of $0.3 million.

- Decrease in all other refunds of contributions distributed to employees not eligible for annuities. Other refunds of contributions decreased by $6.4 million to $18.2 million in 2018 from $24.6 million in 2017.

Administrative expenses expense increased slightly by $0.1 million to $6.6 million in 2018 from $6.5 million in 2017. Detail relating to administrative expenses can be found in the Schedule of Administrative located under Supporting Schedules.



Total Pension Liability (TPL) and Net Pension Liability (NPL)

The total pension liability (TPL) determines the total obligation for the Plan's pension benefits related to costs incurred as a result of years of service, changes in benefit terms, changes in actuarial assumptions, and any differences between the actuarial assumptions and actual experience. The Plan's fiduciary net position (FNP) determines the assets available for future pension payment stream. Analogous to the unfunded actuarial accrued liability, Net Pension Liability (NPL) is the Total Pension Liability (TPL), net of the Plan's Fiduciary Net Position (FNP).

At December 31, 2018, the components of the net pension liability of the employer were as follows (in millions):

Total pension liability	$16,808.6
Plan fiduciary net position	3,914.2
Employer's net pension liability	$12,894.4
Plan fiduciary net position as a percentage of the total pension liability	23.29%

Funding Status

The Plan, since inception, has been funded by utilizing a static multiple of employee contributions. This structure has led to significant underfunding of the Plan which continues to reduce assets as benefits paid far exceed contributions received.

Over the last few years, attempts to change the funding mechanism for the Plan to ensure the long-term solvency have been declared unconstitutional due to changes made to the existing benefit structure. On July 6, 2017 a new funding structure was included in Public Act 100-0023 to increase employer contributions from the City of Chicago.

Public Act 100-0023 requires contributions from the City of Chicago to be equal to $266 million in payment year 2018; $344 million in payment year 2019; $421 million in payment year 2020; $499 million in payment year 2021, and $576 million in payment year 2022. For payment year 2023 through 2058, the City of Chicago is required to make contributions on an actuarial calculated funding plan that is projected to bring the Fund to 90% funding by 2058.

Request for Information

Additional information is available on our website www.meabf.org or by request. Please direct your request to Mr. Jim Mohler, Executive Director, Municipal Employees' Annuity and Benefit Fund of Chicago, 321 N. Clark Street, Suite 700, Chicago, IL 60654.

Statements of Fiduciary Net Position

December 31, 2018 and 2017

	2018	2017
ASSETS		
Cash and cash equivalents	$ 499,871	$ 492,001
Receivables		
Contributions from City of Chicago, net of allowance for loss of $5,809,000 in 2018 and $13,285,086 in 2017	348,621,245	260,306,200
Member contributions	8,743,313	10,973,768
Interests and dividends	12,702,046	12,121,538
Due from broker	8,968,833	18,482,922
Miscellaneous	737,379	819,751
Total receivables	379,772,816	302,704,179
Investments, at fair value		
Fixed income	899,456,519	986,491,904
Hedged equity	394,406,436	418,747,415
Domestic and international equity	1,562,977,877	2,089,697,774
Real estate	408,489,873	431,421,604
Private equity	165,224,281	200,760,945
Short-Term investments	128,644,859	169,027,392
Total investments	3,559,199,845	4,296,147,034
Invested securities lending collateral	121,892,297	243,632,186
Property and equipment, net of accumulated depreciation and amortization of $15,887 in 2018 and $20,039 in 2017	150,143	30,500
Total assets	4,061,514,972	4,843,005,900
LIABILITIES		
Due to Broker	19,296,299	38,450,544
Accounts payable and accrued expenses	6,145,900	6,904,883
Securities lending collateral	121,892,297	243,632,186
Total liabilities	147,334,496	288,987,613
Net position restricted for pension benefits	$ 3,914,180,476	$ 4,554,018,287

The accompanying notes are an integral part of the financial statements

Statements of Changes in Fiduciary Net Position

Years ended December 31, 2018 and 2017

	2018	2017
ADDITIONS		
Contributions from the City of Chicago	$ 349,574,257	$ 261,763,635
Member contributions	138,399,727	134,764,920
Total contributions	487,973,984	396,528,555
Investment Income		
Net appreciation in fair value of investments	(290,889,323)	522,085,114
Interest	33,821,594	38,782,075
Dividends	49,355,634	49,218,319
Income from real estate investments	18,951,056	18,290,585
	(188,761,039)	628,376,093
Less: investment expenses	17,307,390	19,341,002
Net income from investing activities	(206,068,429)	609,035,091
Security lending activities		
Securities lending income	3,907,931	3,732,703
Borrower rebates	(2,719,103)	(2,124,012)
Bank fees	(95,101)	(128,686)
Net income from securities lending activities	1,093,727	1,480,005
Other additions - OPEB termination	-	5,393,581
Total additions	282,999,282	1,012,437,232
DEDUCTIONS		
Benefits		
Annuity benefits	878,738,782	842,632,392
Disability benefits	10,415,725	11,711,092
Total benefits	889,154,507	854,343,484
Refunds of member contributions	27,043,978	33,830,051
Administrative expenses	6,638,608	6,473,006
Total deductions	922,837,093	894,646,541
Net increase (decrease)	(639,837,811)	117,790,691
Net position restricted for pension benefits		
Beginning of year	4,554,018,287	4,436,227,596
End of year	$ 3,914,180,476	$ 4,554,018,287

The accompanying notes are an integral part of the financial statements

Note 1 – Summary of Significant Accounting Policies

Reporting Entity

As defined by generally accepted accounting principles established by the Governmental Accounting Standards Board (GASB), the financial reporting entity consists of a primary government, as well as its component units, which are legally separate organizations for which the elected officials of the primary government are financially accountable. Financial accountability is defined as:

(1) Appointment of a voting majority of the component unit's board and either a) the ability to impose will by the primary government, or b) the possibility that the component unit will provide a financial benefit to or impose a financial burden on the primary government; or

(2) Fiscal dependency on the primary government.

Based upon the required criteria, the Plan has no component units. The Plan is considered a component unit fund of the City of Chicago and, as such, is included in the City of Chicago's financial statements as a pension trust fund. Accordingly, these financial statements present only Municipal Employees' Annuity & Benefit Fund of Chicago ("MEABF") and are not intended to present fairly the financial position of the City of Chicago and the result of its operations in conformity with generally accepted accounting principles.

Basis of Accounting

The financial statements are prepared using the accrual basis of accounting. Employee and employer contributions are recognized in the period when due, pursuant to formal commitments as well as statutory or contractual requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

Use of Estimates

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts and fiduciary net position at the date of the financial statements and the actuarial information included in the required supplementary information as of the valuation date, the changes in fiduciary net position during the reporting period and, when applicable, disclosures of the contingent assets and liabilities at the date of the financial statements. Actual results may differ from those estimates.

Risks and Uncertainties

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

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand and on deposit with the Treasurer of the City of Chicago as well as investments held by the City Treasurer on behalf of the Plan with original maturities of less than 90 days.

Note 1 – Summary of Significant Accounting Policies (continued)

Investments

The Plan is authorized to invest in bonds, notes, and other obligations of the U.S. Government; corporate debentures and obligations; insured mortgage notes and loans; common and preferred stocks; stock options; real estate; and other investment vehicles as set forth in the Illinois Compiled Statutes. Income on all investments is recognized on the accrual basis. Gains and losses on sales and exchanges of investments are recognized on the transaction date of such sale or exchange. Dividend income is recognized based on dividends declared.

Investments are reported at fair value. 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. Fair values of marketable securities are based primarily on quotations from national security exchanges. Investments in short-term obligations are carried at cost which approximates fair value. Certain short-term obligations, such as United States Treasury Bills and discount paper, are carried at fair value. Fair values for bonds, stocks, forward contracts, future contracts, rights and warrants are determined by quoted market prices. Fair values of hedged equity investments are determined using quoted market prices of underlying funds, when available. If quoted market prices are not available, then fair value is determined by underlying fund managers. Fair values of real estate and commingled real estate are based upon independent appraisals. Fair values of private equity investments are primarily based on the general partner determined fair value.

Administrative Expenses

Administrative expenses are budgeted and approved by MEABF's Board of Trustees. Funding for these expenses is included in the employer contributions as mandated in the Illinois State Statutes Chapter 40, Pension Article 5/8-190.

Income Taxes

The Plan is exempt from federal and state income taxes and has received a favorable determination letter under Code section 401(a).

Recently Issued Accounting Pronouncements

GASB Statement No. 84, *Fiduciary Activities,* was established to enhance the consistency and comparability of fiduciary activity reporting by state and local governments. This Statement also is intended to improve the usefulness of fiduciary activity information primarily for assessing the accountability of governments in their roles as fiduciaries. MEABF is currently evaluating the financial statement impact of GASB Statement No. 84. If applicable, this statement will be implemented for the year ended December 31, 2019.

GASB Statement No. 87, *Leases* was established 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.

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

Note 2 – Investment Policies, Asset Allocation and Money-Weighted Rate of Return

Investment Policy

The Plan's policy in regard to the allocation of invested assets is established and may be amended by the Board. It is the policy of the Board to pursue an investment strategy that reduces risk through prudent diversification of the portfolio across a broad selection of distinct asset classes. The Plan's investment policy discourages the use of cash equivalents, except to meet liquidity needs, and aims to refrain from dramatically shifting asset class allocations over the short term.

The following table represents the Board's adopted asset allocation policy as of December 31, 2018 and 2017.

Asset Class	2018 Target	2017 Target
Fixed income	25%	27%
Domestic equity	26%	26%
International equity	22%	22%
Hedge Funds	10%	10%
Private equity	5%	5%
Real Estate	10%	10%
Infrastructure	2%	0%
	100%	100%

Money-Weighted Rate of Return

For the years ended December 31, 2018 and 2017, the annual money-weighted rate of return on Plan investments, net of investment expense, was negative 5.2 percent and 14.9 percent, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Note 3 – Deposits and Investments

Deposits that are held locally in the Plan's name are held by the Treasurer of the City of Chicago, ex-officio Treasurer of the Plan. At December 31, 2018 and 2017, the Plan's book balances of cash are $499,871 and $492,001, respectively. The actual bank balances at December 31, 2018 and 2017 are $499,471 and $491,601, respectively. All non-investment related bank balances at year end are insured or collateralized at 102% of the principal amount.

Custodial credit risk is the risk that, in the event of a financial institution failure, the Plan will not be able to recover deposits or collateral securities that are in possession of an outside party. Deposits are exposed to custodial credit risk if they are not covered by deposit insurance and are (a) uncollateralized, (b) collateralized with securities held by the pledging financial institution or (c) collateralized with securities held by the pledging financial institution's trust department or agent but not in the Plan's name. The Plan does not have a formal policy relating to custodial risk. As of December 31, 2018 and 2017, $6,341,834 and $6,209,425, respectively, of the Plan's deposits with its custodian Northern Trust were exposed to custodial credit risk.

Certain Plan investments are held by a bank administered trust fund. There were no individual investments representing 5% or more of the Plan's net position as of December 31, 2018 or 2017.

The Plan's investments are reported at fair value in the accompanying statement of fiduciary net position. The methods used to measure fair value may produce an amount that may not be indicative of net realizable value or reflective of future fair values.

Note 3 – Deposits and Investments (continued)

Furthermore, although the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Generally accepted accounting principles provides the framework for measuring fair value. That framework provides 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 as follows:

Level 1: Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Plan has the ability to access.

Level 2: Inputs to the valuation methodology include:

- quoted prices for similar assets or liabilities in active markets;
- quoted prices for identical or similar assets or liabilities in inactive markets;
- inputs other than quoted prices that are observable for the asset or liability;
- inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified (contractual) term, the Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3: Inputs to the valuation methodology are unobservable and significant to the fair market value measurement.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at December 31, 2018 and 2017.

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

Equity and equity derivative securities classified in Level 1 are valued using prices quoted in active markets for those securities.

Debt securities and short-term investment securities classified in Level 2 are valued using matrix pricing techniques maintained by the various pricing vendors. Matrix pricing is used to value securities based on the securities relationship to a benchmark's quoted price. Equity securities classified in Level 2 are securities with a theoretical price calculated by applying a standardized formula to derive a price from a related security.

Equity securities and other assets classified in Level 3 are valued with last trade data having limited trading volume.

The valuation method for certain fixed income and alternative investments is based on the investments' NAV per share (or its equivalent), provided by the investment managers. The NAV is based on the fair value of the underlying investments held by the fixed income and alternative investment less their liabilities. This practical expedient is not used when it is determined to be probable that the Plan will sell the investment for an amount different than the reported NAV.

Note 3 – Deposits and Investments (continued)

The following table summarizes the valuation of MEABF investments by the fair value hierarchy levels as of December 31, 2018.

		Fair Value Measurements Using		
Investment Measured at Fair Value	December 31, 2018	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Equity securities				
Common Stock	$1,554,678,266	$1,554,159,318	$ 191,409	$327,539
Preferred Stock	5,374,112	5,373,349	-	763
Stapled Securities	2,547,320	2,547,320	-	-
Rights/Warrants	49,533	48,497	47	989
Funds-Equities ETF	328,646	328,646	-	-
Total equity securities	1,562,977,877	1,562,457,130	191,456	329,291
Debt securities				
Government Bonds	112,917,707	-	112,917,707	-
Government Agencies	42,706,668	-	42,706,668	-
Municipal/Provincial Bonds	19,155,706	-	19,155,706	-
Corporate Bonds	360,767,963	-	360,767,585	378
Corporate Convertible Bonds	1,034,968	-	1,034,968	-
Bank Loans	171,816,776	-	171,816,776	-
Government Mortgage-Backed Securities	86,651,626	-	86,651,626	-
Gov't-issued Commercial Mortgage-Backed	5,369,146	-	5,369,146	-
Commercial Mortgage-Backed	5,591,577	-	5,591,577	-
Asset Backed Securities	25,240,353	-	25,240,353	-
Non-Government Backed CMO's	4,703,633	-	4,703,633	-
Index Linked Government Bonds	7,495,321	-	7,495,321	-
Total debt securities	843,451,444	-	843,451,066	378
Short-term investment securities				
Funds-short-term investment	128,644,859	-	128,619,598	25,261
Total short-term investment securities	128,644,859	-	128,619,598	25,261
Total investments measured by fair value level	2,535,074,180	$1,562,457,130	$972,262,120	$354,930
Investments measured at Net Asset Value (NAV)				
Commingled Fixed Income Funds	56,005,075			
Hedge Funds	394,406,436			
Private Equity Partnerships	165,224,281			
Real Estate	408,489,873			
Total investments measured at NAV	1,024,125,665			
Total investments measured at fair value	$3,559,199,845			
Collateral from securities lending	$ 121,892,297		$121,892,297	

Note 3 – Deposits and Investments (continued)

The following table summarizes the valuation of MEABF investments by the fair value hierarchy levels as of December 31, 2017.

		Fair Value Measurements Using		
Investment Measured at Fair Value	December 31, 2017	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Equity securities				
Common Stock	$2,080,744,579	$2,078,004,194	$ 2,368,331	$372,054
Preferred Stock	5,123,254	5,122,364	-	890
Stapled Securities	3,490,379	3,490,379	-	-
Rights/Warrants	27,742	23,053	4,591	98
Funds-Equities ETF	311,820	311,820	-	-
Total equity securities	2,089,697,774	2,086,951,810	2,372,922	373,042
Debt securities				
Government Bonds	133,739,757	-	133,739,757	-
Government Agencies	32,989,630	-	32,989,630	-
Municipal/Provincial Bonds	10,612,972	-	10,612,972	-
Corporate Bonds	407,988,476	-	407,988,098	378
Corporate Convertible Bonds	2,853,008	-	2,853,008	-
Bank Loans	184,424,093	-	184,424,093	-
Government Mortgage-Backed Securities	134,807,368	-	134,807,368	-
Commercial Mortgage-Backed	7,353,587	-	7,353,587	-
Asset Backed Securities	12,936,169	-	12,936,169	-
Non-Government Backed CMO's	7,179	-	7,179	-
Index Linked Government Bonds	2,714,757	-	2,714,757	-
Total debt securities	930,426,996	-	930,426,618	378
Short-term investment securities				
Short-term Bills & Notes	9,538,359	-	9,538,359	-
Funds-short-term investment	159,489,033	-	159,463,772	25,261
Total short-term investment securities	169,027,392	-	169,002,131	25,261
Total investments measured by fair value level	3,189,152,162	$2,086,951,810	$1,101,801,671	$398,681
Investments measured at Net Asset Value (NAV)				
Commingled Fixed Income Funds	56,064,908			
Hedge Funds	418,747,415			
Private Equity Partnerships	200,760,945			
Real Estate	431,421,604			
Total investments measured at NAV	1,106,994,872			
Total investments measured at fair value	$4,296,147,034			
Collateral from securities lending	$ 243,632,186		$ 243,632,186	

Note 3 – Deposits and Investments (continued)

Investments measured at NAV for fair value are not subject to level classification. The Plan's investments in certain entities that are measured at the NAV per share (or its equivalent) is presented on the following table.

Investments Measured at Net Asset Value (NAV)

	Fair Value December 31, 2018	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Commingled Fixed Income Funds	$ 56,005,075	$ -	Monthly	60 days
Hedge Funds	$394,406,436	$ -	Monthly, Quarterly	5, 7 or 90 days
Private Equity Funds	$165,224,281	$20,114,957	Not Eligible	N/A
Real Estate Funds	$408,489,873	$ -	Quarterly - Open-end, Not Eligible - Closed-end	30 days – Open-end

	Fair Value December 31, 2017	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Commingled Fixed Income Funds	$ 56,064,908	$ -	Quarterly	60 days
Hedge Funds	$418,747,415	$ -	Quarterly	90 days
Private Equity Funds	$200,760,945	$34,499,632	Not Eligible	N/A
Real Estate Funds	$431,421,604	$ 2,192,621	Quarterly - Open-end, Not Eligible - Closed-end	90 days - Open-end

Note 3 – Deposits and Investments (continued)

Commingled Fixed Income Funds

This type of investment consists of fixed income securities diversified in high yield, bank loans, and private debt securities.

Hedge Funds

This type of investment consists of long/short equity hedge fund-of-funds.

Private Equity Funds

This type of investment includes limited partnerships. Generally, the types of partnership strategies included in these portfolios are venture capital, buyouts, special situations, mezzanine, and distressed debt. Private equity partnerships have an approximate life of 10-15 years and are considered illiquid. Redemptions are restricted over the life of the partnership. During the life of the partnerships, distributions are received as underlying investments are realized. The Plan has no plans to liquidate the total portfolio.

Real Estate Funds

This type includes investments in open and closed-end real estate funds. Investments in open-end funds have limited redemption availability as redemption opportunities are based on available liquidity. Closed-end funds do not offer redemptions. Distributions from closed-end funds will be received as the underlying investments are liquidated. The Plan has no plans to liquidate the total portfolio.

Note 3 – Deposits and Investments (continued)

Foreign Currency Risk

Foreign currency risk is the risk that changes in currency exchange rates will adversely affect the fair value of an investment or a deposit. Forward currency contracts may be used to manage exposure to foreign currencies. The Plan has not adopted a formal policy related to foreign currency risk. The Plan's exposure to foreign currency risk at December 31, 2018 was as follows:

Currency	*Equities**	*Fixed Income*	*Short term Investments*	*Total*	*Percentage*
Australian Dollar	$ 28,154,272	$ -	$ 300,969	$ 28,455,241	4.1%
Brazilian Real	17,918,912	-	(48,906)	17,870,006	2.6%
British Pound Sterling	96,185,633	-	1,783,605	97,969,238	14.2%
Canadian Dollar	23,878,609	-	306,570	24,185,179	3.5%
Chilean Peso	581,485	-	96,607	678,092	0.1%
Colombian Peso	383,831	-	73,438	457,269	0.1%
Czech Koruna	459,971	-	5,970	465,941	0.1%
Danish Krone	12,661,459	-	536,787	13,198,246	1.9%
Egyptian Pound	37,518	-	8,727	46,245	0.0%
Euro	140,903,108	-	709,979	141,613,087	20.5%
HK offshore Chinese Yuan Renminbi	-	-	1,220	1,220	0.0%
Hong Kong Dollar	56,455,571	-	234,026	56,689,597	8.2%
Hungarian Forint	2,202,553	-	8,503	2,211,056	0.3%
Indian Rupee	30,468,514	-	97,067	30,565,581	4.4%
Indonesian Rupiah	5,772,804	-	92,063	5,864,867	0.9%
Japanese Yen	132,816,960	-	974,454	133,791,414	19.4%
Kenyan Shilling	301,025		-	301,025	0.1%
Malaysian Ringgit	2,668,410	-	93,095	2,761,505	0.4%
Mexican Peso	4,877,106	-	48,812	4,925,918	0.7%
New Israeli Shekel	4,454,817	-	131,922	4,586,739	0.7%
New Taiwan Dollar	14,080,400	-	235,067	14,315,467	2.1%
New Zealand Dollar	1,635,667	-	60,255	1,695,922	0.2%
Norwegian Krone	6,033,198	-	54,653	6,087,851	0.9%
Philippine Peso	1,720,015	-	39,443	1,759,458	0.3%
Polish Zloty	1,285,961	-	24,682	1,310,643	0.2%
Qatari Rial	406,394	-	9,910	416,304	0.1%
Russian Ruble	1,083,871	-	-	1,083,871	0.2%
Singapore Dollar	5,582,151	-	149,578	5,731,729	0.8%
South African Rand	10,385,927	-	40,562	10,426,489	1.5%
South Korean Won	15,252,038	-	148,241	15,400,279	2.2%
Swedish Krona	19,225,082	-	84,278	19,309,360	2.8%
Swiss Franc	35,204,837	-	970,930	36,175,767	5.2%
Thai Baht	7,831,598	-	(77,916)	7,753,682	1.1%
Turkish Lira	920,711	-	35,116	955,827	0.1%
United Arab Emirates Dirham	249,224	-	10,449	259,673	0.1%
Held in Foreign Currency	682,079,632	-	7,240,156	689,319,788	100.0%
Held in U.S Dollars	-	-	-	-	0.0%
Total	$682,079,632	$ -	$7,240,156	$689,319,788	100.0%

*Includes Forward contracts, rights and warrants.

Note 3 – Deposits and Investments (continued)

For comparative purposes, the Plan's exposure to foreign currency risk at December 31, 2017 was as follows:

Currency	*Equities**	*Fixed Income*	*Short term Investments*	*Total*	*Percentage*
Australian Dollar	$ 38,845,775	$ -	$ 834,010	$ 39,679,785	4.5%
Brazilian Real	14,297,835	-	200,437	14,498,272	1.6%
British Pound Sterling	128,274,268	-	678,684	128,952,952	14.5%
Canadian Dollar	25,199,605	-	307,639	25,507,244	2.9%
Chilean Peso	696,500	-	94,129	790,629	0.1%
Colombian Peso	159,074	-	74,977	234,051	0.0%
Czech Koruna	73,240	-	46,476	119,716	0.0%
Danish Krone	18,741,856	-	19,658	18,761,514	2.1%
Egyptian Pound	51,931	-	8,796	60,727	0.0%
Euro	185,693,725	-	744,002	186,437,727	21.0%
HK offshore Chinese Yuan Renminbi	-	-	1,287	1,287	0.0%
Hong Kong Dollar	70,691,089	-	147,466	70,838,555	8.0%
Hungarian Forint	1,234,571	-	4,820	1,239,391	0.1%
Indian Rupee	43,170,809	-	112,365	43,283,174	4.9%
Indonesian Rupiah	5,413,943	-	95,540	5,509,483	0.6%
Japanese Yen	183,316,391	-	2,924,460	186,240,851	21.0%
Kenyan Shilling	534,288		-	534,288	0.1%
Malaysian Ringgit	1,061,254	-	96,069	1,157,323	0.1%
Mexican Peso	2,718,212	-	19,602	2,737,814	0.3%
New Israeli Shekel	4,151,034	-	60,052	4,211,086	0.5%
New Taiwan Dollar	16,654,559	-	76,112	16,730,671	1.9%
New Zealand Dollar	1,952,989	-	38,056	1,991,045	0.2%
Norwegian Krone	7,470,135	-	60,475	7,530,610	0.8%
Philippine Peso	3,477,490	-	42,716	3,520,206	0.4%
Polish Zloty	1,117,183	-	15,095	1,132,278	0.1%
Qatari Rial	210,437	-	21,302	231,739	0.0%
Russian Ruble	961,927	-	-	961,927	0.1%
Singapore Dollar	6,026,333	-	61,742	6,088,075	0.7%
South African Rand	15,036,887	-	44,999	15,081,886	1.7%
South Korean Won	22,549,874	-	57,900	22,607,774	2.5%
Swedish Krona	21,413,171	-	239,076	21,652,247	2.4%
Swiss Franc	47,737,515	-	250,736	47,988,251	5.4%
Thai Baht	10,029,924	-	(66,788)	9,963,136	1.1%
Turkish Lira	2,351,889	-	31,887	2,383,776	0.3%
United Arab Emirates Dirham	403,695	-	47,464	451,159	0.1%
Held in Foreign Currency	881,719,408	-	7,391,241	889,110,649	100.0%
Held in U.S Dollars	-	-	-	-	0.0%
Total	$881,719,408	$ -	$7,391,241	$889,110,649	100.0%

*Includes Forward contracts, rights and warrants.

Note 3 – Deposits and Investments (continued)

Interest Rate Risk

As of December 31, 2018, the Plan had the following investments and maturities:

Investment Type	Total Fair Value	1 year or Less	1-6 yrs	6-10 Years	10 or more years	Maturity not Determined
Asset backed	$ 25,240,353	$ -	$ 18,080,909	$ 1,936,126	$ 5,223,318	$ -
Bank loans	171,816,776	1,356,942	118,616,342	51,843,492	-	-
Commercial mortgage backed	5,591,577	-	-	1,031,333	4,560,244	-
Corporate bonds	360,767,963	539,766	237,003,175	101,817,691	21,407,331	-
Corporate convertible bonds	1,034,968	-	-	1,034,968	-	-
Government agencies	42,706,668	4,054,422	25,989,984	12,662,262	-	-
Government bonds	112,917,707	5,507,215	35,786,646	43,439,884	28,183,962	-
Government mortgage backed	86,651,626	19,134	1,165,168	5,685,860	79,781,464	-
Government-issued commercial Mortgage-backed	5,369,146	-	5,369,146	-	-	-
Index linked government bonds	7,495,321	-	-	7,495,321	-	-
Municipal / provincial bonds	19,155,706	4,243,329	8,531,074	1,494,366	4,886,937	-
Non-government backed CMO's	4,703,633	-	-	-	4,703,633	-
Other fixed Income	56,005,075	-	-	-	-	56,005,075
Total	$899,456,519	$15,720,808	$450,542,444	$228,441,303	$148,746,889	$56,005,075

As of December 31, 2017, the Plan had the following investments and maturities:

Investment Type	Total Fair Value	1 year or Less	1-6 yrs	6-10 Years	10 or more years	Maturity not Determined
Asset backed	$ 12,936,169	$ -	$ 10,970,369	$ 1,959,826	$ 5,974	$ -
Bank loans	184,424,093	4,299,713	116,246,302	63,878,078	-	-
Commercial mortgage backed	7,353,587	-	-	-	7,353,587	-
Corporate bonds	407,988,476	7,042,037	227,206,085	132,061,862	41,678,492	-
Corporate convertible bonds	2,853,008	-	1,239,491	1,613,517	-	-
Government agencies	32,989,630	-	18,928,329	13,223,994	837,307	-
Government bonds	133,739,757	-	65,077,093	53,333,404	15,329,260	-
Government mortgage backed	134,807,368	18,728	2,090,071	3,365,256	117,827,454	11,505,859
Index linked government bonds	2,714,757	-	-	2,714,757	-	-
Municipal / provincial bonds	10,612,972	645,914	9,395,297	107,587	464,174	-
Non-government backed CMO's	7,179	-	-	-	7,179	-
Other fixed Income	56,064,908	-	-	-	-	56,064,908
Total	$986,491,904	$12,006,392	$451,153,037	$272,258,281	$183,503,427	$67,570,767

Note 3 - Deposits and Investments

Credit Risk

The following table reflects credit ratings of fixed income securities held by the Plan as of December 31, 2018:

S&P Credit Rating	Fair Value	Asset Backed Securities	Bank Loans	Comm'l Mortgage-Backed	Corporate Bonds	Corporate Convertible Bonds	Gov't Agencies	Gov't Bonds	Gov't Mortgage Backed	Gov't-issued Comm'l Mortgage-Backed	Linked Gov't Bonds	Municipal/ Provincial Bonds	Non-Gov't Backed CMO's	Other Fixed Income
US Govt.	$ 106,313,009	$ 639,181	$ -	$ -	$ -	$ -	$ 292,883	$ 92,516,478	$ -	$ 5,369,146	$ 7,495,321	$ -	$ -	$ -
AAA	18,103,560	10,238,241	-	291,786	3,220,926	-	-	-	-	-	-	4,352,607	-	-
AA	71,778,519	2,199,362	-	-	17,155,095	-	39,923,860	-	-	-	-	11,623,272	876,930	-
A	107,395,708	3,757,922	-	591,007	99,651,398	-	-	-	-	-	-	2,420,534	974,847	-
BBB	162,906,003	888,203	23,492,735	-	135,140,914	-	2,489,925	-	-	-	-	-	894,226	-
BB	111,597,772	648,916	50,644,246	-	59,753,845	-	-	-	-	-	-	-	550,765	-
B	89,551,653	-	54,313,293	-	35,238,360	-	-	-	-	-	-	-	-	-
CCC	18,094,770	285,082	13,157,795	-	4,651,893	-	-	-	-	-	-	-	-	-
CC	605,050	-	410,800	-	194,250	-	-	-	-	-	-	-	-	-
D	294,218	-	-	-	-	-	-	-	-	-	-	-	294,218	-
NR	212,816,257	6,583,446	29,797,907	4,708,784	5,761,282	1,034,968	-	20,401,229	86,651,626	-	-	759,293	1,112,647	56,005,075
Total	$ 899,456,519	$ 25,240,353	$ 171,816,776	$ 5,591,577	$ 360,767,963	$ 1,034,968	$ 42,706,668	$ 112,917,707	$ 86,651,626	$ 5,369,146	$ 7,495,321	$ 19,155,706	$ 4,703,633	$ 56,005,075

The following table reflects credit ratings of fixed income securities held by the Plan as of December 31, 2017:

S&P Credit Rating	Fair Value	Asset Backed Securities	Bank Loans	Comm'l Mortgage Backed	Corporate Bonds	Corporate Convertible Bonds	Gov't Agencies	Gov't Bonds	Gov't Mortgage Backed	Gov't-issued Comm'l Mortgage-Backed	Linked Gov't Bonds	Municipal/ Provincial Bonds	Non-Gov't Backed CMO's	Other Fixed Income
US Govt.	$ 268,368,700	$ -	$ -	$ -	$ -	$ -	$ 492,129	$ 131,975,392	$ 133,186,422	$ -	$ 2,714,757	$ -	$ -	$ -
AAA	12,727,803	5,847,731	-	-	2,939,750	-	628,071	-	-	-	-	3,312,251	-	-
AA	52,684,834	350,148	-	-	15,367,408	-	29,998,093	-	-	-	-	6,962,006	7,179	-
A	105,999,248	730,324	-	-	105,086,192	-	-	128,625	-	-	-	54,107	-	-
BBB	157,382,710	2,175,763	23,810,775	-	128,364,166	-	1,812,423	1,023,663	-	-	-	195,920	-	-
BB	129,504,801	-	46,727,704	-	82,777,097	-	-	-	-	-	-	-	-	-
B	114,384,661	-	57,703,115	-	56,148,365	533,181	-	-	-	-	-	-	-	-
CCC	16,522,427	-	6,446,099	-	9,452,962	623,366	-	-	-	-	-	-	-	-
CC	4,091,181	-	3,713,991	-	377,190	-	-	-	-	-	-	-	-	-
D	3,644,130	-	3,644,130	-	-	-	-	-	-	-	-	-	-	-
NR	121,181,409	3,832,203	42,378,279	7,353,587	7,475,346	1,696,461	58,914	612,077	1,620,946	-	-	88,688	-	56,064,908
Total	$ 986,491,904	$ 12,936,169	$ 184,424,093	$ 7,353,587	$ 407,988,476	$ 2,853,008	$ 32,989,630	$ 133,739,757	$ 134,807,368	$ -	$ 2,714,757	$ 10,612,972	$ 7,179	$ 56,064,908

US Govt = Guaranteed by US Government

NR = Not Rated

The Plan does not have a formal policy in regard to aggregate credit quality of fixed income holdings. The Plan utilizes external investment management firms to invest in fixed income securities and credi quality is addressed within the guidelines of the mandate. Unless allowed by the mutually agreed upon guidelines of the mandate, all securities invested in are investment grade. If a holding falls below investment grade, the manager will either sell the security or will inform the Plan of the lower rating and why they believe that it is prudent to continue to hold the security as they believe that the security will return to investment grade

Note 4 – Derivatives

The derivative instruments were recorded at fair value as of December 31, 2018 and 2017. Derivative instruments include forward foreign exchange contracts, futures contracts, rights and warrants. Derivative transactions involve, to varying degrees, credit 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 terms. Market risk is the possibility that a change in market prices or currency rates will cause the value of a financial instrument to decrease or become more costly to settle. The Plan's investment managers may invest in derivatives if permitted by the guidelines of their mandate.

Foreign Currency Forward Contracts

Foreign currency forward contracts are used by certain investment managers to protect against the currency risk in the Plan's international equity portfolios. A foreign currency forward contract is an agreement to buy or sell a specific amount of a foreign currency at a specified delivery or maturity date for an agreed-upon price. Foreign currency forward contracts are marked-to-market on a daily basis. The gains or losses resulting from changes in contract values are included in investment income in the Statement of Changes in Fiduciary Net Position. The Plan experienced a realized gain (loss) of $158,430 and $96,967 on foreign currency forward contracts in 2018 and 2017, respectively. As of December 31, 2018, the Plan's outstanding foreign currency forward contracts were as follows:

	Pending Foreign Exchange Purchases	Pending Foreign Exchange Sales	Unrealized Gain(Loss)	Change in Unrealized Gain(Loss)
Australian Dollar	$ 15,171	$ -	$ (392)	$ (725)
Brazil Real	63,945	-	(230)	(230)
British Pound Sterling	148,385	-	1,066	753
Canadian Dollar	65,196	-	(1,445)	(3,277)
Euro	169,454	(176,647)	888	(1,898)
Hong Kong Dollar	-	-	(87)	(87)
Japanese Yen	258,324	-	8,519	9,610
South African Rand	540,206	-	4,145	(936)
Swiss Franc	98,940	-	602	4,145
Thai Baht	46,999	-	(245)	(418)
United States Dollar	176,560	(1,393,712)	-	(1,549)
	$1,583,180	$(1,570,359)	$12,821	$ 5,388

Note 4 – Derivatives (continued)

For comparative purposes, as of December 31, 2017 the Plan's outstanding foreign currency forward contracts were as follows:

	Pending Foreign Exchange Purchases	Pending Foreign Exchange Sales	Unrealized Gain(Loss)	Change in Unrealized Gain(Loss)
Australian Dollar	$ 16,830	$	$ 333	$(1,130)
British Pound Sterling	339,503	(182,077)	313	1,834
Canadian Dollar	71,011	-	1,832	2,011
Euro	390,541	(212,850)	2,786	344
Hong Kong Dollar	-	-	-	-
Indonesian Rupiah	-	-	-	-
Japanese Yen	341,002	(89,946)	(1,091)	(1,100)
New Taiwan Dollar	-	(404,895)	936	913
South Korean Won	-	-	-	44
Swiss Franc	99,929	-	1,020	1,020
Thai Baht	407,577	-	1,304	1,304
United States Dollar	885,832	(1,655,024)	-	-
	$2,552,225	$(2,544,792)	$ 7,433	$ 5,240

Futures Contracts

Certain international investment managers utilize equity futures contracts to replicate underlying securities they wish to gain exposure to in the portfolio. A financial futures contract is an agreement to buy or sell a specific amount of an asset at a specified delivery or maturity date for an agreed-upon price. Futures contracts are traded on organized exchanges, thereby minimizing credit risk. The net change in the futures contract value is settled daily in cash with the exchanges which results in the contract having a fair value of zero at the end of each trading day. The cash or securities to fulfill these obligations are held in the investment portfolio. As the fair value of the futures contract varies from the original contract price, a gain or loss is paid to or received from the clearinghouse and recognized in the Statement of Changes in Fiduciary Net Position. The realized gain (loss) on equity futures contracts as of December 31, 2018 and 2017 was $(619,174) and $1,065,262, respectively.

As of December 31, 2018 and 2017, open futures contracts had the following values:

	2018 Notional Value	2017 Notional Value
Total Futures	$5,326,519	$5,307,458

Note 4 – Derivatives (continued)

Rights and Warrants

Rights and warrants provide investment managers the right, but not the obligation, to purchase or sell a company's stock at a fixed price until a specified expiration date. Rights are normally issued with common stock and expire after two to four weeks. Warrants typically are issued together with a bond or preferred stock and may not expire for several years. The fair value of rights and warrants is reported in the investments in the Statement of Fiduciary Net Position. The gain or loss from rights and warrants is included in the investment income in the Statement of Changes in Fiduciary Net Position. As of December 31, 2018, the Plan's investments in rights and warrants were as follows:

	Notional Value	Fair Value	Change in Fair Value
Total Rights and Warrants	$420,350	$49,534	$26,383

For comparative purposes, as of December 31, 2017, The Plan's investments in rights and warrants were as follows:

	Notional Value	Fair Value	Change in Fair Value
Total Rights and Warrants	$299,209	$27,742	$(4,149)

Note 5 – Securities Lending

Under the provisions of state statutes, the Plan utilizes a securities lending agent to lend securities (both equity and fixed income) to qualified third parties in exchange for collateral that will be returned for the same securities in the future. Citibank NA manages the securities lending program and receives cash, securities or irrevocable letters of credit as collateral. The collateral received cannot be pledged or sold by the Plan unless the borrower defaults. All loans can be terminated on demand by either the Plan or the borrower. At December 31, 2018 the average term of the loans was 92 days (75 days in 2017). Marking to market is performed every business day and the borrower is required to deliver additional collateral when necessary so that the collateral held for all loans to the borrower will at least equal the fair value of all borrowed securities. U.S. security loan agreements are initially collateralized at 102% of the fair value of loaned securities. International securities are initially collateralized at 105% of the fair value of loaned securities. Cash collateral is invested in tri-party repurchase agreements and bank deposits, which at December 31, 2018 had a weighted average maturity of 26 days (34 days in 2017). As of December 31, 2018 and 2017 the Plan had loaned to borrowers securities with a fair value of $125,768,078 and $237,867,337, respectively. As of December 31, 2018 and 2017, the Plan received from borrowers' cash collateral of $121,892,297 and $243,632,186, respectively. As of December 31, 2018 and 2017, the Plan received non-cash collateral from borrowers of $7,829,328, and $635,588 respectively.

Securities lending net income for the years ended December 31, 2018 and 2017 was $1,093,727 and $1,480,005, respectively.

Note 5 – Securities Lending (continued)

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

	2018	2017
Securities loaned – cash collateral		
Fixed income		
Domestic corporate fixed income	$ 19,409,613	$ 58,559,341
US Government agencies	12,046,062	-
US Government bonds	17,490,182	16,469,706
Equity		
Domestic equities	61,266,109	149,663,866
International equities	8,359,929	12,713,653
Total securities loaned – cash collateral	118,571,895	237,406,566
Securities loaned – non-cash collateral		
Equity		
Domestic equities	4,743,825	-
International equities	2,452,358	460,771
Total securities loaned – non-cash collateral	7,196,183	460,771
Total	$125,768,078	$237,867,337

Note 6 – Property and Equipment

Property and equipment are stated at cost. Depreciation has been provided using the straight-line method over periods ranging from 5-8 years. Leasehold improvements are amortized using the straight-line method over the remaining term of the lease. Major outlays for additions and improvements are capitalized if equal to or greater than $4,000. Maintenance and repairs are charged to expense. A summary of property and equipment at December 31, 2018 and 2017 is as follows:

	2018	2017
Pension benefit system	$119,499	$ -
Computers	25,848	39,306
Office equipment	20,683	11,233
	166,030	50,539
Less accumulated depreciation and amortization	15,887	20,039
Net property and equipment	$150,143	$30,500

Depreciation and amortization expense was $9,306 and $5,809 for 2018 and 2017, respectively.

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures

A. Pension Plan Description

General

Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF, or the Plan) is the administrator of a single employer defined benefit plan that was established in 1921 to provide retirement annuities and disability benefits for covered employees and for survivors and other beneficiaries of such employees. The Plan is administered under Chapter 40, Act 5, Article 8 of the Illinois Compiled Statutes. Benefit and contribution provisions are established by the Statutes and may be amended only by the Illinois state legislature. The Retirement Board, comprised of two ex-officio members (the City Comptroller and the City Treasurer) and three elected members, is authorized to carry out the provisions of Chapter 40, Act 5, Article 8 of the Illinois Compiled Statutes. The Retirement Board appoints the executive director, an actuary, an auditor, consultants and employees necessary for the transaction of business. The Retirement Board meets monthly and receives no compensation, but is reimbursed for necessary expenses. The Plan is included in the City of Chicago's financial reports as a component unit.

Membership

Any employee of the City of Chicago or the Board of Education employed under the provisions of the municipal personnel ordinance except for policemen, firemen, teachers, and those classified by the municipal personnel ordinance as labor service or any person employed by the Municipal Employees' Annuity and Benefit Fund of Chicago (Plan) who is not participating in any other pension fund or retirement system is also covered by the Plan. The payroll for employees covered by the Plan for the years ended December 31, 2018 and 2017 were $1,734,595,691 and $1,686,532,720, respectively.

Plan membership at December 31 is as follows:

	2018	2017
Active employees (includes members currently receiving disability benefits):		
Vested	14,678	15,320
Non-vested	16,607	15,602
	31,285	30,992
Retirees and beneficiaries currently receiving benefits	25,577	25,382
Retirees not currently receiving benefits	-	1
Terminated employees entitled to benefits but not yet receiving them	2,014	1,933
Terminated employees entitled to a refund of contributions	15,561	15,616
Total	74,437	73,854

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued)

Pension legislation (Public Act 96-0889) was approved during 2010 and established two distinct classes of membership with different retirement eligibility conditions and benefit provisions levels. On July 6, 2017 Illinois Public Act 100-0023 was enacted which added a third class of membership with different retirement eligibility conditions and contribution levels. For convenience, the Plan uses a tier concept to distinguish these groups, generally:

Tier 1 – Participants that became members before January 1, 2011.
Tier 2 – Participants that first became members on or after January 1, 2011.
Tier 3 – Participants that first became members on or after July 6, 2017; or a Tier 2 member who irrevocably elected between October 1 and November 15, 2017 to be subject to Tier 3 eligibility conditions and contribution levels ("Elective Tier 3 Member").

A member's classification is determined based upon the date the member becomes a contributing member in a designated reciprocal system/fund codified in the Illinois Pension Code.

Refunds of Employee Contributions

If an employee leaves covered employment without qualifying for an annuity, accumulated contributions are refunded with interest at 3% per annum, to the date of termination of services subject to certain exceptions. Certain disability pension credits are not refundable.

Employee Pension

Tier 1 employees age 55 or more with at least 10 years of service are entitled to receive a money purchase annuity with partial City contributions if under age 60 with less than 20 years of service. Employees age 60 or more with at least 10 years of service or age 55 or more with at least 20 years of service or age 50 or more with at least 30 years of service are entitled to receive a minimum formula annuity of 2.4% per year of service times the final average salary (highest (average or predominate, whichever is greater) annual salary for any 4 consecutive years within the last 10 years of service immediately preceding the date of retirement). If the employee retires prior to age 60, the annuity shall be reduced by ¼ of 1% for each month the employee is under age 60 if the employee has less than 25 years of service. The annuity is not discounted if the employee is age 50 with at least 30 years of service. An employee with at least 10, 20, or 30 years of service can withdraw and receive a minimum formula annuity at 60, 55, or 50, respectively. The original annuity is limited to 80% of the highest average annual salary, adjusted for annual Internal Revenue Code (IRC) §401(a) (17) and §415 limitations. Employees withdrawing from service at age 60 or older with at least 10 years of service are entitled to a minimum annuity of $850 per month.

Tier 2 employees age 67 or more with at least 10 years of service are entitled to receive an unreduced annuity benefit or a reduced annuity benefit at age 62 with 10 years of service. The annuity is discounted 1/2 percent for each full month the employee is under age 67. Final average salary is calculated using salary from the eight highest consecutive years within the last 10 years of service prior to retirement.

Tier 3 employees age 65 or more with at least 10 years of service are entitled to receive an unreduced annuity benefit or a reduced annuity benefit at age 60 with 10 years of service. The annuity is discounted 1/2 percent for each full month the employee is under age 65. Final average salary is calculated using salary from the eight highest consecutive years within the last 10 years of service prior to retirement.

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued)

Under Tier 2 and Tier 3 pensionable salary was limited to $113,645 in 2018 and $112,408 in 2017, increased each year by the lesser of 3 percent or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero). These figures are provided to the Plan by the Illinois Department of Insurance.

Automatic Increase in Employee Annuity

Tier 1: An employee annuitant under Tier 1 is eligible to receive an increase of 3.0 percent of the currently payable annuity (compound). This increase begins in January of the year of the first payment date following the earlier of:

1) the later of the third anniversary of retirement or age 53, or
2) the later of the first anniversary of retirement or age 60

Tier 2: An employee annuitant under Tier 2 who is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3.0 percent or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12 month period ending with the September preceding the increase. The increase is based on the amount of the originally granted benefit (simple). This increase begins in January of the year of the first payment date following the later of:

1) the attainment of age 67, or
2) the first anniversary of the annuity start date.

Tier 3: An employee annuitant under Tier 3 who is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3.0 percent or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12 month period ending with the September preceding the increase. The increase is based on the amount of the originally granted benefit (simple). This increase begins in January of the year of the first payment date following the later of:

1) the attainment of age 65,or
2) the first anniversary of the annuity start date.

Surviving Spouse Pension

Tier 1: Upon the death of an employee under Tier 1, the surviving spouse meeting certain eligibility requirements, is entitled to a spouse annuity. There are three basic methods (“money purchase method”, “minimum formula annuity method” and the “minimum annuity method”) used to determine the amount of spouse’s annuity for an ordinary death (not duty-related death). The surviving spouse is entitled to the largest benefit but the annuity cannot exceed an amount equal to 50% of the highest salary earned by the employee.

Under Tier 2 and Tier 3: The annuity payable to the surviving spouse of an employee is equal to 66 2/3% of the participant’s earned retirement annuity at the date of death without a reduction due to age.

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued)

Automatic Increase in Spouse Annuity

Under Tier 2 and Tier 3: The surviving spouse of an employee shall receive an annual increase equal to the lesser of 3.0 percent or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12 month period ending with the September preceding the date of the increase. This increase is based on the amount of the originally granted survivor's benefit (simple). This annual increase begins on January 1 following the commencement of the surviving spouse's annuity if the deceased member died while receiving an annuity benefit or on January 1 following the first anniversary of the commencement of the annuity otherwise.

Child Annuity

Under Tier 1, Tier 2 and Tier 3, an annuity is provided for any unmarried child of a deceased employee who is under the age of 18, if the child was conceived or born before withdrawal from service. The employee's death must occur while the employee is in service or in receipt of an annuity. The child's annuity is an amount equal to $220 a month when there is a surviving spouse and $250 when there is no surviving spouse, subject to maximum limitations.

Ordinary Disability

Under Tier 1, Tier 2 and Tier 3 an employee who becomes disabled as the result of any cause other than an accidental injury incurred while in the performance of an act of duty is entitled to an ordinary disability benefit at the amount equal to 50% of the employee's annual salary at the time of disablement. An employee can receive ordinary disability for a period equal to one fourth of his service credits up to a lifetime maximum of 5 years.

Duty Disability

Under Tier 1, Tier 2 and Tier 3, an employee who becomes disabled as the result of an accidental injury incurred while in the performance of an act of duty is entitled to a duty disability benefit in the amount equal to 75% of the employee's annual salary at the time of injury, reduced by any benefits received by the employee under the provisions of the Workers' Compensation Act. This benefit is limited to age 65 or 5 years from the latest injury, whichever is latest.

Funding Policy

The funding objective is to meet all expected future obligations to Plan participants through its Plan assets and contributions from employee and employer. Member and employer contribution rates are established by state law and may be amended only by the Illinois State Legislature.

Member Contributions

Active members are required to contribute a percentage of their pensionable salary to MEABF. Tier 1 and Tier 2 members contribute 8.5% of their salary (6.5% to provide employee annuity, 1.5% to provide a surviving spouse annuity and .5% to provide post-retirement increases in annuity) in accordance with the statutes. Tier 3 members contribute 11.5% of their pensionable salary (9.5% to provide employee annuity, 1.5% to provide a surviving spouse annuity and .5% to provide post-retirement increases in annuity) in accordance with the statutes.

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued)

Under Tier 1,Tier 2 and Tier 3 the employer deducts or picks up the employee's contributions before federal income tax is withheld and remits the contributions collected to the Plan. Member contributions earn interest at the rate of 3% per annum and may be refundable. Employees receiving ordinary or duty disability benefits are credited with a percentage of salary for pension purposes just as though the employee were working but these credits are not refundable. Tier 1 and Tier 2 are credited with 8.5% of salary and Tier 3 is credited with 11.5% of salary.

While the amount of pensionable salary upon which member contributions are made under Tier 1 has no limitation, pensionable salary of active employees under Tier 2 and Tier 3 was limited to $113,645 in 2018 and $112,408 in 2017, increased each year by the lesser of 3 percent or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12 month period ending with the September preceding the November 1, which is the date the new amount will be calculated and made available to the pension funds.

Employer Contributions

The City of Chicago is required by state statutes to contribute the remaining amounts necessary to finance the requirements of MEABF. Effective July 6, 2017 legislation (Public Act 100-0023) which included a new funding structure to increase employer contributions was put into law. The new structure provides for fixed dollar contributions for payment years 2018 through 2022. For payment years 2023 to 2058 the employer's required annual contribution shall be equal to the sum of the employer's portion of the projected normal cost for that fiscal year, plus an amount determined on a level percentage of employee payroll that is sufficient to bring the total actuarial assets of the Plan up to 90% of the total actuarial liabilities of the Plan by the end of 2058.

The actuarial determined contribution (ADC) is determined by using the entry age normal actuarial funding method. MEABF uses the level dollar open method to amortize the unfunded liability over a thirty year period. The actuarial valuation of the Plan shows that an actuarially determined contribution needed to adequately finance MEABF is $1,049,915,647 and $1,005,456,621 for fiscal years 2018 and 2017, respectively. The statutory employer contributions have been less than the actuarially determined contributions for the past sixteen years. Contribution rates may be increased only by an amendment by the State Legislature to the Illinois Pension Code.

Net Pension Liability of Participating Employer

The components of the net pension liability as of December 31, 2018 and 2017, were as follows:

	2018	2017
Total pension liability	$16,808,614,316	$16,282,396,195
Plan fiduciary net position	3,914,180,476	4,554,018,287
Employer's net pension liability	12,894,433,840	11,728,377,908
Plan fiduciary net position as a percentage of total pension liability	23.29%	27.97%

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued)

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of December 31, 2018 and 2017, using actuarial assumptions applied to all periods included in the measurement.

	2018	2017
Inflation	2.50%	2.50%
Salary increase	3.50% to - 7.75% (1.50% to 6.50% for 2019-2022), varying by years of service	3.50% to - 7.75% (1.50% to 6.50% for 2018-2022), varying by years of service
Investment rate of return	7.00%, net of investment expense	7.00%, net of investment expense
Municipal bond rate	4.10% based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of December 31, 2018	3.44% based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of December 31, 2017
Cost of living adjustments	Tier 1: 3.0% compound Tier 2 &3: the lesser of 3.0% or one-half the change in CPI, simple	Tier 1: 3.0% compound Tier 2 &3: the lesser of 3.0% or one-half the change in CPI, simple

Post-retirement mortality rates for December 31, 2018 and 2017 were based on the RP-2014 Healthy Annuitant Mortality Table, set forward two years for males and one year for females, and projected generationally using scale MP-2017. Pre-retirement mortality rates were based on 120% of the RP-2014 Employee Mortality Tables projected generationally using scale MP-2016.

The actuarial assumptions used in the December 31, 2018 and 2017, valuation were based on the results of actuarial experience study for the period January 1, 2012 through December 31, 2016.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2018 and 2017 are summarized in the following table:

	2018		2017	
	Target allocation	Long-term expected real rate of return	Target allocation	Long-term expected real rate of return
Fixed income	25%	0.8%	27%	1.0%
Domestic equity	26%	5.1%	26%	5.6%
International equity	22%	5.3%	22%	5.7%
Hedge Funds	10%	3.4%	10%	3.6%
Private equity	5%	8.3%	5%	9.4%
Real Estate	10%	4.7%	10%	5.4%
Infrastructure	2%	5.0%	0%	0.0%

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued

Discount rate

The discount rate used to measure the total pension liability was 7.0% for December 31, 2018 and 2017. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made according to the contribution rate applicable for each member's tier and that employer contributions will be made as specified by Public Act 100-0023. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service cost of future plan members and their beneficiaries are not included. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine total pension liability.

Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability as of December 31, 2018, calculated using the discount rate of 7.0%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.0%) or 1 percentage point higher (8.0%) than the current rate:

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Net pension liability December 31, 2018	$15,018,711,709	$12,894,433,840	$11,132,767,680

For comparative purposes, the net pension liability as of December 31, 2017, calculated using the discount rate of 7.0%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1 percentage point lower (6.0%) or 1 percentage point higher (8.0%) than the current rate:

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Net pension liability December 31, 2017	$13,807,800,455	$11,728,377,908	$10,006,089,666

B. Post-employment Healthcare Benefits – MEABF as Employer

The December 31, 2016 actuarial studies used in the preparation of the financial statements were prepared under the assumption that MEABF would continue to offer subsidized health insurance coverage. During 2016, the Board of Trustees voted to discontinue the health subsidy effective January 1, 2017. Consequently, the OPEB liability should have been eliminated at December 31, 2016 and revisions made to the actuarial studies. Since the amount of the OPEB liability was not material to the financial statements, MEABF elected not to revise the actuarial studies or eliminate the liability at December 31, 2016. The net OPEB obligation was eliminated in 2017.

Note 7 – Pension and Other Postemployment Benefit-Related Note Disclosures (continued

Annual OPEB Cost and Net OPEB Obligation – MEABF Staff Retiree Healthcare

The components of MEABF's annual OPEB cost for the staff retiree healthcare benefits are shown in the following table:

	2018	2017
Annual OPEB Cost		
Annual Required Contribution (ARC)	$ -	$ -
Interest on Net OPEB Obligation	-	242,711
Adjustment to ARC	-	(5,636,292)
Annual OPEB Cost	-	(5,393,581)
Employer Contributions	-	-
Increase (Decrease) in NOO	-	(5,393,581)
Net OPEB Obligations (NOO)		
Net OPEB Obligation at Beginning of Year	-	5,393,581
Increase (Decrease) in NOO	-	(5,393,581)
Net OPEB Obligation at End of Year	$ -	$ -

The elimination of the liability in 2017 is shown as "other additions – OPED termination" on the Statement of Changes in Fiduciary Net Position.

Note 8 – Net Position Held in Trust for Pension Benefits

Reserves represent the components of the Plan's net position. Reserves are established from member and employer contributions and the accumulation of investment income after satisfying investment and administrative expenses. At least once a year, before any transfer is made from these reserves, interest at 3% is credited to these reserves. The reserves do not represent the present value of assets needed, as determined by actuarial valuation, to satisfy retirement and other benefits as they become due. The Plan's major classes of reserves are as follows:

	2018	**2017**
City contribution Reserves	$ 1,898,758,145	$ 1,863,594,045
Salary Deduction Reserves	1,902,295,714	1,864,062,283
Prior Services Reserves	10,579,110,749	10,235,538,278
Annuity Payment Reserves	2,427,183,939	2,318,069,717
Optional Reserve Account	1,265,769	1,131,872
	16,808,614,316	16,282,396,195
Unreserved Net Deficit	(12,894,433,840)	(11,728,377,908)
	$ 3,914,180,476	$ 4,554,018,287

City Contribution Reserves

Amounts contributed by the City for age and service annuity, surviving spouse annuity and supplemental annuity shall be credited to this reserve. When the employee annuity or surviving spouse annuity is granted the amount in this reserve for such annuity will be transferred to the annuity payment fund reserves.

Salary Deduction Reserves

Amounts contributed by the employee or amounts credited for the employee for age and service annuity and surviving spouse annuity shall be credited to this reserve. When the employee annuity or surviving spouse annuity is granted the amount in this reserve for such annuity will be transferred to the annuity payment fund reserves.

Note 8 – Net Position Held in Trust for Pension Benefits (continued)

Annuity Payment Reserves

Amounts transferred from the City contribution reserves and the salary deduction reserves for annuities which have been granted will be credited to this reserve.

Prior Service Reserves

Amounts contributed by the City for minimum annuities shall be credited to this reserve.

Optional Reserves

Amounts contributed by the aldermen for the alternative plan.

Note 9 – Operating Leases

Office Lease

MEABF moved to a new office location on March 1, 2011 under a fifteen-year, non-cancelable lease agreement with Hines REIT 321 North Clark Street LLC. The lease currently requires monthly payments of $57,751 The Plan received rent abatements for the initial six full months of the term of the lease, and the initial three calendar months of the third, the fourth, the fifth and sixth lease year and the initial two calendar months of the seventh lease year. Monthly lease payments are subject to an escalation clause for increases in real estate taxes and maintenance expenses.

Following is a summary of estimated future lease payments under the Plan's operating lease as of December 31, 2018:

Year Ending December 31,	Amount
2019	$ 719,468
2020	701,676
2021	720,639
2022	739,926
2023	759,546
2024-February 2026	1,713,206
Total	$5,354,461

Total rent expense was $634,395 and $601,406 for 2018 and 2017, respectively.

Note 10 – Risk Management

MEABF carries liability insurance coverage provided by private insurance carriers. In order to limit the risk of asset loss from theft, fraud, robbery or burglary, the Plan carries a government crime policy. The Plan carries fiduciary liability insurance that limits the risk of loss arising from court challenges to fiduciary decisions. The Plan also carries cyber liability insurance that limits the risk of defense costs and settlements as a result of failure to protect or the wrongful release of confidential information of participants, beneficiaries and employees of the Plan.

Note 11 – Commitments and Contingencies

Investment Commitments

As of December 31, 2018 approximately $20.1 million of capital committed to investments in private equity were undrawn. As of December 31, 2017 approximately $36.7 million of capital committed to investments in real estate and private equity funds were undrawn. The Plan believes that the capital may take up to three years to be fully requested.

Litigation

The Plan is subject to claims arising in the ordinary course of its operations. Although the outcome of these lawsuits are not presently determinable, in the opinion of the Plan's management and legal counsel, the resolution of these matters will not have a material adverse effect on the Plan's financial statements.

In July 2013, a group of plaintiffs purporting to represent retirees in four Chicago public pension funds filed a civil action, *Underwood v. City of Chicago et. al.* (13- CH-17450; 1-17-162356), seeking class certification and an order requiring the City and the defendant pension funds to continue subsidizing retiree healthcare insurance premiums past the June 30, 2013, statutory expiration date. Following litigation filed in both the federal and state courts, the Illinois Appellate Court, on June 29, 2017, issued an order which in part affirmed the Circuit Court's dismissal order and held that the subsidies under the 1983 and 1985 amendments are protected benefits under the pension protection clause of the Illinois Constitution. As such, under the Appellate Court Mandate those employee-retirees that joined the defendant pension funds prior to April 4, 2003 are entitled to continue to receive the 1983 provided subsidies (as it relates to the police and fire funds) of $55 per month if non-Medicare-eligible and $21 per month if Medicare-eligible subsidies or $25 (as it relates to the municipal and laborer funds) if the employee-annuitant is 65 years or older with at least 25 years of service. The Appellate Court remanded the case back to the Circuit Court for the purpose of allowing the presiding judge to determine the mechanics of the payments. Thereafter, the Circuit Court issued several orders which in substance: (i) further defined the group of employee annuitants entitled to the statutory subsidies and (ii) reaffirmed prior rulings that the funds have no obligation to contract for insurance. The Circuit Court confirmed that under the 1983 and 1985 amendments, employee-retirees that are otherwise eligible to receive the subsidies must participate in a group retiree healthcare plan and facilitate the payment of the retiree's healthcare premium through a deduction of his or her monthly annuity check. The *Underwood* plaintiffs have again filed appeal in the Appellate Court in which they continue to assert a position concerning the funds' obligation to contract for insurance, in which the funds continue to defend that assertion citing to both the Appellate Court's decision and legislative enactments following the 1983 and 1985 legislation, as well as challenging certain rulings made by the Circuit Court in regard to those employee annuitants entitled to the statutory subsidies. The outcome is uncertain and this matter and related obligations are not reflected in the financial statements.

Note 12 – Deferred Compensation Plan

The Fund is a governmental eligible employer within the meaning of Code Section 457(e)(1)(A) and has established a deferred compensation plan (457(b)) for eligible employees. Individual contributions to the plan are equal to the amount of salary reductions elected by each participant for the year up to a maximum allowable by Internal Revenue Service regulations. Total employee contributions were $274,557 and $242,901 for 2018 and 2017, respectively. Employer contributions are not allowed.

Required Supplementary Information (Unaudited)

Schedule of Changes in Employer's Net Pension Liability

	2018	2017	2016	2015	2014
Total pension liability					
Service cost	$ 223,528,365	$ 572,533,631	$ 619,743,849	$ 226,816,035	$ 247,243,416
Interest	1,123,347,772	915,710,984	878,369,406	909,066,895	1,025,763,903
Change of benefit terms	-	-	-	2,140,009,339	(1,990,706,362)
Differences between expected and actual experience	95,540,469	(177,754,999)	(127,119,398)	(109,835,037)	(5,504,116)
Changes of assumptions	-	(7,431,191,282)	(578,920,424)	8,711,754,654	-
Benefit payments, including refunds of employee contributions	(916,198,485)	(888,173,535)	(859,671,662)	(826,036,323)	(798,622,811)
Net change in total pension liability	$ 526,218,121	$ (7,008,875,201)	$ (67,598,229)	$11,051,775,563	$ (1,521,825,970)
Total pension liability – beginning	16,282,396,195	23,291,271,396	23,358,869,625	12,307,094,062	13,828,920,032
Total pension liability – ending (a)	$16,808,614,316	$16,282,396,195	$23,291,271,396	$23,358,869,625	$12,307,094,062
Plan fiduciary net position					
Contributions – employer	$ 349,574,257	$ 261,763,635	$ 149,718,491	$ 149,225,191	$ 149,746,748
Contributions - employee	138,399,727	134,764,920	130,390,848	131,428,103	129,971,981
Net investment income (loss)	(204,974,702)	610,515,096	281,419,146	114,025,290	283,281,925
Benefit payments, including refunds of employee contributions	(916,198,485)	(888,173,535)	(859,671,662)	(826,036,323)	(798,622,811)
Administrative expenses	(6,638,608)	(6,473,006)	(7,056,784)	(6,701,000)	(6,567,842)
Other – OPEB termination	-	5,393,581	-	-	-
Net change in plan fiduciary net position	$ (639,837,811)	$ 117,790,691	$ (305,199,961)	$ (438,058,739)	$ (242,189,999)
Plan fiduciary net position - beginning	4,554,018,287	4,436,227,596	4,741,427,557	5,179,486,296	5,421,676,295
Plan fiduciary net position – ending (b)	3,914,180,476	4,554,018,287	4,436,227,596	4,741,427,557	5,179,486,296
Employer's net pension liability ending (a)-(b)	$12,894,433,840	$11,728,377,908	$18,855,043,800	$18,617,442,068	$ 7,127,607,766

This is a 10 year schedule however, the information is not required to be presented retroactively. Information will be added to this schedule until 10 years of information is available.

Schedule of Employer's Net Pension Liability

	2018	2017	2016	2015	2014
Total pension liability	$16,808,614,316	$16,282,396,195	$23,291,271,396	$23,358,869,625	$12,307,094,062
Plan fiduciary net position	3,914,180,476	4,554,018,287	4,436,227,596	4,741,427,557	5,179,486,296
Employer's net pension liability	12,894,433,840	11,728,377,908	18,855,043,800	18,617,442,068	7,127,607,766
Plan fiduciary net position as a percentage of total pension liability	23.29%	27.97%	19.05%	20.30%	42.09%
Covered payroll	$ 1,734,595,691	$ 1,686,532,720	$ 1,646,939,238	$ 1,643,480,973	$ 1,602,977,593
Employer's net pension liability as a percentage of covered payroll	743.37%	695.41%	1,144.85%	1,132.81%	444.65%

This is a 10 year schedule however, the information is not required to be presented retroactively. Information will be added to this schedule until 10 years of information is available.

Schedule of Employer contributions

Year Ended December 31,	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency	Covered Payroll	Contributions as a percentage Covered Payroll
2018	$1,049,915,647	$349,574,257	$700,341,390	$1,734,595,691	20.2%
2017	$1,005,456,621	$261,763,635	$743,692,986	$1,686,532,720	15.5%
2016	$ 961,769,955	$149,718,491	$812,051,464	$1,646,939,238	9.1%
2015	$ 677,200,246	$149,225,191	$527,975,055	$1,643,480,973	9.1%
2014	$ 839,038,303	$149,746,748	$689,291,555	$1,602,977,593	9.3%
2013	$ 820,022,689	$148,196,884	$671,825,505	$1,580,288,709	9.4%
2012	$ 690,822,553	$148,858,655	$541,963,898	$1,590,793,702	9.4%
2011	$ 611,755,567	$147,009,321	$464,746,246	$1,605,993,339	9.2%
2010	$ 483,948,339	$154,752,320	$329,196,019	$1,541,388,065	10.0%
2009	$ 413,508,622	$148,046,490	$265,462,132	$1,551,973,348	9.5%

Prior to 2014, the Actuarially Determined Contribution is the same as the Annual Required Contribution as determined under GASB 25

SCHEDULE OF INVESTMENT RETURNS

Year ended December 31	Annual Money-Weighted Rate of Return, net of investment expense
2018	(5.2%)
2017	14.9%
2016	6.1%
2015	2.1%
2014	4.8%

This is a 10 year schedule however, the information is not required to be presented retroactively. Information will be added to this schedule until 10 years of information is available.

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation date	December 31, 2018
Actuarial cost method	Entry-Age Normal
Amortization method	30 years open, level dollar amortization
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return	7.00%, net of investment expense
Projected salary increases	3.5% to 7.75% (1.5% to 6.5% for 2019-2022), varying by years of service
Inflation rate	2.50%
Cost of living adjustments	Tier 1: 3% compound Tier 2 & 3: The lesser of 3% or one-half of the change in CPI simple

Schedule of Administrative expenses

Years ended December 31, 2018 and 2017

	2018	2017
Personnel		
Administrative salaries	$ 3,238,970	$ 3,219,243
Payroll taxes	46,528	44,027
Employee benefits	1,293,849	1,267,710
	4,579,347	4,530,980
Professional Services		
Actuarial valuation and impact statements	82,728	84,090
Legal services	218,156	226,777
Medical	68,820	54,370
Audit	40,000	39,000
Legislative liaison services	18,480	18,248
Payroll services	419,266	422,785
IT consulting	19,175	21,797
Other consulting	46,690	6,620
	913,315	873,687
Communication		
Printing & publications	25,333	12,890
Postage	110,645	63,910
Telephone and communications	33,473	31,993
	169,451	108,793
Occupancy and utilities		
Office rent	634,395	601,406
Utilities	10,339	9,961
Office maintenance	386	1,318
	645,120	612,685
Other operating expense		
Fiduciary and insurance	226,097	224,461
Office supplies and equipment	34,301	47,156
Depreciation	9,306	5,809
Equipment rental and maintenance	9,369	10,064
Training and travel	10,032	10,889
Contractual services	23,043	22,500
Dues and subscriptions	16,250	15,664
Miscellaneous	2,977	10,318
	331,375	346,861
Total Administrative expenses	$ 6,638,608	$ 6,473,006

Schedule of Investment Management Compensation

Years ended December 31, 2018 and 2017

	2018	2017
Fixed Income Managers		
Crescent Capital Management	$ 390,638	$ -
Garcia Hamilton & Associates	44,106	-
LM Capital Group	297,949	316,304
MacKay Shields	599,282	709,406
NIS	41,785	-
Neuberger Berman	31,207	51,824
Segall Bryant & Hamill	223,810	195,007
Symphony Asset Management	767,014	794,086
UBS Global Asset Management	43,844	67,871
Total Fixed Income	2,439,635	2,134,498
Domestic Equity Managers		
Ariel Investments	471,862	498,510
Geneva Capital Management	-	269,772
Great Lakes Advisors	292,742	388,006
Holland Capital Management	-	40,058
Kayne Anderson	190,252	-
Keeley Asset Management	179,248	551,833
Nuveen	179,655	-
Rhumbline Advisers	98,120	86,136
Total Domestic Equity	1,411,879	1,834,315
International Equity Managers		
Cornerstone Capital Management	452,385	553,952
LSV Asset Management	645,614	708,879
Nothern Trust Company	129,358	168,786
Segall Bryant & Hamill	594,610	385,462
Walter Scott & Partners	681,756	833,103
William Blair	1,054,111	1,176,594
Total International Equity	3,557,834	3,826,776
Global Equity		
Attucks Asset Management	214,646	-
FIS Group	685,134	957,400
	899,780	957,400
Hedged Equity		
K2 Advisors	692,350	1,111,144
The Rock Creek Group	1,528,188	1,842,785
Parametric Defensive Equity	182,328	74,113
Neuberger Berman US PutWrite	151,909	50,973
Total Hedged Equity	$ 2,554,775	$ 3,079,015

Schedule of Investment Management Compensation (continued)

Years ended December 31, 2018 and 2017

	2018	2017
Real Estate Managers		
AFL-CIO Building Trust	$ 1,122,569	$ 1,028,049
American Realty	804,366	672,100
DV Urban	6,294	26,224
J P Morgan	1,230,510	1,132,961
Mesirow Real Estate	508,611	561,803
Tishman Speyer	33,025	55,232
UBS Realty Advisors	20,618	33,920
Walton Street Partners	26,048	61,002
Total Real Estate	3,752,041	3,571,291
Private Equity Managers		
Adams Street Partners	331,348	391,447
Carpenter Bancorp Fund	25,935	78,793
GoldPoint Partners	129,065	137,324
Hispania Partners	52,945	66,979
Hopewell Ventures	28,140	38,317
Levine Leichtman	237,616	388,766
MK Capital	44,352	57,970
Mesirow Financial	205,935	300,605
Midwest Mezzanine Fund	106,690	205,769
Morgan Stanley Secondary	-	58,007
Muller & Monroe	60,000	79,239
Nogales Investors	-	8,792
Prudential Capital Partners	-	335,353
RCP Advisors	-	20,763
Stepstone	66,636	80,158
TRG Management	33,400	43,018
Total Private Equity	1,322,062	2,291,300
Total Investment Management Fees	15,938,006	17,694,595
Other Investment Expenses		
Investment Consultant	290,000	290,000
Master Custodian	1,079,325	1,338,045
Investment Legal Services	59	18,362
Total Other Investment Expenses	1,369,384	1,646,407
Total Investment Expenses	$ 17,307,390	$ 19,341,002

Schedule of Professional and Consulting Costs

Years ended December 31, 2018 and 2017

	2018	2017
Legal Advisors	$ 218,156	$ 226,777
Medical Advisors	68,820	54,370
Consulting Actuary	82,728	84,090
Other Consulting	84,345	46,665
Auditor	40,000	39,000
Payroll Services	419,266	422,785
Total	$ 913,315	$ 873,687

Investment

This report includes the summary from the Investment Consultant regarding 2018 investment results; certification letter from the Plan's custodian for 2018; a summary of the Plan's investment goals, objectives, and guidelines; and informative investment schedules for your review. Data provided to the Plan by its custodian and its investment consultant form the basis for the information that is presented throughout the Investment Section. All portfolio rates of return are presented using a time-weighted rate of return methodology based on fair values. The figures in the Investment Section of the Comprehensive Annual Financial Report may marginally differ from those found in the Financial Section. This is due to a lag in reporting associated with certain classes of investments. The figures found in the Investment Section represent final figures for 2018.

MarquetteAssociates

May 30, 2019

The Board of Trustees
Municipal Employees' Annuity & Benefit Fund of Chicago
321 N. Clark Street, Suite 700
Chicago, IL 60654-4767

Dear Trustees:

Marquette Associates would like to provide a summary of the investment results for the Municipal Employees' Annuity & Benefit Fund of Chicago for the year ended December 31, 2018.

Interest rates increased and credit spreads widened over the year providing flat returns for investment grade fixed income with the Barclays Aggregate Bond Index up 0.01%, and underperformance from long duration and high yield bonds. U.S. Equities struggled for the year, with the S&P 500 returning -4.4% and the Russell 2000 returning -11.0%. Broad International equity markets (MSCI All Country World ex-U.S.) underperformed U.S markets, down 14.2% for the year. Emerging markets (MSCI Emerging Markets Index) performed generally in-line with developed markets, down 14.6% for the year. Private Real Estate was a bright spot in the markets, continuing solid performance in 2018, up 6.7%.

The Municipal Employees' Annuity & Benefit Fund of Chicago's investment assets totaled $3.56 billion at December 31, 2018. This represented a decrease of $733.47 million from December 31, 2017, of which -$203.52 million was due to investment gains, and -$529.95 million due to withdrawals for benefits and expenses.

The Total Fund returned -5.7% for calendar 2018, net of fees, underperforming the Policy Benchmark's return of -3.9%. The Fund ranked in the 85th percentile in the InvestorForce Public Defined Benefit Fund peer universe. The 5-year annualized return for the Fund was 4.5% versus 4.6% for the benchmark, ranking the Fund in the 53rd percentile.

Factors contributing to 2018 performance include:

- Fixed Income – Generally flat returns from the asset class, slightly underperforming the broad U.S fixed income market, due to negative returns of High Yield Bonds and manager underperformance.
- U.S. Equity – Negative returns in 2018, with large cap stocks significantly outperforming mid and small cap stocks, and growth significantly outperforming value for the year. MEABF's U.S Equity Composite underperformed its benchmark, mainly due to the Plan's policy overweight to small cap equities and manager underperformance.
- International Equity – MEABF's International Equity Composite underperformed for the year, due mainly to the overweight to small cap in the portfolio. Mixed active manager performance also detracted from portfolio level returns.
- Hedged Equity – The asset class provided negative returns for the year, as hedged equity underperformed other hedge fund strategies in 2018. PutWrite strategies outperformed hedged equity, and helped the MEABF hedge fund portfolio outperform its benchmark for the year,
- Real Estate – Both open-end and closed-end managers experienced steady income returns for the year, as real estate protected the MEABF portfolio in a negative year overall.
- Private Equity – The asset class was a contributor from MEABF's performance for the year, returning roughly 5.7%. Private holdings significantly outperformed public markets for 2018.

MEABF continues to invest in a well-diversified portfolio of assets to provide growth opportunities for Plan assets in the years to come. The Plan implements this diversified portfolio by using a combination of active and passive management. The Plan continues to have a strong focus on reducing investment management fees.

Sincerely,

Brian Wrubel
President & CEO

James R. Wesner, CFA
Managing Director

NORTHERN TRUST

To the Board of Trustees and the Executive Director:

The Northern Trust Company as custodian ("Master Custodian") of assets of the Municipal Employees' Annuity and Benefit Fund of Chicago ("Fund") held by it in a custodial account (the "Account") has provided annual Statements of Account for the Account to the Fund which to the best of its knowledge provide a complete and accurate reflection of The Northern Trust Company's record of the investments, receipts, disbursements, purchases and sales of securities and other transactions pertinent to the Account for the period January 1, 2018 through December 31, 2018.

In addition to the custody of assets in the Account, pursuant to and in accordance with the terms of the amended and restated Master Custody Agreement among the Board of Trustees of the Fund and The Northern Trust Company dated September 1, 2013 as amended (the "Custody Agreement"), The Northern Trust Company provided and continues to provide the following services as Master Custodian:

1. Receive and hold all amounts paid to the Account by the Board of Trustees.
2. Accept and deliver securities in connection with investment transactions in the Account in accordance with the instructions of appointed Investment Managers.
3. Collect dividends and registered interest payments.
4. Collect matured or called securities and coupons to the extent provided in the operating guidelines of The Northern Trust Company in effect from time to time.
5. Invest cash balances held from time to time in the individual investment management accounts of the Account in short term-cash equivalent securities.
6. Facilitate the exercising of rights of ownership, including but not limited to, proxy voting, stock subscriptions and conversion rights as directed by the Fund or its appointed investment managers.
7. Hold securities in the Account in the name of the Fund or nominee form or other means as provided in the Custody Agreement.
8. Use the Federal Book Entry Account System for deposit of Treasury securities and clearing corporations as defined in Article 8 of the Illinois Uniform Commercial Code for the deposit of securities.
9. Employ agents to the extent provided in the Custody Agreement.
10. Provide disbursement services.
11. Provide security fail float income to the extent provided in the operating guidelines of The Northern Trust Company in effect from time to time.

THE NORTHERN TRUST COMPANY

By: Anton J. Britton

Anton J. Britton
Senior Vice President

The Northern Trust Company

50 South La Salle Street
Chicago, Illinois 60603
312-630-6000

Investment Authority and Responsibility

The authority granted to the Retirement Board of the Municipal Employees' Annuity and Benefit Fund of Chicago (the "Board") related to investment decisions can be found in the Illinois Compiled Statutes, Chapter 40, Act 5, Section 8-201 and 8-201.1. Section 1-113 also defines investments deemed to be prudent. Any fiduciary with investment authority is required to discharge his or her duties with respect to the Plan with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character with like aims.

In order to clarify the roles and responsibilities of the Board and the various investment professionals engaged by the Board, the following responsibilities have been designated:

The Board, with the assistance of an Investment Consultant and Investment Staff, assume the responsibility for establishing goals, objectives and guidelines to direct the investment activity of the Plan.

The Board engages various managers to make investments in accordance with agreed-upon guidelines and applicable statutes. These managers, acting as fiduciaries, apply their professional judgment in making investment decisions. Managers are given full discretion within their assigned mandate to select, acquire, maintain and dispose of individual investments as authorized by contract.

Plan-level Investment Goals and Objectives

The Board sets the goals and objectives of the investment portfolio solely in the interest of the Plan, its participants and their beneficiaries. The performance objectives of the Plan are threefold:

- The Plan is to meet or exceed its actuarial return assumption of 7.0% on a net-of-fees basis over time with a level of risk deemed appropriate by the Board while maintaining liquidity sufficient to cover benefit payments and other obligations.

- The Plan is to outperform the risk-adjusted return, net-of-fees, of the Plan's policy benchmark.

- The Plan is to rank in at least the top half of the universe of comparable institutional investors with similar risk/return parameters consistently over time.

Investment Manager Goals, Objectives and Guidelines

The guidelines for a particular investment mandate are set at the time of hiring and are included in the contractual agreement between the Plan and the investment manager. The guidelines specify the types of the investments that can be made and contain certain constrains in order to limit risk. Given the investment guidelines, certain goals and objectives are set. Generally, they are as follows:

- Each investment manager is expected to outperform by a mutually agreed upon premium over the set benchmark on a risk-adjusted-basis over a market cycle (typically a three- to five-year period).

- The total net-of-fees return for the mandate should rank above the median within the respective peer universe.

- The investment manager shall attempt to achieve its return objectives while maintaining an appropriate level of risk as determined by the Board and/or as specified in the investment contract.

Risk Management

Risk management is essential to the Plan's mission and to the success of the Plan's investment program. Most investment decisions have a risk component that must be considered. When making investment decisions, the Board shall make a reasonable effort to consider all risks—liquidity risk, market risk, business risk, credit risk, currency risk, interest rate risk, inflationary risk, etc.— within the context of the Plan's overall portfolio. The Board, with assistance from staff and its investment consultant, shall, taking into account the Plan's ability and the Board's willingness to assume risk, determine an appropriate risk tolerance level for the Plan. Determining the risk tolerance level shall serve as the first step in crafting an appropriate target asset allocation, setting investment goals and objectives, and making other investment-related decisions.

Asset Allocation

The Plan's assets are diversified to minimize risk and to maximize risk adjusted returns. Diversification is accomplished by utilizing appropriate asset allocation targets. Upon advice from staff and the Plan's investment consultant, the Board shall adopt appropriate asset allocation targets. The target allocation mix includes the traditional domestic & international equity and fixed income investments as well as alternative investments such as hedged equity, private equity, and real estate. Proper diversification within each asset class is based on establishing complementary investment objectives and management styles. The Board, staff and investment consultant will review the asset allocation at least annually and consider changes as deemed prudent.

Cash Flow Needs & Portfolio Rebalancing

The extensive operating cash flow needs of the Plan require the liquidation of investment assets on a monthly basis. Liquidity will be primarily drawn from asset classes that exceed their respective allocation targets in an effort to move the Plan's overall asset allocation closer to target allocations.

Should the regular monthly liquidity events associated with benefit payments not be sufficient to keep the portfolio in line with the target allocations, the Plan's portfolio may need to be rebalanced by shifting assets from one asset class to another. In these instances, the investment consultant and staff will bring a rebalancing plan to the Board for its approval. Upon approval by the Board, the staff will work to transition the assets.

Investment Management Fee

The Plan has made conscious efforts to reduce overall investment management expenses to coincide with our liquidity risks and on-going battle with our funding status. Since 2013, invested assets have been reduced by 32.9% while fee reduction was 34%. Over the years, the Fund's investment management fees have reduced significantly while maintaining asset allocation targets and return/risk profiles.

Following factors have attributed to the Fund's success in reducing investment management fees:

- Consolidate over-diversification of managers while moving to passive management in more efficient markets.
- Partnership with existing managers with long relationship in an effort to reduce fees.
- Negotiate with potential investment manager candidates for a highly competitive fee structure.
- Leverage consultant relationship with investment managers to help negotiate and reduce fee structure.

The Board, staff and investment consultant understand the importance of fee reduction within the Plan and are having discussions with managers on a continuous basis.

Investment Managers*

As of December 31, 2018

Adams Street Partners
Chicago, Illinois
Private Equity Direct Partnerships
Private Equity Fund of Funds

American Realty Advisors
Glendale, California
Real Estate Core Fund

Ariel Investments
Chicago, Illinois
Domestic Equity Small/Mid Cap Value

Attucks Asset Management
Chicago, Illinois
Emerging Manager of Managers – Global Equity

Capri Capital Partners
Chicago, Illinois
Real Estate Partnership
Real Estate Mezzanine Fund

Carpenter & Company
Irvine, California
Private Equity Direct Partnership

Crescent Capital Group
Los Angeles, California
High Yield Fixed Income

First Analysis
Chicago, Illinois
Private Equity Direct Partnerships

Garcia Hamilton & Associates
Houston, Texas
Fixed Income Core

GoldPoint Partners
New York, New York
Private Equity Mezzanine Fund

Great Lakes Advisors
Chicago, Illinois
Domestic Equity Large Cap Value

Hispania Capital Partners
Chicago, Illinois
Private Equity Direct Partnership

Invesco Private Capital
New York, New York
Private Equity Fund of Funds

John Buck Company
Chicago, Illinois
Real Estate Partnerships

JP Morgan Asset Management
New York, New York
Real Estate Core Fund

K2 Advisors
Stamford, Connecticut
Hedged Equity Fund of Funds

Kayne, Anderson, Rudnick Investment Management
Los Angeles, California
Domestic Equity Small Cap Value

Levine Leichtman
Beverly Hills, California
Private Equity Mezzanine Funds

LM Capital
San Diego, California
Fixed Income Core

LSV Asset Management
Chicago, Illinois
International Equity Large Cap Value

MacKay Shields
New York, New York
Fixed Income High Yield
International Equity Large Cap

Mesirow Financial
Chicago, Illinois
Private Equity Direct Partnerships
Private Equity Funds of Funds
Real Estate Direct Partnership

Midwest Mezzanine Funds
Chicago, Illinois
Private Equity Mezzanine Funds

MK Capital
Chicago, Illinois
Private Equity Direct Partnership

Morgan Stanley
West Conshohocken, Pennsylvania
Private Equity Secondary Fund of Funds

Muller & Monroe Asset Management
Chicago, Illinois
Private Equity Funds of Funds

Neuberger Berman
Chicago, Illinois
Defensive Equity

Newport Capital Partners
Chicago, Illinois
Real Estate Partnership

NIS
Milwaukee, Wisconsin
Fixed Income Core

Nogales Investors Management
Los Angeles, California
Private Equity Direct Partnerships

Northern Trust Asset Management
Chicago, Illinois
International Equity All-World Ex-US Index
International Equity Small Cap Index

Nuveen
Chicago, Illinois
Domestic Equity Small Cap Value

Parametric
Minneapolis, MN
Defensive Equity

PNC Bank - AFL/CIO
Washington, D.C.
Real Estate Core Fund

Prudential Capital Partners
Chicago, Illinois
Private Equity Mezzanine Fund

RCP Advisors
Chicago, IL
Private Equity Secondary Fund of Funds

RhumbLine Advisors
Boston, Massachusetts
Domestic Equity Large Cap Core Index
Domestic Equity Mid Cap Growth Index

The Rock Creek Group
Washington, D.C.
Hedged Equity Fund of Funds

Segall Bryant & Hamill
Chicago, Illinois
Fixed Income Intermediate
Small-Cap International

StepStone Group
San Diego, California
Private Equity Fund of Funds

Symphony Asset Management
San Francisco, California
Fixed Income Senior Bank Loans

Tishman Speyer
New York, New York
Real Estate Partnership

TRG Management
New York, New York
International Private Equity Direct Partnership

UBS Realty Investors
Hartford, Connecticut
Real Estate Partnership

Walter Scott & Partners
Edinburgh, Scotland
International Equity Large Cap Growth

Walton Street Capital
Chicago, Illinois
Real Estate Partnerships

William Blair & Company
Chicago, Illinois
Emerging Markets Equity

Woodland Venture Management
Chicago, Illinois
Private Equity Direct Partnership

*List does not include legacy managers who have less than $1 million remaining balance.

Portfolio Performance

As of December 31, 2018

Performance Returns by Asset Class

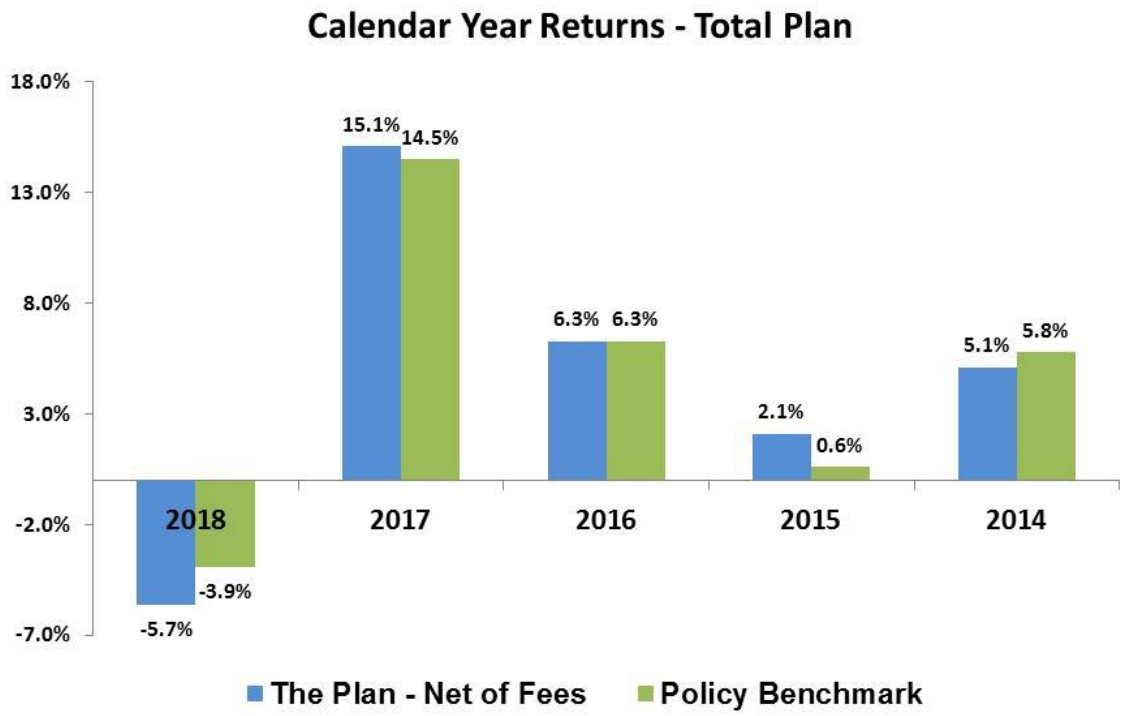
	Calendar Year Returns					Annualized Returns		
	2018	2017	2016	2015	2014	3 Yrs	5 Yrs	10 Yrs
Total Plan								
The Plan - Net of Fees	-5.7%	15.1%	6.3%	2.1%	5.1%	5.0%	4.5%	8.3%
Policy Benchmark	-3.9%	14.5%	6.3%	0.6%	5.8%	5.5%	4.6%	7.3%
Fixed Income								
The Plan	-0.1%	4.0%	6.5%	0.6%	4.3%	3.5%	3.0%	4.8%
Barclays Cap Aggregate Bond Index	0.0%	3.5%	2.6%	0.6%	6.0%	2.1%	2.5%	3.5%
Domestic Equity								
The Plan	-8.5%	19.8%	11.3%	-0.7%	8.6%	6.8%	5.6%	12.7%
S&P 500 Index	-4.4%	21.8%	12.0%	1.4%	13.7%	9.3%	8.5%	13.1%
Russell 2000 Index	-11.0%	14.6%	21.3%	-4.4%	4.9%	7.4%	4.4%	12.0%
International Equity								
The Plan	-16.8%	32.2%	2.6%	-1.1%	-2.9%	4.1%	1.6%	7.8%
MSCI ACWI ex U.S. Index	-14.2%	27.2%	4.5%	-5.7%	-3.9%	4.5%	0.7%	6.6%
Real Estate								
The Plan	5.8%	5.6%	6.7%	14.2%	11.7%	6.8%	9.2%	5.8%
NCREIF Property Index	6.7%	7.0%	8.0%	13.3%	11.8%	7.2%	9.3%	7.5%
Private Equity								
The Plan	5.7%	8.8%	12.8%	9.2%	13.9%	9.3%	10.1%	11.7%
Cambridge Associates Private Equity Index	10.5%	13.1%	9.7%	7.3%	11.2%	13.1%	11.6%	13.3%
Hedged Equity								
The Plan	-5.9%	10.7%	-1.1%	3.4%	5.4%	1.0%	2.4%	N/A
HFRX Equity Hedge Index	-9.4%	10.0%	0.1%	-2.3%	1.4%	-0.1%	-0.3%	1.4%

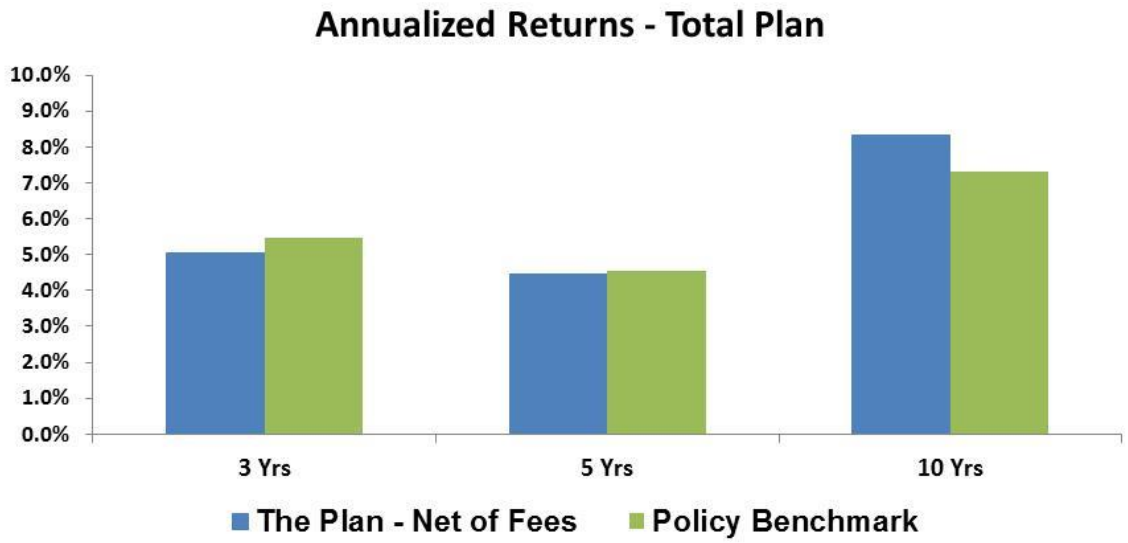
Returns are calculated using the time-weighted rate of return method.

Returns are presented net-of-fees.

Source: Marquette Associates, Investment Consultant

Portfolio Performance (Continued)



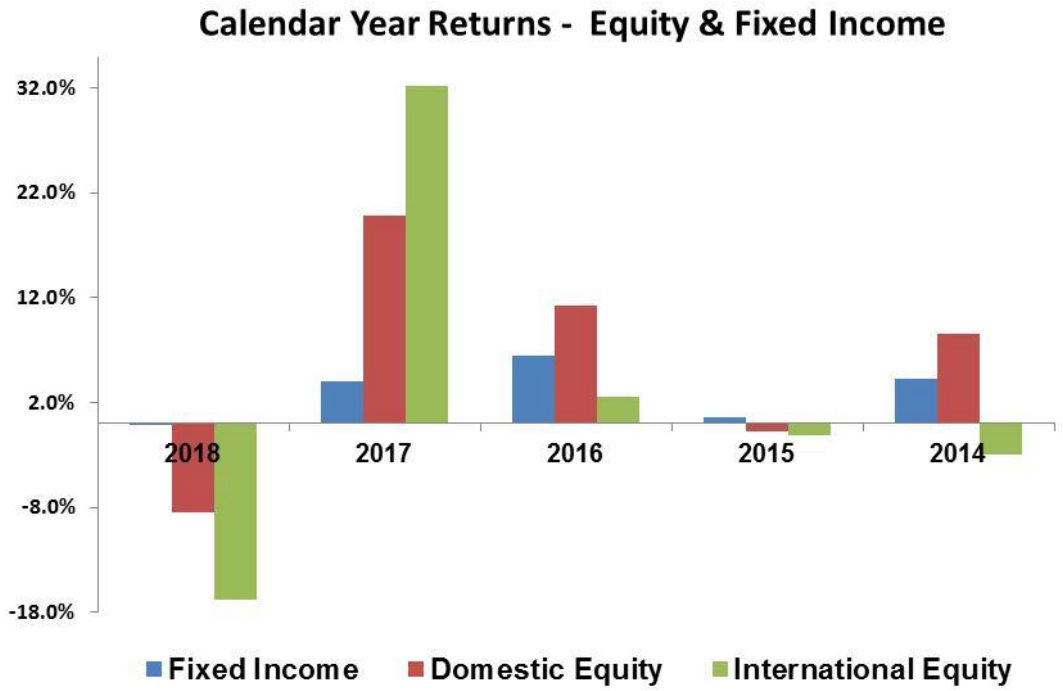


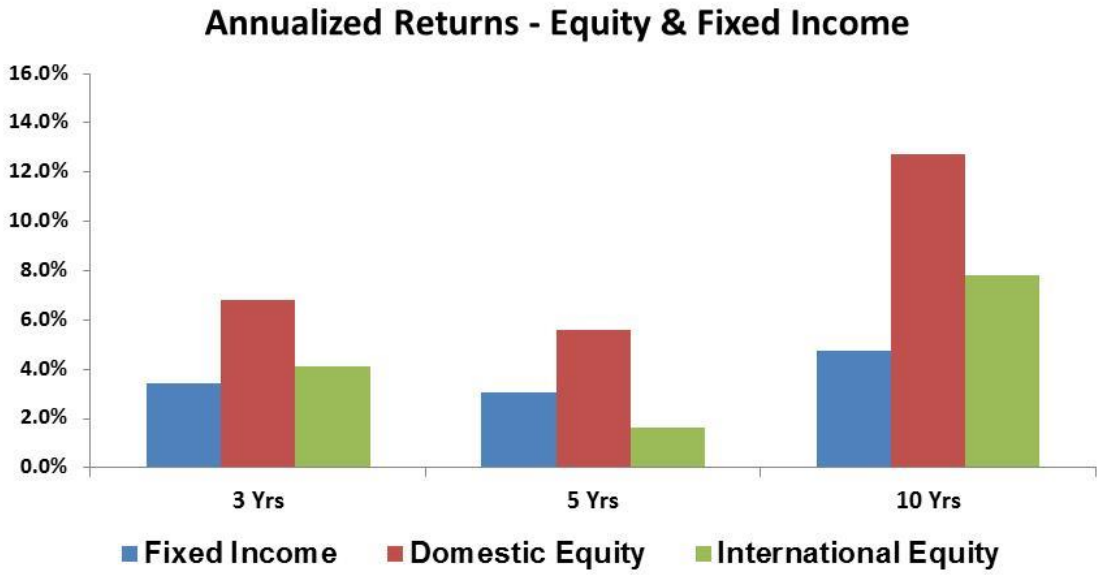
Returns are calculated using the time-weighted rate of return method.

Returns are presented net-of-fees.

Source: Marquette Associates, Investment Consultant

Portfolio Performance (Continued)





Returns are calculated using the time-weighted rate of return method.

Returns are presented net-of-fees.

Source: Marquette Associates, Investment Consultant

Portfolio Summary

As of December 31, 2018 and December 31, 2017

	As of December 31, 2018			As of December 31, 2017		
Asset Category	**Fair Value**	**Percent of Total**	**Target**	**Fair Value**	**Percent of Total**	**Target**
Fixed Income	$ 899,456,519	25%	25%	$ 986,491,904	23%	27%
Domestic Equity	880,898,245	25%	26%	1,207,978,366	28%	26%
International Equity	682,079,632	19%	22%	881,719,408	21%	22%
Hedged Equity	394,406,436	11%	10%	418,747,415	10%	10%
Real Estate	408,489,873	11%	10%	431,421,604	10%	10%
Infrastructure	-	0%	2%	-	0%	0%
Private Equity	165,224,281	5%	5%	200,760,945	5%	5%
Short-term*	128,644,859	4%	0%	169,027,392	4%	0%
Total Investments	**$ 3,559,199,845**	**100%**	**100%**	**$ 4,296,147,034**	**100%**	**100%**

Components may not sum to totals due to rounding.

**Short-term Investments include cash necessary to pay following month's benefits and residual cash balance of active investment managers.*

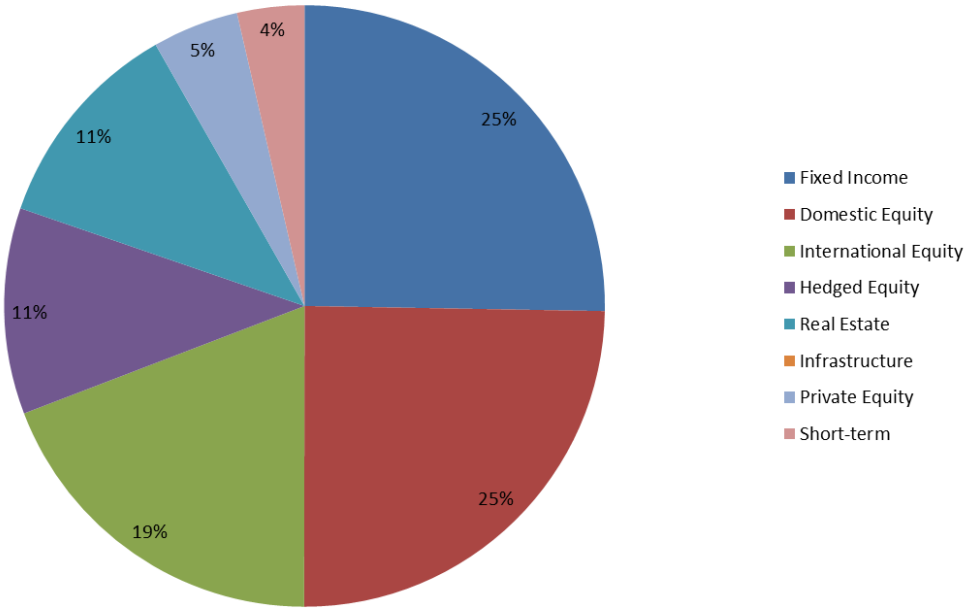
Source: Northern Trust Custody Statements

Portfolio Asset Allocation

As of December 31, 2018

Asset Class	Target Allocation	Actual Allocation
Fixed Income	25%	25%
Domestic Equity	26%	25%
International Equity	22%	19%
Hedged Equity	10%	11%
Real Estate	10%	11%
Infrastructure	2%	0%
Private Equity	5%	5%
Short-term	0%	4%
Total	**100%**	**100%**

Actual Asset Allocation as of December 31, 2018



Components may not sum to totals due to rounding.

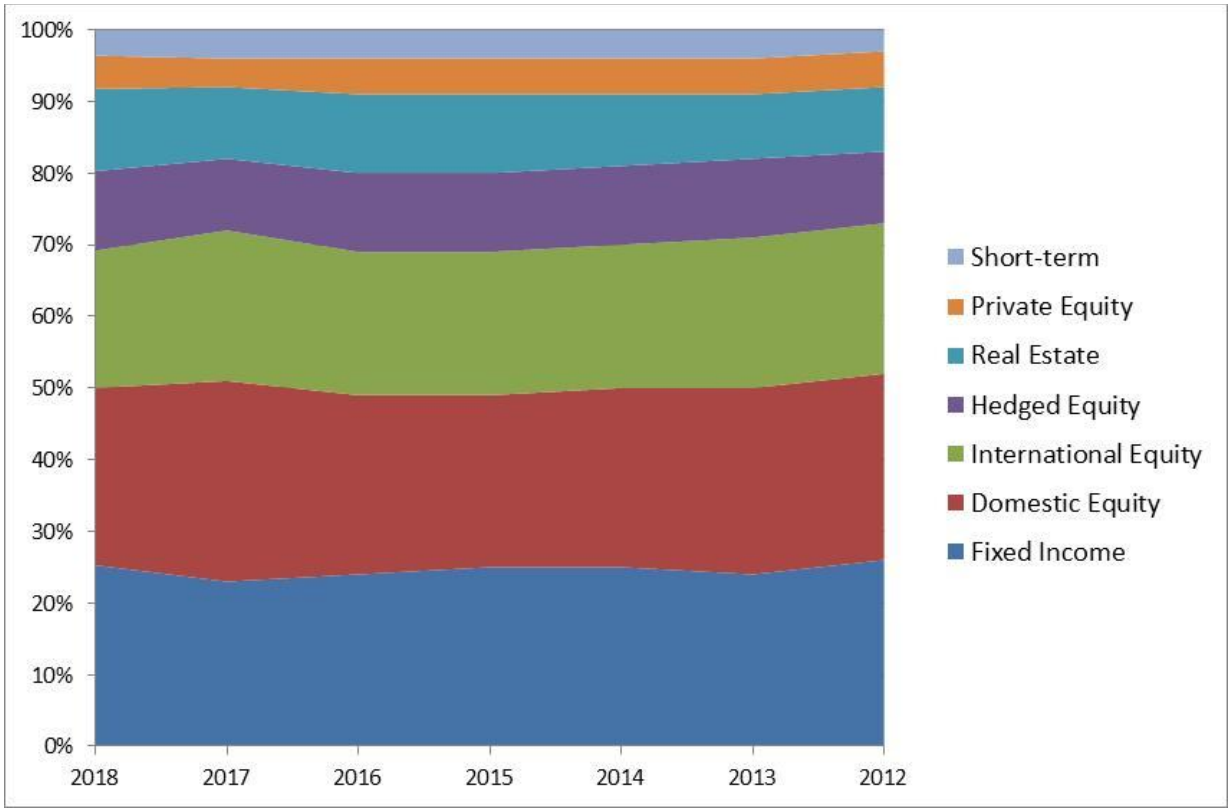
Source: Northern Trust Custody Statements

Portfolio Asset Allocation

Last Seven Years

Asset Class	2018	2017	2016	2015	2014	2013	2012
Fixed Income	25%	23%	24%	25%	25%	24%	26%
Domestic Equity	25%	28%	25%	24%	25%	26%	26%
International Equity	19%	21%	20%	20%	20%	21%	21%
Hedged Equity	11%	10%	11%	11%	11%	11%	10%
Real Estate	11%	10%	11%	11%	10%	9%	9%
Private Equity	5%	4%	5%	5%	5%	5%	5%
Short-term	4%	4%	4%	4%	4%	4%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Last Seven Years Asset Allocation



Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

Domestic Equity Portfolio Summary

As of December 31, 2018

Sector Allocation

Sector	Fair Value	% of Total	S&P 500
Information Technology	$ 163,903,658	18.61%	20.12%
Financials	137,416,230	15.60%	13.37%
Health Care	118,301,906	13.43%	15.53%
Industrials	103,417,335	11.74%	9.19%
Consumer Discretionary	98,774,735	11.21%	9.93%
Communication Services	73,527,830	8.35%	10.12%
Consumer Staples	50,700,702	5.76%	7.40%
Energy	41,819,487	4.75%	5.31%
Real Estate	40,235,679	4.57%	2.96%
Utilities	28,488,087	3.23%	3.34%
Materials	22,558,831	2.56%	2.73%
Miscellaneous/Unclassified	1,753,766	0.20%	0.00%
Total	**$ 880,898,245**	**100.00%**	**100.00%**

Top 10 Holdings

Name of Security	Sector	Shares		Fair Value	% of U.S. Equity
APPLE INC COM STK	Information Technology	108,828.00	$	17,166,529	1.9%
MICROSOFT CORP COM	Information Technology	161,386.00		16,391,976	1.9%
AMAZON COM INC COM	Consumer Discretionary	8,812.00		13,235,360	1.5%
BERKSHIRE HATHAWAY INC-CL B	Financials	54,486.00		11,124,951	1.3%
ALPHABET INC CAP STK USD0.001 CL C	Communication Services	8,990.00		9,310,134	1.1%
JOHNSON & JOHNSON COM USD1	Health Care	59,329.00		7,656,407	0.9%
FACEBOOK INC COM USD0.000006 CL 'A'	Communication Services	53,056.00		6,955,111	0.8%
JPMORGAN CHASE & CO COM	Financials	69,437.00		6,778,440	0.8%
ALPHABET INC CAPITAL STOCK USD0.001 CL A	Communication Services	6,243.00		6,523,685	0.7%
BANK OF AMERICA CORP	Financials	264,559.00		6,518,734	0.7%
Total		**795,126.00**	**$**	**101,661,327**	**11.5%**

Note: A complete listing of the portfolio holdings is available for review at the Plan office.

Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

International Equity Portfolio Summary

As of December 31, 2018

Country Allocation

Country	Fair Value	% of Total	MSCI ACWI ex US
Japan	$ 132,816,960	19.47%	16.61%
United Kingdom	94,493,229	13.85%	10.17%
Germany	41,230,598	6.04%	5.91%
China	39,154,354	5.74%	6.80%
France	37,503,829	5.50%	7.32%
Switzerland	35,276,616	5.17%	6.17%
India	30,468,514	4.47%	2.44%
Australia	28,103,652	4.12%	4.78%
Canada	23,902,322	3.50%	6.45%
Sweden	19,243,920	2.82%	1.67%
Brazil	18,030,819	2.64%	1.94%
Spain	16,878,275	2.47%	2.07%
Hong Kong	15,324,762	2.25%	3.63%
Korea, Republic Of	15,252,038	2.24%	3.58%
Netherlands	14,600,290	2.14%	3.19%
Taiwan	14,080,400	2.06%	2.97%
Italy	12,822,189	1.88%	1.33%
Denmark	12,656,212	1.86%	1.18%
South Africa	10,385,927	1.52%	1.60%
Thailand	7,831,598	1.15%	0.63%
Norway	5,988,745	0.88%	0.49%
Indonesia	5,772,804	0.85%	0.60%
Singapore	5,654,211	0.83%	0.92%
Finland	5,409,432	0.79%	0.84%
Mexico	4,877,106	0.72%	0.74%
Israel	4,435,144	0.65%	0.36%
Belgium	4,209,420	0.62%	0.64%
Austria	3,387,035	0.50%	0.16%
Ireland	2,935,339	0.43%	0.46%
Malaysia	2,668,410	0.39%	0.63%
Russian Federation	2,524,332	0.37%	0.96%
Hungary	2,202,553	0.32%	0.09%
United States	1,911,982	0.28%	0.08%
Philippines	1,720,015	0.25%	0.29%
New Zealand	1,635,667	0.24%	0.16%
Portugal	1,347,725	0.20%	0.11%
Poland	1,285,961	0.19%	0.33%
Remaining Countries	4,057,245	0.59%	1.70%
Total	**$ 682,079,632**	100.00%	100.00%

Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

International Equity Portfolio Summary (Continued)

As of December 31, 2018

Top 10 Holdings

Name of Security		Country	Sector	Shares	Fair Value	% of Int'l Equity
TENCENT HLDGS LIMITED COMMON STOCK		China	Communication Services	258,810	$ 10,379,705	1.52%
TAIWAN SEMICONDUCTOR MANUFACTURING ADS		Taiwan	Information Technology	204,510	7,548,464	1.11%
ADR ALIBABA GROUP HOLDING LTD SPONSORED ADS		China	Consumer Discretionary	54,544	7,476,346	1.10%
ROCHE HLDGS AG GENUSSCHEINE NPV		Switzerland	Health Care	26,658	6,582,022	0.96%
HOUSING DEVEL FIN INR2		India	Financials	195,806	5,520,515	0.81%
SAMSUNG ELECTRONIC KRW100		Korea, Republic Of	Information Technology	156,513	5,428,440	0.80%
PING AN INSURANCE GROUP H	CNY1	China	Financials	550,650	4,863,424	0.71%
TAIWAN SEMICON MAN TWD10		Taiwan	Information Technology	622,474	4,566,740	0.67%
EXPERIAN ORD USD0.10		United Kingdom	Industrials	187,420	4,547,200	0.67%
NOVO-NORDISK AS DKK0.2 SERIES'B'		Denmark	Health Care	96,052	4,383,289	0.64%
Total				**2,353,437**	**$ 61,296,143**	**8.99%**

Note: A complete listing of the portfolio holdings is available for review at the Plan office.

Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

Fixed Income Portfolio Summary

As of December 31, 2018

Sector Allocation

Sector	Fair Value	% of Total	Barclay Agg
Corporate Bonds	$ 360,767,963	40.11%	24.47%
Bank Loans	171,816,776	19.10%	0.00%
Government Bonds	112,917,706	12.55%	38.82%
Government Mortgage Backed Securities	86,651,626	9.63%	28.32%
Other Fixed Income	56,005,075	6.23%	3.32%
Government Agencies	43,105,601	4.79%	2.79%
Asset Backed Securities	24,841,420	2.76%	0.49%
Municipal/Provincial Bonds	19,155,706	2.13%	0.00%
Index Linked Government Bonds	7,495,321	0.83%	0.00%
Commercial Mortgage-Backed	5,591,577	0.62%	1.79%
Gov't-issued Commercial Mortgage-Backed	5,369,146	0.60%	0.00%
Non-Government Backed C.M.O.s	4,703,633	0.52%	0.00%
Corporate Convertible Bonds	1,034,968	0.12%	0.00%
Total	**$ 899,456,519**	**100.00%**	**100.00%**

Top 10 Holdings

Name of Security	Sub Asset Class	Fair Value	% of Fixed Income
UNITED STATES TREAS DTD 02/15/2015 2% DUE 02-15-2025 REG	Government Bonds	$ 8,084,735	0.90%
UNITED STATES OF AMER TREAS BONDS DTD 05/15/2016 2.5% DUE 05-15-2046 REG	Government Bonds	7,548,367	0.84%
FNMA FANNIE MAE 2.125 04-24-2026	Government Agencies	7,362,848	0.82%
UNITED STATES TREAS NTS WI TREASURY N/B 1.5% DUE 03-15-2020 REG	Government Bonds	7,169,003	0.80%
UNITED STATES OF AMER TREAS BD 2.375% 5-15-2027	Government Bonds	5,497,439	0.61%
UNITED STATES TREAS NTS DTD 08/15/2015 2% DUE 08-15-2025 REG	Government Bonds	5,302,347	0.59%
UNITED STATES TREAS BDS DTD 08/15/1993 6.25% DUE 08-15-2023 REG	Government Bonds	5,227,034	0.58%
FEDERAL HOME LN MTG CORP POOL #G16299 3.5% 04-01-2032 BEO	Government MBS	5,159,760	0.57%
FEDERAL HOME LN BKS FLTG RATE 12-18-2020 REG	Government Agencies	4,967,416	0.55%
UNITED STATES OF AMER TREAS NOTES NTS 0.125% INFL INDEX 07-15-2026	Index Linked Government Bonds	4,951,802	0.55%
Total		**$ 61,270,750**	**6.81%**

Note: A complete listing of the portfolio holdings is available for review at the Plan office.

Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

Domestic Equity Brokerage Commissions

As of December 31, 2018

Broker Name	Commissions	Shares
Loop Capital Markets*	$ 109,420	4,805,780
Penserra Securities*	33,429	2,473,283
Drexel Hamilton*	32,657	939,572
Williams Capital Group*	27,417	2,348,440
Pershing	16,807	3,361,309
Itg Inc.	12,927	2,341,015
Instinet	12,615	862,549
Pavilion Global Markets	11,350	2,270,025
Cabrera Capital*	10,708	567,677
CastleOak Securities*	9,016	293,661
Academy Securities*	8,512	374,816
C.L King & Associates*	5,697	143,138
Jefferies	5,658	327,763
Capital Institutional Services*	4,888	122,210
Stifel, Nicolaus & Co.	4,129	110,810
Credit Suisse Securities	3,836	359,302
Cowen & Co.	3,074	81,694
Siebert Cisneros Shank & Co.*	2,949	134,568
Mischler Financial Group*	2,786	135,377
Morgan Stanley	2,617	64,928
UBS Securities	1,652	220,322
Robert W. Baird & Co.	1,608	50,369
RBC Capital Markets	1,236	35,065
Percival Financial Partners	1,134	32,400
Liquidnet	1,069	100,920
Blaylock Robert Van*	908	25,950
Sanford C. Bernstein & Co.	883	117,306
Sandler O'Neill & Partners	754	19,195
BTIG LLC	752	82,752
Raymond James & Associates	673	16,238
Keefe Bruyette	667	19,493
MKM Partners	665	17,504
Keybanc Capital MARKETS	619	23,624
William Blair & Co.	585	16,440
Dougherty & Co.	568	18,925
Seaport Group Securities	550	18,332
Virtu Americas	515	34,350
Strategas Securities	510	14,407
Other Brokers	3,090	148,739
Total	**$ 338,930**	**23,130,248**

** Women, minority, or disabled-owned brokerage firm.*

Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

International Equity Brokerage Commissions

As of December 31, 2018

Broker Name	Commissions	Shares
UBS Limited	$ 68,221	19,647,385
CLSA	64,328	12,030,404
Bank of America	59,022	8,394,112
Goldman Sachs	46,625	21,367,748
BNP Paribas	45,170	5,071,826
Citi Group	44,278	19,196,391
Credit Suisse	37,716	15,306,756
JP Morgan	35,943	13,515,439
BNY	35,633	6,113,437
Instinet	30,395	7,533,871
Deutsche Bank	27,747	5,230,189
Macquarie Bank Limited	22,056	11,874,936
Pershing Limited	21,419	1,574,822
Morgan Stanley and Co.	19,590	3,595,115
HSBC Bank	16,117	1,848,085
Investment Technology Group	14,127	3,181,201
ITG Australia Limited	11,999	8,357,788
Cabrera Capital*	11,971	7,538,216
Jefferies & Company	11,688	1,745,204
RBC Capital Market	9,510	3,858,431
Loop Capital Markets*	8,854	348,275
Credit Lyonnais	7,136	1,623,347
Korea Investments & Securities	5,142	64,755
Nomura Financial Advisory	4,580	474,887
Daiwa Capital Markets	4,161	264,147
Sanford C. Bernstein and Co.	4,111	1,063,561
SMBC Nikko Capital Markets	3,685	197,900
Convencao	3,342	268,313
Barclays Capital	3,325	143,996
Societe Generale London	3,320	874,726
Brasil Plural	3,307	406,834
Hyundai Securities	3,296	93,526
JOH Berenberg	3,167	28,950
Williams Capital Group*	2,865	18,985
Liquidnet Inc.	2,535	189,822
Mischler Financial Group*	2,502	74,435
Fubon Securities	2,420	2,206,895
Bradesco	2,307	224,060
India Infoline Limited	2,185	327,532
China Int'l Capital	1,905	469,300
Banco Modal	1,745	201,530
Renaissance Capital	1,588	1,357,500
Motilal Oswal Securities	1,518	82,019
Penserra Securities*	1,481	58,690
Cimb	1,477	675,100
Banco BTG Pactual	1,469	150,500
Edelweiss Securitites	1,302	50,876
Mizuho Securities	1,208	811,000
Dolat Capital Market	1,200	88,760
Standard Bank	1,103	71,233
Osk Securities	1,089	213,770
Royal Bank	1,080	707,484
Other Brokers	15,231	35,853,659
Total	**$ 739,192**	**226,667,723**

** Women, minority, or disabled-owned brokerage firm.*

Components may not sum to totals due to rounding.

Source: Northern Trust Custody Statements

Investment Fees

As of December 31, 2018 (in thousands)

	2018	2017
Investment Management Fees	**Fees**	**Fees**
Fixed Income	$ 2,439	$ 2,135
Domestic Equity	1,412	1,834
International Equity	3,558	3,827
Global Equity	900	958
Hedged Equity	2,555	3,079
Real Estate	3,752	3,571
Private Equity	1,322	2,291
	$15,938	$ 17,695
Other Investment Fees		
Custodial Services - Domestic	$ 476	$ 399
Other Global Custodial Services	603	939
Investment Advisory Services	290	290
Legal Services - Investments	-	18
	$ 1,369	$ 1,646
Total Investment Fees	**$17,307** (1)	**$ 19,341** (2)

(1)Total investment fees for 2018 represent approximately 48 bps of total investments.

(2)Total investment fees for 2017 represent approximately 45 bps of total investments.

For a schedule of investment fees by category, please refer to the schedule "Investment Management Compensation" in the financial section on pages 52 -53.

Components may not sum to totals due to rounding.

Actuarial

All schedules listed for the Actuarial Section are prepared by the Actuaries.

Segal Consulting
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May 21, 2019

The Retirement Board of the
Municipal Employees' Annuity and Benefit Fund of Chicago
321 North Clark Street, Suite 700
Chicago, Illinois 60654-4767

Dear Board Members:

We are pleased to submit this annual Actuarial Valuation and Review as of December 31, 2018. It summarizes the actuarial data used in the valuation; establishes the net pension liability under Governmental Accounting Standards Board (GASB) Statement No. 67 as of December 31, 2018, the pension expense for the fiscal year ending December 31, 2018, under GASB Statement No. 68, and the actuarially determined contribution for the year ending December 31, 2019; and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF or Fund or Plan).

Asset and Membership Data

The census information and financial information on which our calculations were based was prepared by the Fund staff. That assistance is gratefully acknowledged. We have not subjected the census data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data.

Actuarial Assumptions and Methods

The actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Fund's actuary. The assumptions and methods used for the December 31, 2018, actuarial valuation were based on an experience analysis covering the five-year period ending December 31, 2016, and were adopted by the Board, effective December 31, 2017. These actuarial assumptions and methods comply with the parameters set by the Actuarial Standards of Practice and the parameters for disclosure of GASB 67 and 68. Further, in our opinion, the assumptions as approved by the Board appear to be reasonably related to the experience of the Fund. The investment return assumption is based on the Fund being invested according to the target asset allocation in the Investment Policy Statement. **To the extent that the liquidation of assets to pay benefit payments and expenses requires a shift in investment allocation to more liquid, lower return asset classes, a lower discount rate will likely be required in the future.**

Funding Adequacy

MEABF is funded by employer and member contributions in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/8), which was revised on July 6, 2017 by Public Act 100-0023. For 2019 through 2022, employer contributions are specified amounts: $344 million in 2019, $421 million in 2020, $499 million in 2021, and $576 million in 2022. Starting in 2023, employer contributions are calculated as the sum of the employer normal cost for that fiscal year plus an amount determined as a level percent of payroll sufficient to bring the total assets of the Fund up to 90% of the actuarial accrued liability by the end of 2058. **The risk of insolvency for MEABF has increased due to the 2018 investment return performance combined with fixed-dollar contributions through 2022, which do not change when the Fund experiences unfavorable investment performance. We strongly recommend an actuarial funding method that targets 100% funding where payments at least cover interest on the unfunded actuarial liability and a portion of the principal balance. If the Fund becomes insolvent, the employer will be required to make contributions on a "pay as you go" basis, which means the employer would have to pay all benefits as they become due.**

Financial Results and Membership Data

This report includes the following schedules for the Actuarial and Financial sections of the Comprehensive Annual Financial Report:

- Actuarial

  Active Member Valuation Data
  Retirees and Beneficiaries Added to and Removed from Rolls
  Solvency Test
  Analysis of Financial Experience

- Financial

  Schedule of Funding Progress
  Schedule of Employer Contributions

Limitation of Actuarial Measurements

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

Qualifications

The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: _____ _____

Matthew A. Strom, FSA, MAAA, EA
Vice President and Actuary

Jake Libauskas, ASA, MAAA, EA
Consulting Actuary

Valuation Summary

Purpose

This report has been prepared by Segal Consulting to present a valuation of the Municipal Employees' Annuity and Benefit Fund of Chicago (MEABF or Fund or Plan) as of December 31, 2018. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as outlined in 40 ILCS 5/8 and administered by the Retirement Board;
- The characteristics of covered active members, inactive vested members, and retirees and beneficiaries as of December 31, 2018, provided by MEABF staff;
- The assets of the Plan as of December 31, 2018, provided by MEABF staff;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Valuation Highlights

The following key findings were the result of this actuarial valuation:

1. **The risk of insolvency for MEABF has increased due to the 2018 investment return performance combined with fixed-dollar contributions through 2022, which do not change when the Fund experiences unfavorable investment performance.**
2. For the year ended December 31, 2018, Segal has estimated the asset return on a market basis to be -4.9%. After gradual recognition of investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 4.3%. This represents an experience loss when compared to the assumed rate of 7.0%. As of December 31, 2018, the actuarial value of assets ($4.20 billion) represents 107% of the market value ($3.91 billion).
3. The market value of assets as of December 31, 2018 is $3.91 billion, which includes $3.56 billion of investments and $344 million of employer contributions receivable. As the employer contributions increase in the future, the receivable employer contributions become a larger percentage of the reported market value of assets.
4. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of December 31, 2018, is 25.0%, compared to 27.4% as of December 31, 2017. Using the market value of assets, the funded ratio as of December 31, 2018, is 23.3%, compared to 28.0% as of December 31, 2017.
5. For the fiscal year beginning January 1, 2019, the actuarially determined contribution (ADC) for pension benefits is $1,117,387,759. The expected employer contribution for 2019 (payable in 2020) is $421,000,000. **Compared to the actuarially determined contribution of $1,117,387,759, the contribution deficiency is $696,387,759. Each year there is a contribution deficiency leads to an increased deficiency in all future years.**
6. The total employer contributions for 2018 (payable in 2019) were expected to be $344,000,000. Actual employer contributions for 2018 totaled $349,574,257.

7. When measuring pension liability for GASB purposes, the Entry Age actuarial cost method is used, which is the same method that is used for funding purposes. In addition, because of the statutorily-required employer contributions under Public Act 100-0023, which are expected to increase substantially over time, the GASB blended discount rate calculation results in the same discount rate (7.00%) that is used for funding purposes as of December 31, 2018. This means that the total pension liability (TPL) measure for financial reporting shown in this report will match the actuarial accrued liability (AAL) measure for funding.
8. The net pension liability (NPL) is equal to the difference between the TPL and the Plan's fiduciary net position. The Plan's fiduciary net position is equal to the market value of assets. The NPL increased from $11,728,377,908 as of December 31, 2017, to $12,894,433,840 as of December 31, 2018. The increase in the NPL is primarily due to the lower than expected market value investment return.
9. The total unrecognized investment loss as of December 31, 2018, is $281,463,696. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 7.0% per year (net of expenses) on a market value basis will result in investment losses on the actuarial value of assets in the next few years.
10. The current method used to determine the actuarial value of assets yields an amount that is 107.2% of the market value of assets as of December 31, 2018. Guidelines in Actuarial Standards of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding market value. We believe the actuarial asset method currently complies with these guidelines.
11. This actuarial valuation report as of December 31, 2018, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected.

Summary of Key Valuation Results

	2018	2017
Funding ratios as of December 31:		
Actuarial accrued liability	$16,808,614,316	$16,282,396,195
Market value of assets	3,914,180,476	4,554,018,287
Unfunded actuarial accrued liability on a market value basis	12,894,433,840	11,728,377,908
Funded ratio on a market value basis	23.29%	27.97%
Actuarial value of assets	$4,195,644,172	$4,456,771,744
Unfunded actuarial accrued liability on an actuarial value basis	12,612,970,144	11,825,624,451
Funded ratio on an actuarial value basis	24.96%	27.37%
Book value of assets	$3,588,228,555	$3,765,555,325
Unfunded actuarial accrued liability on a book value basis	13,220,385,761	12,516,840,870
Funded ratio on a book value basis	21.35%	23.13%
Demographic data as of December 31:		
Number of retirees and beneficiaries	25,577	25,383
Number of inactive members	17,575	17,549
Number of active members	31,285	30,922
Total pensionable salary supplied by the Fund	$1,734,595,691	$1,686,532,720
Average pensionable salary	$55,445	$54,542

Contribution requirement for Fiscal Year:	2020	2019	2018
Statutory City contribution*	$499,000,000	$421,000,000	$344,000,000
Actuarially determined contribution requirment	N/A	1,117,387,759	1,049,915,647

**As established by Public Act 100-0023. City contributions are shown in the year that they will be booked. The contributions will be paid in the following year.*

Summary of Key Valuation Results

	2019	2018
Contributions for plan year beginning January 1:		
Actuarially determined contribution requirement	$1,117,387,759	$1,049,915,647
Expected employer contributions	421,000,000	344,000,000
Actual employer contributions*	--	349,574,257
Funding elements for plan year beginning January 1:		
Employer normal cost, including administrative expenses, adjusted for timing	$100,953,857	$96,931,103
Market value of assets	3,914,180,476	4,554,018,287
Actuarial value of assets	4,195,644,172	4,456,771,744
Actuarial accrued liability	16,808,614,316	16,282,396,195
Unfunded actuarial accrued liability on an actuarial value basis	12,612,970,144	11,825,624,451
Funded ratio on an actuarial value basis	24.96%	27.37%
GASB information as of December 31 of the prior year:		
Long-term expected rate of return	7.00%	7.00%
Municipal bond index	4.10%	3.44%
Single equivalent discount rate	7.00%	7.00%
Total pension liability	$16,808,614,316	$16,282,396,195
Plan fiduciary net position	3,914,180,476	4,554,018,287
Net pension liability	12,894,433,840	11,728,377,908
Plan fiduciary net position as a percentage of total pension liability	23.29%	27.97%

**Receivable amount to be paid the following year*

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1.	Pensioners as of the valuation date (including 4,184 beneficiaries)		25,577
2.	Members inactive during year ended December 31, 2018 with vested rights		2,014
3.	Members active during the year ended December 31, 2018		31,285
	Fully vested	14,678	
	Not vested	16,607	
4.	Other non-vested inactive members as of the valuation date		15,561

Determination of Actuarial Accrued Liability:

		Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
1.	Active members			
	a. Retirement benefits	$6,885,364,929	$1,186,292,392	$5,669,072,537
	b. Death benefits	113,863,923	32,247,282	81,616,641
	c. Withdrawal benefits	689,327,907	485,929,959	203,397,948
	d. Total	$7,658,556,759	$1,704,469,633	$5,954,087,126
2.	Inactive vested members	$405,173,297	--	$405,173,297
3.	Inactive non-vested members	140,649,770	--	140,649,770
4.	Retirees and beneficiaries	10,308,704,123	--	10,308,704,123
5.	Total	$18,513,083,949	$1,704,469,633	$16,808,614,316

Determination of Unfunded Actuarial Accrued Liability:

1.	Actuarial accrued liability	$16,808,614,316
2.	Actuarial value of assets ($3,914,180,476 at market value)	4,195,644,172
3.	Unfunded actuarial accrued liability	$12,612,970,144

Summary of Actuarial Valuation Results

Components of normal cost:	Tier 1		Tier 2		Tier 3		Total	
	% of Payroll	Amount	% of Payroll	Amount	% of Payroll	Amount	% of Payroll	Amount
1 Retirement	9.89%	$116,510,045	5.52%	$22,772,998	6.39%	$12,429,542	8.50%	$151,712,585
2 Turnover	3.51%	41,354,008	2.73%	11,265,867	3.35%	6,527,559	3.31%	$59,147,434
3 Mortality	0.23%	2,727,383	0.25%	1,030,906	0.23%	453,071	0.24%	$4,211,360
4 Disability	0.75%	8,839,358	0.75%	3,095,296	0.75%	1,459,317	0.75%	13,393,971
5 Total normal cost: (1) + (2) + (3) + (4)	14.38%	$169,430,794	9.25%	$38,165,067	10.73%	$20,869,489	12.79%	$228,465,350
6 Total normal cost, adjusted for timing*	14.87%	175,260,576	9.57%	39,478,252	11.09%	21,587,568	13.23%	236,326,396
7 Administrative expenses	0.37%	4,381,153	0.37%	1,534,157	0.37%	723,298	0.37%	6,638,608
8 Total normal cost, including administrative expenses: (6) + (7)	15.24%	$179,641,729	9.94%	$41,012,409	11.47%	$22,310,866	13.60%	$242,965,004
9 Expected employee contributions**							-8.14%	-145,369,227
10 Employer normal cost: (8) + (9)							5.46%	$97,595,777
11 Employer normal cost, adjusted for timing***							5.65%	100,953,857

** Reflects timing adjustment to the middle of the year*

*** Based on payroll, adjusted to the middle of the year*

**** Reflects timing adjustment to the end of the year*

Actuarially Determined Contribution

		Year Beginning January 1, 2019	
		Amount	% of Payroll
1	Total normal cost*	$236,326,396	13.23%
2	Administrative expenses	6,638,608	0.37%
3	Expected employee contributions**	-145,369,227	-8.14%
4	Employer normal cost: (1) + (2) + (3)	97,595,777	5.46%
5	Employer normal cost, adjusted for timing***	100,953,857	5.65%
6	Actuarial accrued liability	16,808,614,316	
7	Actuarial value of assets	4,195,644,172	
8	Unfunded/(overfunded) actuarial accrued liability: (6) - (7)	12,612,970,144	
9	Payment on unfunded actuarial accrued liability, adjusted for timing***	1,016,433,901	56.92%
10	Actuarially determined contribution: (5) + (9)	$1,117,387,759	62.57%
11	Projected payroll	$1,785,862,736	

** Reflects timing adjustment to the middle of the year*

*** Based on payroll, adjusted to the middle of the year*

**** Employer contributions are assumed to be paid at the end of the year*

Plan Membership

	December 31, 2018	December 31, 2017
Active Members		
Number*	31,285	30,922
Tier 1	18,372	19,586
Tier 2	8,248	9,349
Tier 3	4,665	1,987
Vested	14,678	15,320
Non-vested	16,607	15,602
Average age	46.2	46.4
Average years of service	11.2	11.4
Average annual salary	$55,445	$54,542
Inactive Members		
Number	17,575	17,549
Average age	46.9	46.2
Average years of service	3.9	3.7
Retirees		
Number	21,393	21,137
Average age	73.0	72.9
Average annual benefit	$39,564	$38,376
Deferred	0	1
Surviving		
Number	3,963	4,007
Average age	78.5	78.4
Average annual benefit	$15,408	$14,856
Reversionary annuitants		
Number	119	124
Average age	78.9	78.5
Average annual benefit	$5,340	$5,244
Children	102	114
Total members	74,437	73,854

**Includes 373 and 322 members receiving disability benefits for 2017 and 2018, respectively*

Actuarial Experience

To calculate the actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. Overall favorable experience relative to the assumptions (an actuarial gain) causes a decrease in the contribution requirement. On the other hand, overall less favorable experince relative to the assumptions (an actuarial loss) causes an increase in the contribution requirement.

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single years' experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is $206,416,949; $110,783,177 from investment losses and $95,633,772 in losses from all other sources. The net experience variation from individual sources other than investments was approximately 0.6% of the actuarial accrued liability.

This chart provides a summary of the actuarial experience during the past year:

Actuarial Experience for Year Ended December 31, 2018		
1	Net gain/(loss) from investments*	-110,783,177
2	Net gain/(loss) from administrative expenses	-165,602
3	Net gain/(loss) from other experience**	-95,468,170
4	Net experience gain/(loss): (1) + (2) + (3)	-206,416,949

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the MEABF's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets for the 2018 Plan year was 7.00%. The actuarial rate of return on an actuarial basis for the 2018 Plan year was 4.27%. Since the actual return for the year was less than the assumed return, the Fund experienced an actuarial loss during the year ended December 31, 2018 with regard to its investments.

This chart shows the gain/(loss) due to investment experience:

Actuarial Value Investment Experience for Year Ended December 31, 2018	
Actual return	$173,735,537
Average value of assets	4,064,553,061
Actual rate of return: (1) ÷ (2)	4.27%
Assumed rate of return	7.00%
Expected return: (2) x (4)	$284,518,714
Actuarial gain/(loss): (1) – (5)	-$110,783,177

Administrative Expenses

Administrative expenses for the year ended December 31, 2018 totaled $6,638,608 compared to the assumption of $6,473,006. This resulted in a loss of $165,602 for the year.

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended December 31, 2018 amounted to $95,468,170, which is approximately 0.6% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Fund for the year ended December 31, 2018 is shown in the chart below:

Experience Due to Changes in Demographics for Year Ended December 31, 2018

1.	More turnover than expected	$16,106,165
2.	More or earlier retirement than expected	-68,267,826
3.	More deaths than expected among retirees and beneficiaries	21,431,866
4.	Greater salary/service increases than expected for continuing actives	-66,250,601
5.	New entrants	-13,545,423
6.	Miscellaneous	15,057,649
7.	Total	-$95,468,170

Development of Unfunded Actuarial Accrued Liability

	Year Ending December 31				
	2018	2017	2016	2015	2014
1. Unfunded actuarial accrued liability at beginning of year*	$11,825,624,451	$10,464,982,455	$9,840,134,873	$7,285,291,571	$8,742,285,563
2. Normal cost at beginning of year*	229,786,056	246,761,737	255,682,691	233,177,207	253,748,078
3. Total contributions	-487,973,984	-396,528,555	-287,834,877	-289,144,578	-288,769,612
4. Interest					
(a) Unfunded actuarial accrued liability and normal cost	$843,878,736	$803,380,814	$757,186,317	$563,885,158	$674,702,523
(b) Total contributions	-4,762,064	-4,962,323	-4,801,261	-4,839,455	-10,633,094
(c) Total interest: (4a) + (4b)	839,116,672	798,418,491	752,385,056	559,045,703	664,069,429
5. Expected unfunded actuarial accrued liability: (1) + (2) + (3) + (4c)	$12,406,553,195	$11,113,634,128	$10,560,367,743	$7,788,369,903	$9,371,333,458
6. Changes due to (gain)/loss from:					
(a) Investments	$110,783,177	-$33,329,605	-$22,722,207	$29,330,715	-$86,701,165
(b) Demographics and other	95,633,772	-116,622,006	-72,663,081	-117,575,084	-8,634,360
(c) Total changes due to (gain)/loss: (6a) + (6b)	206,416,949	-149,951,611	-95,385,288	-88,244,369	-95,335,525
7. Change due to plan provisions	0	0	0	2,140,009,339	-1,990,706,362
8. Change in actuarial assumptions	0	861,941,934	0	0	0
9. Unfunded actuarial accrued liability at end of year*: (5) + (6c) + (7) + (8)	$12,612,970,144	$11,825,624,451	$10,464,982,455	$9,840,134,873	$7,285,291,571

** Includes pension and OPEB liabilities for years ended December 31, 2016 and earlier*

Development of Employer Costs

The amount of actuarially determined contribution is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution of 62.57% of payroll. The actuarially determined contribution is based on a 30-year, level dollar amortization of the unfunded actuarial accrued liability. A 30-year "rolling" amortization will never fully fund the unfunded actuarial accrued liability.

This chart shows the calculation of the actuarially determined contribution for the upcoming year:

Actuarially Determined Contribution

		Year Beginning January 1, 2019	
		Amount	**% of Payroll**
1	Total normal cost*	$236,326,396	13.23%
2	Administrative expenses	6,638,608	0.37%
3	Expected employee contributions**	-145,369,227	-8.14%
4	Employer normal cost: (1) + (2) + (3)	97,595,777	5.46%
5	Employer normal cost, adjusted for timing***	100,953,857	5.65%
6	Actuarial accrued liability	16,808,614,316	
7	Actuarial value of assets	4,195,644,172	
8	Unfunded/(overfunded) actuarial accrued liability: (6) - (7)	12,612,970,144	
9	Payment on unfunded actuarial accrued liability, adjusted for timing***	1,016,433,901	56.92%
10	Actuarially determined contribution: (5) + (9)	$1,117,387,759	62.57%
11	Projected payroll	$1,785,862,736	

** Reflects timing adjustment to the middle of the year*

*** Based on payroll, adjusted to the middle of the year*

**** Employer contributions are assumed to be paid at the end of the year*

The contribution requirements as of December 31, 2018, are based on all of the data described in the previous sections, the actuarial assumptions, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Development of Employer Costs (Continued)

Reconciliation of Actuarially Determined Contribution

The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

Reconciliation of Actuarially Determined Contribution from December 31, 2017 to December 31, 2018

Actuarially Determined Contribution as of December 31, 2017	**$1,049,915,647**
Effect of plan amendment	$0
Effect of change in asset method	0
Effect of expected change in amortization payment due to payroll growth	0
Effect of rolling amortization period	-10,875,512
Effect of change in administrative expense assumption	171,300
Effect of change in other actuarial assumptions	0
Effect of contributions (more)/less than actuarially determined contribution	58,201,538
Effect of investment (gain)/loss	9,023,140
Effect of other (gains)/losses on accrued liability	7,789,242
Effect of net other changes: (gain)/loss*	3,162,404
Total change	$67,472,112
Actuarially Determined Contribution as of December 31, 2018	**$1,117,387,759**

**Primarily due to larger normal cost caused by larger salaries than expected*

Comparison of Employer Contribution to Actuarially Determined Contribution

Plan Year Ended December 31	Actuarially Determined Contributions (ADC)*	Actual Contributions**	Percentage Contributed
2009	$436,475,587	$157,697,608	36.1%
2010	506,902,840	164,302,004	32.4%
2011	634,559,144	156,525,374	24.7%
2012	705,454,416	158,380,709	22.5%
2013	834,398,482	157,704,971	18.9%
2014	848,864,496	158,797,631	18.7%
2015	686,373,727	157,716,475	23.0%
2016	970,112,414	157,444,029	16.2%
2017	1,005,456,621	261,763,635	26.0%
2018	1,049,915,647	349,574,257	33.3%
2019	1,117,387,759	--	--

** Prior to 2015, this amount was the Annual Required Contribution (ARC). Includes pension and OPEB.*

***Receivable amount to be paid the following year.*

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value Of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/(Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
12/31/2009	$6,295,788,191	$10,830,119,369	$4,534,331,178	58.13%	$1,551,973,348	292.17%
12/31/2010	6,003,389,605	11,828,665,658	5,825,276,053	50.75%	1,541,388,065	377.92%
12/31/2011	5,552,291,417	12,292,930,124	6,740,638,707	45.17%	1,605,993,339	419.72%
12/31/2012	5,073,320,275	13,475,376,963	8,402,056,688	37.65%	1,590,793,702	528.17%
12/31/2013	5,114,207,803	13,828,920,032	8,714,712,229	36.98%	1,580,288,709	551.46%
12/31/2014	5,039,297,432	12,307,094,062	7,267,796,630	40.94%	1,602,977,593	453.39%
12/31/2015	4,815,126,844	14,647,114,971	9,831,988,127	32.87%	1,643,480,973	598.24%
12/31/2016	4,590,366,241	15,055,348,696	10,464,982,455	30.49%	1,646,939,238	635.42%
12/31/2017	4,456,771,744	16,282,396,195	11,825,624,451	27.37%	1,686,532,720	701.18%
12/31/2018	4,195,644,172	16,808,614,316	12,612,970,144	24.96%	1,734,595,691	727.25%

Solvency Test

Actuarial Valuation Date	(1) Active and Inactive Member Contribution	(2) Retirees and Beneficiaries	(3) Active and Inactive Members (ER Financed Portion)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets (1)	(2)	(3)
12/31/2009	$1,610,503,053	$5,874,606,230	$3,569,183,317	$6,295,788,191	100.00%	79.75%	0.00%
12/31/2010	1,682,418,161	6,438,552,003	3,931,259,712	6,003,389,605	100.00%	67.11%	0.00%
12/31/2011	1,724,683,910	6,803,140,300	3,928,347,812	5,552,291,417	100.00%	56.26%	0.00%
12/31/2012	1,724,021,890	7,633,045,219	4,280,392,937	5,073,320,275	100.00%	43.88%	0.00%
12/31/2013	1,763,193,047	7,938,850,949	4,154,449,370	5,114,207,803	100.00%	42.21%	0.00%
12/31/2014	1,816,477,893	7,029,523,772	3,478,587,338	5,039,297,432	100.00%	45.85%	0.00%
12/31/2015	1,874,982,804	8,427,968,220	4,352,310,693	4,815,126,844	100.00%	34.89%	0.00%
12/31/2016	1,918,150,355	8,725,032,932	4,412,165,409	4,590,366,241	100.00%	30.63%	0.00%
12/31/2017	1,952,652,300	9,905,000,389	4,424,743,506	4,456,771,744	100.00%	25.28%	0.00%
12/31/2018	1,992,398,627	10,308,704,123	4,507,511,566	4,195,644,172	100.00%	21.37%	0.00%

Reconciliation of Member Data

	Active Members*	Inactive Members	Deferred Retirees	Retirees	Beneficiaries	Total
Number as of December 31, 2017	30,922	17,549	1	21,137	4,245	73,854
New members	3,537	N/A	N/A	N/A	N/A	3,537
Terminations	-1,809	1,809	0	0	0	0
Retirements	-894	-181	-1	1,076	N/A	0
Died with beneficiary	-19	-4	0	-213	236	0
Died without beneficiary	-27	-11	0	-610	-304	-952
Refunds	-676	-1,433	0	0	0	-2,109
Rehire	252	-247	0	-5	N/A	0
Net transfers	0	92	0	0	0	92
Temporary annuity expired	N/A	N/A	NA	-2	-23	-25
Data adjustment	-1	1	0	10	30	40
Number as of December 31, 2018	31,285	17,575	0	21,393	4,184	74,437

** Includes members receiving disability benefits*

History of Active Member Valuation Data

Actuarial Valuation Date	Active Members	Percent Increase	Annual Salaries	Percent Increase	Average Salary	Percent Increase	CPI Chicago*
12/31/2009	31,586	(3.00)%	$1,551,973,348	0.52%	$49,135	3.63%	2.54%
12/31/2010	30,726	(2.72)%	1,541,388,065	(0.68)%	50,166	2.10%	1.23%
12/31/2011	31,976	4.07%	1,605,993,339	4.19%	50,225	0.12%	2.06%
12/31/2012	31,326	(2.03)%	1,590,793,702	(0.95)%	50,782	1.11%	1.68%
12/31/2013	30,647	(2.17)%	1,580,288,709	(0.66)%	51,564	1.54%	0.51%
12/31/2014	30,160	(1.59)%	1,602,977,593	1.44%	53,149	3.07%	1.48%
12/31/2015	30,683	1.73%	1,643,480,973	2.53%	53,563	0.78%	0.00%
12/31/2016	30,296	(1.26)%	1,646,939,238	0.21%	54,362	1.49%	1.86%
12/31/2017	30,922	2.07%	1,686,532,720	2.40%	54,542	0.33%	1.66%
12/31/2018	31,285	1.17%	1,734,595,691	2.85%	55,445	1.66%	1.07%
Average Increase/ (Decrease) Last 5 years		0.41%		1.88%		1.46%	1.21%

** CPI-Chicago as of the valuation date*

History of Retirees and Beneficiaries Added to Payrolls 2009 – 2018

Valuation Date	Added to Payroll		Removed from Payroll		Payroll End of Year		Average Annual Benefit	Increase in Average Benefit
	Number	Annual Benefits*	Number	Annual Benefits	Number	Annual Benefits		
Employee Annuitants (Male and Female)								
12/31/2009	840	$39,821,463	768	$18,900,720	18,245	$546,628,095	$29,960	3.57%
12/31/2010	1,008	46,836,109	815	21,038,211	18,438	572,425,992	31,406	3.62%
12/31/2011	1,149	55,405,692	774	20,754,048	18,813	607,077,636	32,269	3.94%
12/31/2012	1,559	68,828,940	758	20,349,840	19,614	655,556,736	33,423	3.58%
12/31/2013	1,242	57,147,576	743	21,682,632	20,113	691,021,680	34,357	2.79%
12/31/2014	1,054	37,110,852	756	23,299,656	20,411	704,832,876	34,532	0.51%
12/31/2015	990	65,756,124	817	23,871,948	20,584	746,717,052	36,277	5.05%
12/31/2016	1,107	58,094,440	772	25,721,880	20,919	779,089,612	37,243	2.66%
12/31/2017	1,148	62,453,527	930	30,481,722	21,137	811,061,417	38,372	3.03%
12/31/2018	1,086	64,883,087	830	29,664,303	21,393	846,280,201	39,559	3.09%
Surviving Spouse and Reversionary Annuitants								
12/31/2009	266	$3,869,064	280	$2,939,460	4,364	$52,884,192	$12,118	2.12%
12/31/2010	269	4,329,156	287	3,292,596	4,346	53,920,752	12,407	2.38%
12/31/2011**	362	4,152,804	241	3,479,496	4,403	54,594,060	12,399	(0.06)%
12/31/2012	237	4,168,092	286	3,217,812	4,354	55,544,340	12,757	2.89%
12/31/2013	270	4,593,708	279	3,096,132	4,345	57,041,916	13,128	2.91%
12/31/2014	265	4,648,596	310	3,713,844	4,300	57,976,668	13,483	2.70%
12/31/2015	251	4,185,900	291	3,681,516	4,260	58,481,052	13,728	1.82%
12/31/2016	235	4,862,474	282	3,544,440	4,213	59,799,086	14,194	3.39%
12/31/2017	261	5,053,290	343	4,653,334	4,131	60,199,042	14,573	2.67%
12/31/2018	255	5,539,163	304	4,043,991	4,082	61,694,214	15,114	3.71%

** Annual benefits added to payroll include post-retirement increase amounts.*

*** Number added in 2011 includes 121 reversionary annuitants that are also surviving spouses.*

Actuarial Reserve Liabilities as of December 31, 2018

	2018	2017
Accrued Liability for Active and Inactive Participants*	$6,499,910,194	$6,377,395,806
Reserves for:		
Service Retirement Pension	$9,178,317,200	$8,811,148,340
Future Spouses of Current Retirees	676,671,756	649,791,536
Surviving Spouse Pension	452,740,154	443,026,241
Child Annuitants	975,012	1,034,272
Total Accrued Liability	16,808,614,316	16,282,396,195
Actuarial Net Assets	4,195,644,172	4,456,771,744
Unfunded Actuarial Liabilities	$12,612,970,144	$11,825,624,451

* *Accrued liability for active participants includes retirement liability for members in ordinary or duty disability status. Liability for disability benefits is recognized as a one-year term cost of 0.75 percent of pay added to the normal cost.*

Statutory Reserves as of December 31, 2018

	Annuity Payment Fund	Prior Service Fund	Total
Statutory Reserve*			
Retirees	$ 1,809,384,957	$ 6,354,339,378	$ 8,163,724,335
Future Surviving Spouses	414,468,080	483,361,723	897,829,803
Spouses**	203,330,902	177,725,439	381,056,341
Annual Benefits			
Retirees	$ 219,054,552	$ 627,225,649	$ 846,280,201
Future Surviving Spouses	N/A	N/A	N/A
Spouses**	31,324,864	30,369,350	61,694,214

**As required by State statutes, Statutory Reserves are calculated using the Combined Annuity Mortality Table with interest at 3.00 percent per annum, except for employees and spouses of employees who were participants on or before January 1, 1952, for whom the American Experience Table of Mortality with interest at 4.00 percent per annum is used.*

***Surviving spouses also include reversionary annuitants.*

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions: The information and analysis used in supporting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Review dated September 21, 2017, with a follow-up report dated March 12, 2018. Current data is reviewed in conjunction with each annual valuation.

Mortality Rates:

Post-retirement: The RP-2014 Healthy Annuitant Mortality Table, set forward two years for males and one year for females, projected generationally using scale MP-2016 (effective December 31, 2017).

Pre-retirement: 120% of the RP-2014 Employee Mortality Tables, projected generationally using scale MP-2016 (effective December 31, 2017).

The mortality tables specified above were determined to reasonably reflect the mortality experience of the Plan as of the valuation date. The mortality table was then adjusted to future years using generational projection under scale MP-2016 to reflect future mortality improvements.

Termination Rates: These service-based rates are based on recent experience of the Fund (effective December 31, 2017).

Service	Rate (%)	Service	Rate (%)
0 - 0.99	17.00	12 - 12.99	4.25
1 - 1.99	16.00	13 - 13.99	4.00
2 - 2.99	14.00	14 - 14.99	3.75
3 - 3.99	12.00	15 - 15.99	3.50
4 - 4.99	10.00	16 - 16.99	3.25
5 - 5.99	8.00	17 - 17.99	3.00
6 - 6.99	7.00	18 - 18.99	2.75
7 - 7.99	6.50	19 - 19.99	2.50
8 - 8.99	6.00	20 - 20.99	2.25
9 - 10.99	5.00	21+	2.00
11 - 11.99	4.50		

Retirement Rates: For employees first hired prior to January 1, 2011, rates of retirement are based on the recent experience of the Fund (effective December 31, 2017).

Tier 1:

	Age and Service-Based Retirement Rates							
Service	**50 - 54**	**55 - 59**	**60 - 64**	**65**	**66 - 67**	**68 - 69**	**70 - 79**	**80+**
10 - 11		0%	8%	40%	30%	30%	35%	100%
12 - 19		0%	8%	30%	15%	20%	22.5%	100%
20 - 24		8%	10%	30%	15%	20%	22.5%	100%
25 - 29		8%	10%	35%	22.5%	20%	22.5%	100%
30	20%	8%	15%	35%	22.5%	20%	22.5%	100%
31 - 32	20%	8%	15%	40%	22.5%	20%	30%	100%
33 - 34	25%	13%	15%	40%	22.5%	20%	30%	100%
35 - 39	25%	13%	15%	45%	22.5%	20%	30%	100%
40+	50%	50%	50%	50%	50%	50%	50%	100%

Tier 2: For employees first hired on or after January 1, 2011 and before July 6, 2017, rates of retirement for each age from 62 to 80 were used (effective December 31, 2011).

Age	Rate
62	40%
63 - 69	20%
70 - 79	45%
80 +	100%

Tier 3: For employees first hired on or after July 6, 2017, rates of retirement for each age from 62 to 80 were used (effective December 31, 2017).

Age	Rate
60	40%
61 – 69	20%
70 – 79	45%
80 +	100%

Disability Benefit Valuation: Disability benefits are valued in normal cost as 0.75% of projected payroll (effective December 31, 2005).

Valuation of Inactive Participants: Inactive members with less than 10 years of service are assumed to take an immediate refund of his or her account balance. For inactive members with 10 or more years of service, the money purchase benefit is estimated by projecting the account balance (including employer contributions, when applicable) to the earliest retirement age. This estimated money purchase benefit is increased by 15% to account for the possibility that the minimum annuity formula is more valuable. For inactive members with 10 or more service and salary information available, the minimum annuity benefit is valued, if it is more valuable than the money purchase benefit.

Unknown Data for Participants: Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Spouse: 85% of members are assumed to be married, female spouses are assumed to be four years younger than male spouses, and 100% of spouses are assumed to be opposite gender (effective December 31, 1999).

Member Contributions: Based on payroll, adjusted to the middle of the year.

Net Investment Return: 7.00% per year, net of investment expense (effective December 31, 2017)

Inflation: 2.50% per year (effective December 31, 2017)

Salary Increases: These service-based rates are based on the recent experience of the Fund (effective December 31, 2017).

Service	Rate for Years 2019 - 2022 (%)	Rate for 2023 and After (%)
0 - 0.99	6.50	7.75
1 – 1.99	5.50	7.25
2 – 2.99	4.50	6.75
3 – 3.99	3.50	6.25
4 – 4.99	3.25	5.75
5 – 5.99	3.00	5.25
6 – 6.99	2.75	4.75
7 – 7.99	2.50	4.50
8 – 8.99	2.25	4.25
9 – 9.99	2.25	4.00
10 – 25.99	2.25	3.75
26+	1.50	3.50

Administrative Expenses:	Equal to actual expenses for the prior year. For purposes of the 50-year projection, future administrative expenses are assumed to increase by 2.5% each year
Actuarial Value of Assets:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five - year period (effective December 31, 1999).
Actuarial Cost Method:	Entry Age Normal. Under this method, a normal cost is calculated for each employee that is the level annual contribution as a percent of pay required to be made from the employee's date of hire for as long as he/she remains active so that sufficient assets will be accumulated to provide his/her benefit. The accrued liability is the difference between the present value of all future benefits and the present value of all future normal costs.

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Fund included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Membership:	Any employee of the City of Chicago or the Board of Education employed under the provisions of the municipal personnel ordinance or any person employed by the Municipal Employees' Annuity and Benefit Fund of Chicago who is not participating in any other pension fund or retirement system is covered by the Fund. Current and former employees of the Chicago Housing Authority and the Public Building Commission who have service in this Plan or who reinstate service in this Plan, may elect to participate in this Plan with respect to their employment with the Chicago Housing Authority or the Public Building Commission under certain circumstances.
Tiers:	Tier 1: First hired before January 1, 2011 Tier 2: First hired from non-reciprocal Fund on or after January 1, 2011 and before July 6, 2017 Tier 3: First hired on or after July 6, 2017 or former Tier 2 members that elected to make a one-time irrevocable election to switch to Tier 3 ("elective" Tier 3)
Employee Contributions:	Tier 1 and Tier 2 members of the Fund are required to contribute 8.5% of pensionable salary to the Fund as follows: 6.5% for the employee's retirement annuity, 1.5% for the spouse's annuity, and 0.5% for the automatic increases in the retirement annuity. Tier 3 members of the Fund are required to contribute 11.5% of pensionable pay. However, member contribution rate will be the normal cost rate, if less than 11.5%, but not lower than 8.5%. Once the Fund reaches 90% funded, the member contribution rate will be lowered to 7.5% and remain at 7.5% unless the funded ratio drops below 75%.

Final Average Salary:	For Tier 1 members, the final average salary is the average salary of the highest four consecutive years within the last 10 years of service prior to retirement. For Tier 2 and Tier 3 members, the final average salary is the average pensionable salary of the highest eight consecutive years within the last 10 years of service prior to retirement. Pensionable salary is limited to $106,800 in 2011, increased by the lesser of 3% or ½ of the change in CPI-U, not less than zero. For 2018, the salary limit was $113,645.
Employee Retirement Annuity:	
Money Purchase Formula	
Eligibility	Tier 1: Age 55 and 10 years of service Tier 2: Age 62 and 10 years of service Tier 3: Age 60 and 10 years of service
Amount	The annuity is based on all employee and City contributions. However, for Tier 1 members who retire before age 60 with less than 20 years of service, the annuity is based on employee contributions plus 1/10th of the City contributions for each year of service over 10. Maximum is 60% of highest salary.
Minimum Annuity Formula	
Eligibility	Tier 1, the earlier of: • Age 65 and in active employment • Age 60 and 10 years of service • Age 55 and 20 years of service • Age 50 and 30 years of service Tier 2: Age 62 and 10 years of service Tier 3: Age 60 and 10 years of service
Amount	The annuity is equal to 2.4% for each year of service times final average salary. For Tier 1 members under age 60 with less than 25 years of service, the annuity is reduced by 0.25% for each month that the member is under age 60. For Tier 2 members under age 67, the annuity is reduced by 0.50% for each month that the member is under age 67. For Tier 3 members under age 65, the annuity is reduced by 0.50% for each month that the member is under age 65. Maximum is 80% of final average salary.

Post-Retirement Increase:	Tier 1: An employee annuitant is eligible to receive an annual increase of 3% of the current payable annuity (compound). This increase begins in January of the year of the first payment date following the earlier of: 1) the later of the third anniversary of retirement or age 53, or 2) the later of the first anniversary of retirement or age 60 Tier 2 and Tier 3: An employee annuitant or surviving spouse who is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3% or ½ of the annual unadjusted percentage increase in the Consumer Price Index-U. The increase is based on the amount of the originally granted benefit (simple). This increase begins in January of the year of the first payment date following the later of: 1) the attainment of age 67 for Tier 2 members or age 65 for Tier 3 members, or 2) the first anniversary of the annuity start date
Reversionary Annuity:	An employee may elect to reduce his or her annuity by an amount less than or equal to $400 to provide a reversionary annuity for a spouse, parent, child, brother, or sister, to begin upon the employee's death. The election must be made before retirement and have been in effect one year prior to death. The one-year requirement is waived if the beneficiary is the employee's spouse. The death of the employee before retirement voids this election. The reversionary annuity for a spouse when added to the spouse's annuity cannot exceed 100% of the employee's reduced annuity. The amount of the monthly reversionary annuity is determined by multiplying the amount of the monthly reduction in the employee's annuity by a factor based on the age of the employee and the difference between the ages of the employee and the reversionary annuitant at the start date of the employee's annuity.
Elected City Officer's Optional Plan:	An alternative plan for elected officials of 3% of final salary for the first eight years, 4% for the next four years, and 5% thereafter, subject to an 80% maximum, is available. The elected official must contribute an additional 3% of salary to receive these benefits. This plan also includes alternative widow and disability benefit formulas. This plan became effective upon approval from the IRS on September 17, 1991. Public Act 100-0023 closed this Plan to officers elected after July 6, 2017.

Spouse Annuity:	The surviving spouse annuity is the greater of the annuity under the money purchase formula or the minimum annuity formula. Surviving spouses who remarry on or after September 4, 2000, will not have their annuities terminated.
Money Purchase Formula	When an employee retires, the spouse's annuity is fixed, based on employee and City contributions for the spouse's annuity and a joint life age factor. If the employee dies in service, the spouse's annuity is based on all contributions. For 3% annuities fixed on or after August 1, 1983, the "Combined Annuity Mortality Table" shall continue to be used; however, surviving spouse's single life annuities and reversionary annuities shall be computed using the best factor (the factor producing the highest annuity), without regard to gender.
Minimum Annuity Formula	If the employee retires or dies in service and is at least age 55 with 20 or more years of service, or is at least age 50 with 30 or more years of service, the spouse's annuity is equal to half the amount of the annuity the employee was entitled to receive at the time of retirement or death in service. This annuity must be reduced by 0.25% for each month the spouse is under age 55 (or age 50 if the employee had at least 25 years of service) at the time the employee retires or dies in service. If the employee dies while receiving a retirement annuity, the spouse is eligible for an annuity of one half of the employee's annuity at death. This annuity is reduced by 0.25% for each month the spouse is under age 55 (or age 50 if the employee had at least 25 years of service) at the time of the employee's death. If the employee dies in service with at least 10 years of service, the spouse is entitled to an annuity of half of the minimum formula annuity earned and accrued to the credit of the employee at the date of death. This annuity is not reduced due to the age of the employee or spouse. The spouse is eligible for this annuity only if the marriage was in effect for at least 10 years. The spouse will receive a minimum annuity of $800 per month if the employee retires with at least 10 years of service or dies in service with at least five years of service. For Tier 2 and Tier 3 members, the annuity payable to the surviving spouse is equal to 66 2/3% of the participant's accrued retirement annuity without a reduction due to age.
Child Annuity:	A child's annuity is provided for an unmarried child of a deceased employee who is under the age of 18, if the child was born before the withdrawal from service. The annuity is $220 per month while the spouse of the deceased employee is alive and $250 per month if the spouse is deceased.

Ordinary Disability Benefit:

This benefit is granted for disabilities incurred other than in performance of an act of duty and is 50% of salary as of the last day worked. The first payment shall be made one month after the disablement occurs provided the employee is not then in receipt of salary. Length of time on disability is limited to a maximum of 25% of the employee's total service or five years, whichever occurs first.

The Fund contributes salary deductions for annuity purposes for the ordinary disability benefit. Such amounts contributed by the Fund after December 31, 2000, while the employee is receiving ordinary disability benefits, are not refundable to the employee and will be used for annuity purposes only.

Duty Disability Benefit:

Any employee who becomes disabled as the result of an injury incurred in the performance of any act of duty has a right to receive a duty disability benefit in the amount of 75% of salary at date of injury, plus $10 a month for each unmarried child less than age 18. Child's duty disability benefit is limited to 15% of the employee's salary as of the date of injury. Duty disability benefits begin one day after the later of the last day worked or the last day paid.

If the disability has resulted from any mental disorder, physical defect or disease which existed at the time such injury was sustained, the duty disability benefit shall be 50% of salary at date of injury. Disablement because of heart attacks, strokes, or any disablement due to heart disease shall not be considered the result of an accident suffered in the performance of duty. However, the employee will receive service credit and the City will contribute salary deductions for annuity purposes if the employee is receiving Workers' Compensation.

A duty disability benefit is payable to age 65 if the disability benefits begin before age 60. For an employee who begins disability on or after age 60, disability benefits will continue for five years. A duty disability benefit which continues for more than five years and which starts before the employee's age 60, will be increased by 10% on January 1st of the sixth year.

The City contributes salary deductions for annuity purposes for the duty disability benefit. Such amounts contributed by the City after December 31, 1981, while the employee is receiving duty disability benefits, are not refundable to the employee and will be used for annuity purposes only.

Refunds:

Tier 1:

An employee who resigns before age 55, or before age 60 with less than 10 years of service, is entitled to all salary deductions accumulated with interest to date of resignation, plus the 0.50% deducted for annuity increase purposes without interest.

Tier 2 and Tier 3:

An employee who resigns before age 62 (or age 60 for Tier 3) without regard to length of service, or who resigns with less than 10 years of service regardless of age, is entitled to all salary deductions accumulated with interest to date of resignation, plus the 0.50% deducted for annuity increase purposes without interest.

All Tiers:

Amounts contributed by the employee, excluding the 0.50% deductions for annuity increase, that have not been paid out as annuity are refundable to the employee's estate with interest to the date of retirement or death, if the employee died in service.

If the annuity of an employee or spouse is less than $800 a month, the employee or spouse may elect to receive a refund in lieu of an annuity.

If unmarried at the time of retirement, the employee is entitled to a refund, with interest, of contributions made for the spouse's annuity.

Plan Year: January 1 through December 31

Statistical

The Statistical Section presents additional information to provide financial users with added historical perspective, context and detail to assist in using the information in the financial statements; and additional analytical information on Plan membership data, retirement benefits and other postemployment benefits.

The schedules beginning on page 105 through page 115 show financial trends information that assist users in understanding and assessing how the Plan's financial position has changed over time. A schedule on page 108 allocates revenues or additions to fiduciary net position by source. A schedule on page 109 allocates expenses or deductions from fiduciary net position by type. The schedule on page 110 shows the refunds of contributions and the schedule on page 111 allocate the total benefits that were paid.

The schedules presented immediately following the financial trends information contain additional analytical information on the level of monthly or annual benefits by type of benefit, by number of retirees, and years of service. A schedule on page 112 provides information on the average monthly benefit payments to new retirees. Schedules on pages 113 and 114 provides information on average employee retirement benefit payable, current retirees and beneficiaries by range of pension amounts, history of retirees and beneficiaries by type of benefit, and covered employees by age and years of service. A schedule on page 115 provides information on Plan membership data.

Changes in Fiduciary Net Position

(Last ten years)

	2018	2017	2016	2015	2014
Additions:					
Employer contributions	$ 349,574,257	$ 261,763,635	$ 157,444,029	$ 157,716,475	$ 158,797,631
Member contributions	138,399,727	134,764,920	130,390,848	131,428,104	129,971,981
Net investment income	(204,974,702)	610,515,096	281,419,146	114,025,290	283,268,612
Other additions		5,393,581	-	-	13,313
Total Additions	$ 282,999,282	$ 1,012,437,232	$ 569,254,023	$ 403,169,869	$ 572,051,537
Deductions:					
Annuities	$ 878,738,782	$ 842,632,392	$ 813,092,340	$ 782,083,805	$ 754,391,331
Disabilities	10,415,725	11,711,092	12,004,051	12,266,647	11,905,700
Healthcare Subsidy	-	-	7,725,538	8,491,284	9,050,883
Refunds	27,043,978	33,830,051	34,575,271	31,685,872	32,325,780
Administrative Expenses	6,638,608	6,473,006	7,056,784	6,701,000	6,567,842
Total Deductions	$ 922,837,093	$ 894,646,541	$ 874,453,984	$ 841,228,608	$ 814,241,536
Net Increase/(Decrease)	(639,837,811)	117,790,691	(305,199,961)	(438,058,739)	(242,189,999)
Beginning of year	4,554,018,287	4,436,227,596	4,741,427,557	5,179,486,296	5,421,676,295
End of year	$ 3,914,180,476	$ 4,554,018,287	$4,436,227,596	$4,741,427,557	$ 5,179,486,296

Changes in Fiduciary Net Position (continued)

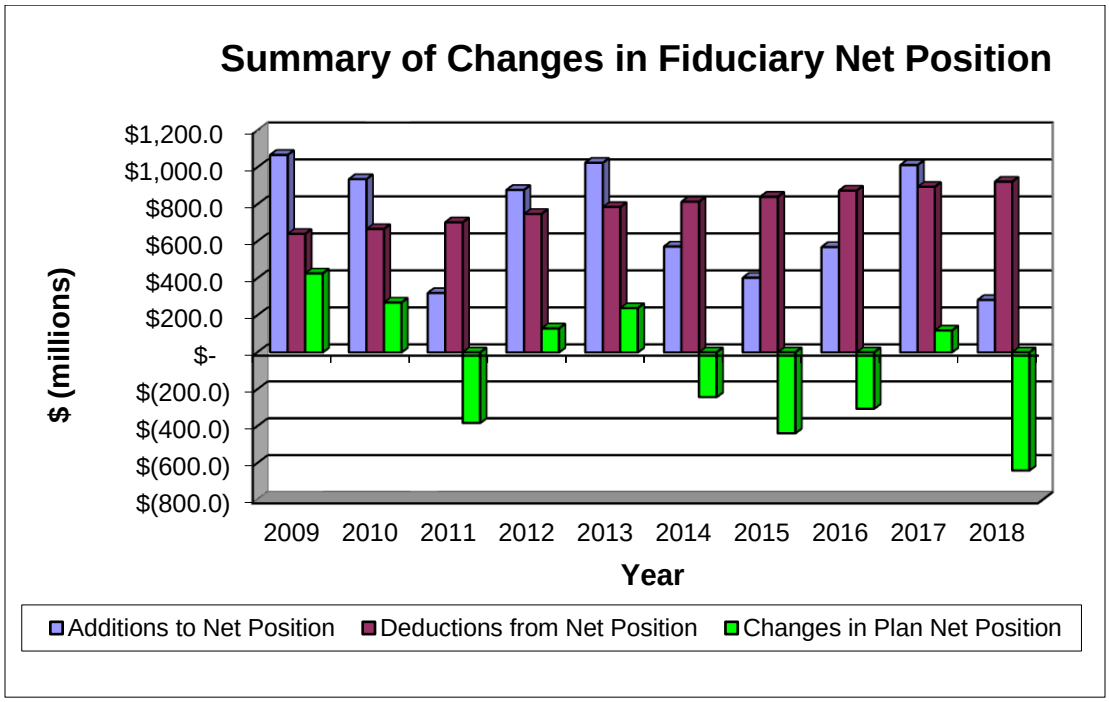
(Last ten years)

	2013	2012	2011	2010	2009
Additions:					
Employer contributions	$ 157,704,971	$ 158,380,709	$ 156,525,374	$ 164,302,005	$ 157,697,608
Member contributions	131,532,173	130,266,293	132,596,417	133,299,542	130,980,605
Net investment income	735,272,432	589,198,468	31,583,226	638,568,991	778,562,620
Other additions	-	-	-	24,435	-
Total Additions	$1,024,509,576	$ 877,845,470	$ 320,705,017	$ 936,194,973	$ 1,067,240,833
Deductions:					
Annuities	$ 723,880,608	$ 681,508,540	$ 640,090,207	$ 607,540,457	$ 583,436,041
Disabilities	12,158,883	13,643,816	13,963,941	13,041,253	11,682,652
Health Care Subsidy	9,508,087	9,522,054	9,516,053	9,549,685	9,651,118
Refunds	33,456,449	36,908,784	32,104,031	29,949,703	28,094,365
Administrative Expenses	6,498,913	6,841,486	7,375,338	6,744,947	7,765,918
Total Deductions	$ 785,502,940	$ 748,424,680	$ 703,049,570	$ 666,826,045	$ 640,630,094
Net Increase/(Decrease)	239,006,636	129,420,790	(382,344,553)	269,368,928	426,610,739
Beginning of year	5,182,669,659	5,053,248,869	5,435,593,422	5,166,224,494	4,739,613,755
End of year	$5,421,676,295	$ 5,182,669,659	$ 5,053,248,869	$ 5,435,593,422	$ 5,166,224,494

Summary of Changes in Fiduciary Net Position

(Last ten years)

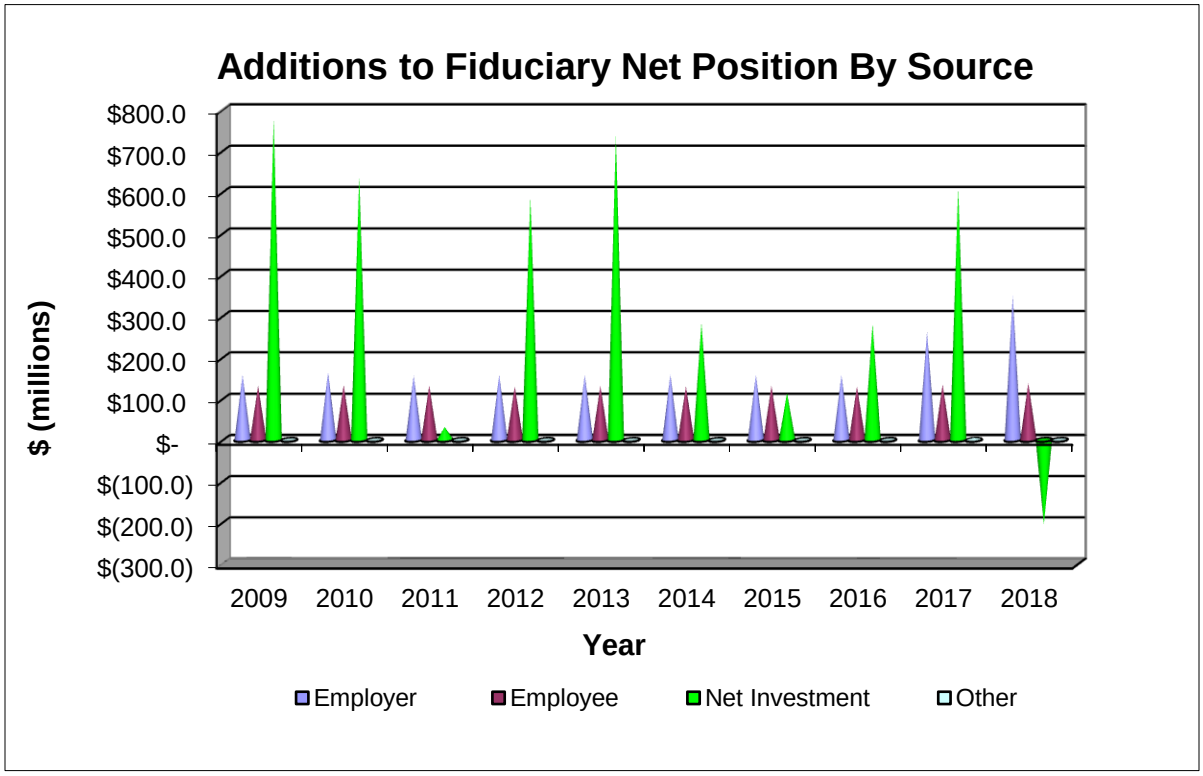
Year	Additions to Net Position	Deductions from Net Position	Increase (Decrease) in Net Position
2009	$ 1,067,240,833	$ 640,630,094	$ 426,610,739
2010	936,194,973	666,826,045	269,368,928
2011	320,705,017	703,049,570	(382,344,553)
2012	877,845,470	748,424,680	129,420,790
2013	1,024,509,576	785,502,940	239,006,636
2014	572,051,537	814,241,536	(242,189,999)
2015	403,169,869	841,228,608	(438,058,739)
2016	569,254,023	874,453,984	(305,199,961)
2017	1,012,437,232	894,646,541	117,790,691
2018	282,999,282	922,837,093	(639,837,811)



Additions to Fiduciary Net Position By Source

(Last ten years)

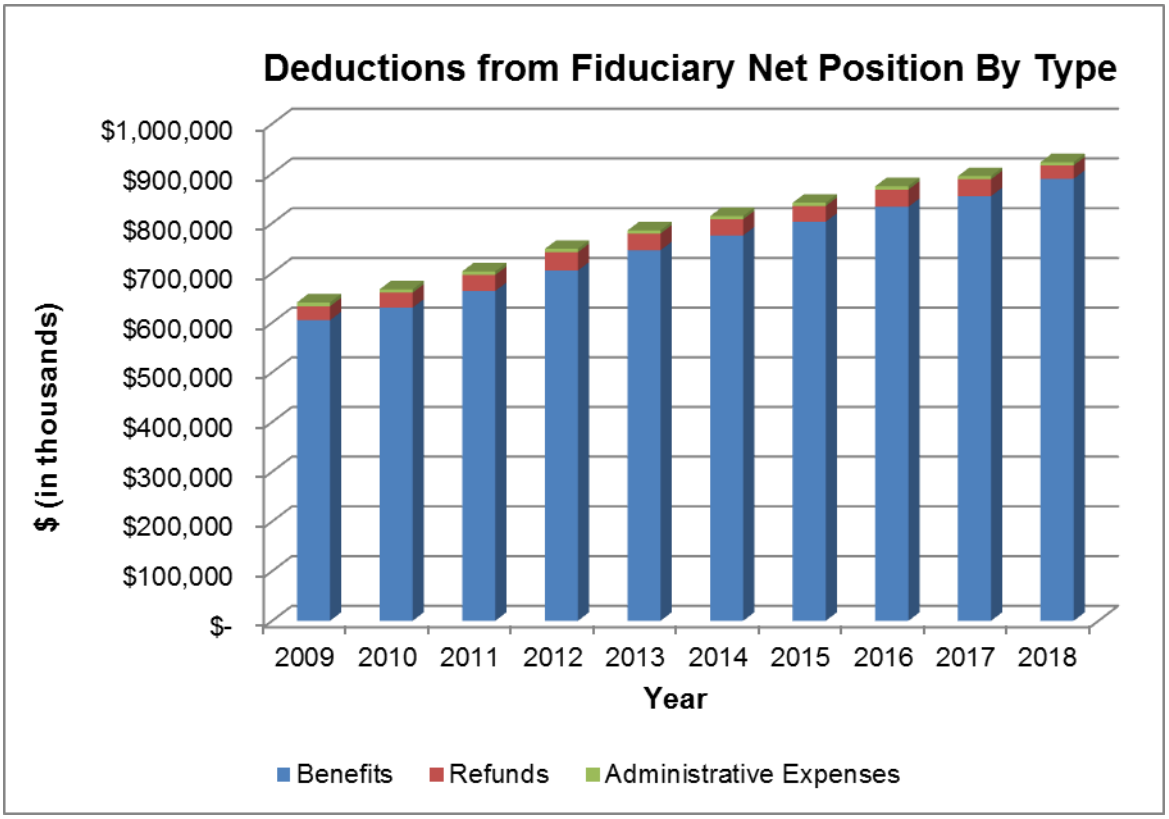
Year	Employer Contributions	Employee Contributions	Investment Income (net of expense)	Other Income	Total
2009	$ 157,697,608	130,980,605	778,562,620	-	$ 1,067,240,833
2010	164,302,005	133,299,542	638,568,991	24,435	936,194,973
2011	156,525,374	132,596,417	31,583,226	-	320,705,017
2012	158,380,709	130,266,293	589,198,468	-	877,845,470
2013	157,704,971	131,532,173	735,272,432	-	1,024,509,576
2014	158,797,631	129,971,981	283,268,612	13,313	572,051,537
2015	157,716,475	131,428,104	114,025,290	-	403,169,869
2016	157,444,029	130,390,848	281,419,146	-	569,254,023
2017	261,763,635	134,764,920	610,515,096	5,393,581	1,012,437,232
2018	349,574,257	138,399,727	(204,974,702)	-	282,999,282



Deductions from Fiduciary Net Position By Type

(Last ten years)

Year	Benefits	Refunds	Administrative Expense	Total
2009	$ 604,769,811	$ 28,094,365	$ 7,765,918	$ 640,630,094
2010	630,131,395	29,949,703	6,744,947	666,826,045
2011	663,570,201	32,104,031	7,375,338	703,049,570
2012	704,674,410	36,908,784	6,841,486	748,424,680
2013	745,547,578	33,456,449	6,498,913	785,502,940
2014	775,347,914	32,325,780	6,567,842	814,241,536
2015	802,841,736	31,685,872	6,701,000	841,228,608
2016	832,821,929	34,575,271	7,056,784	874,453,984
2017	854,343,484	33,830,051	6,473,006	894,646,541
2018	889,154,507	27,043,978	6,638,608	922,837,093



Refunds by Type

(Last ten years)

Year	Separation	Death	Others[1]	Total
2009	$ 24,942,884	2,670,267	481,214	$ 28,094,365
2010	26,888,718	3,269,824	(208,839)	29,949,703
2011	29,482,493	1,976,182	645,356	32,104,031
2012	34,519,018	2,389,915	(149)	36,908,784
2013	30,765,181	2,711,770	(20,502)	33,456,449
2014	29,219,994	3,211,181	(105,395)	32,325,780
2015	27,325,678	4,570,458	(210,264)	31,685,872
2016	30,676,911	3,899,766	(1,406)	34,575,271
2017	31,091,785	3,160,126	(421,860)	33,830,051
2018	25,002,075	2,549,529	(507,626)	27,043,978

[1] Others include transfer of contributions to other Funds and refunds due to error in deductions

Benefits by Type - Last ten years

	2018	2017	2016	2015	2014
Annuities:					
Employee	$ 816,753,591	$ 781,897,484	$ 753,153,639	$ 723,152,347	$ 696,095,106
Surviving Spouse	61,678,713	60,357,230	59,627,061	58,554,347	57,902,663
Children	306,478	377,678	311,640	377,111	393,562
Total Annuities	878,738,782	842,632,392	813,092,340	782,083,805	754,391,331
Disabilities:					
Ordinary	6,717,495	7,351,851	7,685,452	8,315,568	8,067,664
Duty	3,698,230	4,359,241	4,318,599	3,951,079	3,838,036
Total Disabilities	10,415,725	11,711,092	12,004,051	12,266,647	11,905,700
Postemployment Healthcare					
Employee	-	-	6,530,366	7,219,202	7,726,595
Surviving Spouse	-	-	1,194,032	1,270,277	1,319,793
Children	-	-	1,140	1,805	4,495
Total Healthcare Subsidy	-	-	7,725,538	8,491,284	9,050,883
Total Benefits	$ 889,154,507	$ 854,343,484	$ 832,821,929	$ 802,841,736	$ 775,347,914

	2013	2012	2011	2010	2009
Annuities:					
Employee	$ 666,939,420	$ 624,554,190	$ 584,973,939	$ 553,066,295	$ 530,008,332
Surviving Spouse	56,522,097	56,494,913	54,600,246	53,970,603	52,904,482
Children	419,091	459,437	516,022	503,559	523,227
Total Annuities	723,880,608	681,508,540	640,090,207	607,540,457	583,436,041
Disabilities:					
Ordinary	8,161,747	9,477,385	9,708,906	9,274,262	8,290,644
Duty	3,997,136	4,166,431	4,255,035	3,766,991	3,392,008
Total Disabilities	12,158,883	13,643,816	13,963,941	13,041,253	11,682,652
Postemployment Healthcare					
Employee	8,137,318	8,120,476	8,070,084	8,068,820	8,155,184
Surviving Spouse	1,363,359	1,395,783	1,439,177	1,472,885	1,487,337
Children	7,410	5,795	6,792	7,980	8,597
Total Healthcare Subsidy	9,508,087	9,522,054	9,516,053	9,549,685	9,651,118
Total Benefits	$ 745,547,578	$ 704,674,410	$ 663,570,201	$ 630,131,395	$ 604,769,811

History of Average Pension Benefit Payments to New Retirees[1]

(Last ten years)

Retirement Effective Dates		Year of Service 10-14	15-19	20-24	25-29	30 & Over	Total
2009	Average Monthly Benefit at Retirement	$1,407	$1,790	$2,275	$3,255	$ 4,082	$ 2,969
	Average Final Average Salary	$4,664	$4,148	$4,406	$5,005	$ 5,209	$ 4,794
	Number of Active Recipients	57	75	153	92	231	608
2010	Average Monthly Benefit at Retirement	$1,334	$1,835	$2,215	$3,208	$ 4,354	$ 3,129
	Average Final Average Salary	$4,418	$4,311	$4,278	$4,945	$ 5,590	$ 4,933
	Number of Active Recipients	60	77	169	132	287	725
2011	Average Monthly Benefit at Retirement	$1,350	$1,981	$2,432	$3,459	$ 4,696	$ 3,361
	Average Final Average Salary	$4,261	$4,506	$4,661	$5,265	$ 6,046	$ 5,257
	Number of Active Recipients	66	88	193	185	311	843
2012	Average Monthly Benefit at Retirement	$1,295	$2,014	$2,391	$3,362	$ 4,506	$ 3,230
	Average Final Average Salary	$4,400	$4,893	$4,533	$5,094	$ 5,737	$ 5,125
	Number of Active Recipients	93	132	274	254	418	1,171
2013	Average Monthly Benefit at Retirement	$1,304	$1,998	$2,348	$3,259	$ 4,446	$ 3,065
	Average Final Average Salary	$4,456	$4,890	$4,314	$4,953	$ 5,668	$ 5,030
	Number of Active Recipients	104	106	204	216	290	920
2014	Average Monthly Benefit at Retirement	$1,169	$1,760	$2,290	$3,137	$ 4,350	$ 2,891
	Average Final Average Salary	$4,161	$4,528	$4,597	$4,877	$ 5,644	$ 4,921
	Number of Active Recipients	93	92	185	203	223	796
2015	Average Monthly Benefit at Retirement	$1,275	$1,959	$2,279	$3,405	$ 4,446	$ 3,048
	Average Final Average Salary	$4,439	$4,685	$4,387	$5,174	$ 5,724	$ 5,031
	Number of Active Recipients	68	119	171	180	227	765
2016	Average Monthly Benefit at Retirement	$1,347	$1,909	$2,350	$3,383	$ 4,795	$ 3,126
	Average Final Average Salary	$5,096	$4,836	$4,604	$5,199	$ 6,276	$ 5,306
	Number of Active Recipients	83	113	208	199	237	840
2017	Average Monthly Benefit at Retirement	$1,306	$1,938	$2,480	$3,687	$ 4,889	$ 3,273
	Average Final Average Salary	$4,734	$4,860	$4,841	$5,526	$ 6,293	$ 5,434
	Number of Active Recipients	91	122	197	247	245	902
2018	Average Monthly Benefit at Retirement	$1,551	$2,030	$2,741	$3,973	$ 5,285	$ 3,628
	Average Final Average Salary	$5,590	$4,998	$5,247	$6,017	$ 6,854	$ 5,961
	Number of Active Recipients	82	126	167	201	272	848

[1]This schedule excludes reciprocal annuities, money purchase annuities and minimum annuities

Source of Data: Actuarial Valuation and Review as of December 31, 2018

Average Employee Retirement Benefits Payable
(last ten years)

Valuation Date	Average Annual Benefit	Average Current Age Of Retirees	Average Benefit At Retirement Current Year	Average Age At Retirement Current Year	Average Service Years At Retirement Current Year
12/31/2009	$29,960	72.8	$29,843	62.9	23.90
12/31/2010	$31,046	72.8	$31,290	62.2	24.25
12/31/2011	$32,269	72.7	$34,513	62.1	24.86
12/30/2012	$33,423	72.6	$33,508	62.7	24.81
12/31/2013	$34,357	72.6	$31,177	63.0	23.55
12/31/2014	$34,532	72.7	$29,775	62.5	23.35
12/31/2015	$36,277	72.8	$31,686	62.6	23.48
12/30/2016	$37,243	72.9	$32,000	62.0	23.50
12/31/2017	$38,372	72.9	$34,413	62.0	24.16
12/31/2018	$39,559	73.0	$37,678	62.2	24.45

Source of Data: Actuarial Valuation and Review as of December 31, 2018

Current Retirees & Beneficiaries by Range of Pension Amounts

As of December 31, 2018

Amount of Monthly Benefit	Number of Employee Annuitants	Number of Spouse Annuitants	Number of Reversionary Annuitants	Number of Child Annuitants	Total Number of Annuitants
Under $500	741	185	73	102	1,101
$500 - $999	1,491	1,958	40	-	3,489
$1,000 - $1,499	2,742	652	3	-	3,397
$1,500 - $1,999	2,703	479	3	-	3,185
$2,000 - $2,499	1,965	324	-	-	2,289
$2,500 - $2,999	1,890	222	-	-	2,112
$3,000 - $3,499	1,499	92	-	-	1,591
$3,500 - $3,999	1,225	41	-	-	1,266
$4,000 - $4,499	1,209	7	-	-	1,216
$4,500 - $4,999	1,073	1	-	-	1,074
$5,000 - $5,499	1,085	2	-	-	1,087
$5,500 - $5,999	872	-	-	-	872
$6,000 - $6,499	817	-	-	-	817
$6,500 - $6,999	679	-	-	-	679
$7,000 & Over	1,402	-	-	-	1,402
Totals	**21,393**	**3,963**	**119**	**102**	**25,577**

Source of Data: Actuarial Valuation and Review as of December 31, 2018

History of Retirees and Beneficiaries By Type of Benefit

(Last ten years)

Valuation	Annuitants				Disability		Compensation	Reciprocal	
Date	Employee	Spouse	Child	Reversionary*	Ordinary	Duty	Annuitants**	Employee	Spouse
12/31/2009	15,838	4,008	167		306	220	2	2,407	356
12/31/2010	15,961	3,982	173		304	246	2	2,477	364
12/31/2011	16,230	3,910	164	129	346	264	2	2,583	364
12/30/2012	16,874	3,864	149	129	280	250	2	2,740	361
12/30/2013	17,320	3,844	141	138	227	213	2	2,793	363
12/30/2014	17,553	3,798	141	139	195	225	2	2,858	363
12/31/2015	17,697	3,757	118	134	187	213	2	2,887	369
12/30/2016	17,954	3,706	102	128	178	216	2	2,965	379
12/30/2017	18,113	3,633	114	124	162	211	2	3,024	374
12/30/2018	18,304	3,597	102	119	158	164	2	3,089	366

** Prior to December 31, 2011, reversionary annuitants were included with spouse annuitants.*

*** Compensation annuitants also included with spouse annuitants*

Source of Data: Actuarial Valuation and Review as of December 31, 2018

Covered Employees by Age & Years of Service

Attained	Completed Years of Service									
Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Under 20	50	16	-	-	-	-	-	-	-	66
20-24	421	572	13	-	-	-	-	-	-	1,006
25-29	542	1,788	357	5	-	-	-	-	-	2,692
30-34	461	1,690	851	222	33	-	-	-	-	3,257
35-39	352	1,472	791	547	244	60	-	-	-	3,466
40-44	276	1,095	638	588	552	249	38	-	-	3,436
45-49	254	960	647	636	753	653	290	18	-	4,211
50-54	173	753	509	649	803	725	678	175	5	4,470
55-59	120	554	414	610	866	743	617	321	61	4,306
60-64	61	281	267	386	559	490	493	268	116	2,921
65-69	13	47	93	152	199	188	162	101	57	1,012
70 & Over	7	33	36	55	69	61	81	47	53	442
Total	**2,730**	**9,261**	**4,616**	**3,850**	**4,078**	**3,169**	**2,359**	**930**	**292**	**31,285**

Source of Data: Actuarial Valuation and Review as of December 31, 2018

10-Year History of Plan Membership

(Last ten years)

Year	Member Active	Member Inactive	Retirees	Beneficiaries	Total
2009	31,586	12,919	18,251	4,531	67,287
2010	30,726	13,866	18,441	4,519	67,552
2011	31,976	12,762	18,815	4,567	68,120
2012	31,326	13,465	19,617	4,503	68,911
2013	30,647	14,254	20,116	4,486	69,503
2014	30,160	15,495	20,414	4,441	70,510
2015	30,683	16,268	20,586	4,378	71,915
2016	30,296	16,876	20,921	4,315	72,408
2017	30,922	17,549	21,138	4,245	73,854
2018	31,285	17,575	21,393	4,184	74,437

10-Year History of Covered Employees

(Last ten years)

Year	Male Participants	Female Participants	Total Participants
2009	12,598	18,988	31,586
2010	12,377	18,349	30,726
2011	12,828	19,148	31,976
2012	12,696	18,630	31,326
2013	12,622	18,025	30,647
2014	12,464	17,696	30,160
2015	12,618	18,065	30,683
2016	12,482	17,814	30,296
2017	12,518	18,404	30,922
2018	12,424	18,861	31,285

Source of Data: Actuarial Valuation and Review as of December 31, 2018

Appendix A

APPENDIX A

LEGISLATIVE CHANGES IN PLAN PROVISIONS 2009 THROUGH 2018

2009 Session

SB 2520

- Approved February 17, 2009.
- Provides that, before any action is taken by the Board on an application for a duty disability benefit or a widow's compensation or supplemental benefit, the employee or widow shall file a claim with the employer to establish that the disability or death occurred while the employee was acting within the scope of and in the course of his or her duties. Provides an offset of disability benefits for any amounts provided to the employee or surviving spouse as temporary total disability payments, permanent disability payments, a lump sum settlement award, or other payment under the Workers' Compensation Act or the Workers' Occupational Diseases Act. Makes other changes concerning disability benefits.

HB 2557

- Approved August 25, 2009.
- Provides that it is the public policy of the State to encourage pension funds to promote the economy of Illinois through the use of economic opportunity investments within the bounds of financial and fiduciary prudence. Provides that the pension funds submit a report to the Governor and General Assembly by September 1 of each year identifying the economic opportunity investments made by the Fund, the primary location of the business or project, the percentage of the Fund's assets in economic opportunity investments, and the actions the Fund has taken to increase the use of economic opportunity investments.
- Requires the Fund to instruct the investment advisors to utilize investment strategies designed to ensure that all securities transactions are executed in such a manner that the total explicit and implicit costs and the total proceeds in every transaction are the most favorable under the circumstances.

SB 364

- Approved April 3, 2009.
- Requires Board members to file a verified written statement of economic interest annually with the office of the Clerk of Cook County.
- Requires the Board to adopt a policy that sets quantifiable utilization goals for the management of assets in specific asset classes for emerging investment managers. Goals shall be separated by minority ownership, female ownership, and person with a disability ownership.
- Requires that if at least one emerging firm(s) meet criteria of search process, at least one shall be invited to present to the Board for final consideration.
- Requires the Board to adopt a policy that sets forth goals for increasing the racial, ethnic and gender diversity of its fiduciaries, including its consultants and senior staff.
- Requires the Board to adopt a policy that sets forth goals for utilization of WMDBE firms for all contracts and services, based on the percentage of total dollar amount of all contracts let.
- Requires the Board to adopt a policy that sets forth goals for increasing the utilization of minority broker-dealers.
- Requires an annual report to the Governor and General Assembly on the utilization of "emerging firms" as defined by Article 1 of the Pension Code.

2009 Session (continued)

SB 364

- Requires the Board to award all contracts for investment services using a competitive process that is substantially similar to the process required for the procurement of professional services under Article 35 of the Illinois Procurement Code. Requires the Board to adopt a procurement policy which will be posted on the Fund's website and filed with the Illinois Procurement Policy Board.
- Provides that a person may not act as a consultant or investment adviser unless that person is registered as an investment adviser or bank under the federal Investment Advisers Act of 1940.
- Requires investment contracts between the Retirement Board and investment service providers to include certain required information.
- Provides consultant contracts cannot exceed five years in duration; however, incumbent consultant may compete for new contract.
- Requires investment consultants and advisers to disclose all direct and indirect fees, commissions, penalties, and other compensation paid by or on behalf of the investment consultant or adviser in connection with the services provided.
- Requires that a description of every contract let for investment services be posted on the website, including name of entity awarded the contract, amount of contract, total fees paid, and disclosure describing the factors that contributed to the selection.
- Requires the Fund to maintain a website that shall include standard investment reporting, a copy of relevant Board policies, a listing of investment consultants and managers, a notification of any requests for investment services, and the names and e-mail addresses of Board members, Fund directors, and senior staff.
- Requires Board members to attend at least eight hours of ethics training per year and requires each Board to annually certify its member's compliance and submit an annual certification to the Division of Insurance of the Department of Financial and Professional Regulation.
- Prohibits any Fund trustee or employee or their spouses or immediate family living with them to intentionally solicit or accept any gift from any prohibited source as prescribed in Article 10 of the State Officials and Employees Ethics Act, including educational materials and missions and travel expenses for discussing Fund business.
- Provides that any person who knowingly makes any false statement or falsifies or permits falsifying any record of the pension fund in an attempt to defraud is guilty of a Class 3 felony.
- Provides that no person or entity shall retain a person or entity to influence the outcome of an investment decision or the procurement of investment advice to a pension fund for compensation, contingent upon the decision of the Board.
- Requires approval for travel or education mission expense of a Trustee by a majority of the Board prior to mission.

SB 1440

- Approved August 18, 2009.
- Provides that the Fund may, and to the extent required by federal law shall, allow an employee to roll over a refund, lump-sum benefit, or other non-periodic distribution (including the non-taxable portion) directly to any entity that is designated in writing by the person, is qualified under federal law to accept the distribution, and has agreed to accept the distribution.

SB 1705

- Approved August 25, 2009.
- Provides the Municipal fund will send city contributions to the Fire fund for a fireman who was employed by the Chicago Fire Department and participated in the Municipal fund, terminated that service, and received a refund, if the employee establishes the service under the Fire fund.

APPENDIX A

2010 Session

Public Act 96-0889 (SB 1946)

- Approved April 14, 2010.
- Establishes a new tier of benefits for participants that first become members on or after the effective date of January 1, 2011.
  - Final average compensation is based on the average of the highest consecutive eight years within the last ten years of service.
  - Establishes a cap on final average salary of $106,800, as automatically increased by the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
  - Increases eligibility for a retirement annuity:
    - Age 67 with 10 years of service for an unreduced benefit.
    - Age 62 with 10 years of service for a reduced benefit. Reduction is one-half percent for each full month that retirement precedes age 67.
  - Changes provisions for automatic increases in annuity:
    - Increases begin in the year following the later of the first anniversary of the annuity start date and attainment of age 67.
    - Increases are equal to the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
    - Increases are based on the amount of the originally granted benefit (not compounded).
  - Changes benefits provided to surviving spouses:
    - Surviving spouse annuity is equal to 66 2/3 percent of the participant's earned retirement annuity at the date of death.
    - Provides an automatic increase in annuity:
      - Increases begin on January 1 in the year following the commencement of the survivor's annuity if the deceased member died while receiving a retirement annuity and January 1 following the first anniversary of commencement otherwise.
      - Increases are equal to the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
      - Increases are based on the amount of the originally granted benefit (not compounded).
  - Establishes that members that are receiving a retirement annuity and accept a full-time position under the same Article or another Article established under the Illinois Compiled Statutes would have their benefits suspended during employment. Their benefits would be recalculated, if applicable, upon termination of employment.

Public Act 96-1490 (SB 550)

- Approved December 30, 2010.
- Amends certain provisions established in SB1946 that apply to participants that first become members on or after January 1, 2011:
  - Establishes the period for calculating the annual unadjusted percentage increase in the Consumer Price Index-U as the 12-month period ending with September for purposes of capping salary and calculating the automatic increase in annuity percentage.
  - Establishes that the salary cap of $106,800 applies for all purposes under the Code, including the calculation of benefits and employee contributions.
  - Establishes that the survivor's annuity is calculated with no reduction due to age.
  - Establishes that members who withdraw before age 62, or with less than 10 years of service, regardless of age, are entitled to all salary deductions for retirement annuity and spouse annuity accumulated with interest to date of resignation, plus the 0.50 percent deducted for annuity increase purposes without interest.
  - Establishes that increases in annuity for employee annuitants commence on January 1.

APPENDIX A

2011 Session

Public Act 97-0530 (SB 1672)

- Approved August 23, 2011.
- Requires all pension funds and retirement systems subject to the Code to comply with the federal Heroes Earnings Assistance and Relief Tax Act of 2008.

Public Act 97-0609 (SB 1831)

- Approved August 26, 2011.
- Applies to those members hired on or after January 1, 2012.
  - Provides that if a new hire is receiving a retirement annuity or pension and accepts a contractual position to provide services to a governmental entity from which he or she has retired, then that person's annuity or pension will be suspended during that contractual service.
  - Makes it a Class A misdemeanor for a pensioner who is seeking contractual employment to fail to notify certain persons about his or her retirement status before accepting an employment contract.

Public Act 97-0504 (HB 1670)

- Approved August 23, 2011.
- Amends the Open Meetings Act.
    - Requires each elected or appointed member of a public body subject to this Act who is such a member on the effective date of the amendatory Act to successfully complete the electronic training curriculum developed and administered by the Public Access Counselor.
    - Requires those members to complete the training not later than one year after the effective date of the amendatory Act.
    - Requires each elected or appointed member of a public body subject to the Act who becomes such a member after the effective date of the amendatory Act to successfully complete the electronic training curriculum developed and administered by the Public Access Counselor.
  - Requires those members to complete the training not later than the 90th day after the date the member either (i) takes the oath of office, if the member is required to take an oath of office to assume the person's duties as a member of the public body or (ii) otherwise assumes responsibilities as a member of the public body, if the member is not required to take an oath of office to assume the person's duties as a member of the governmental body.
  - Requires each member who successfully completes the curriculum to file a copy of the certificate of completion with the public body.
  - Provides that the failure of one or more members of a public body to complete the training required by this Section does not affect the validity of an action taken by the public body.
  - Provides that an elected or appointed member of a public body subject to this Act who has successfully completed the required training and filed a copy of the certificate of completion with the public body is not required to subsequently complete that training.

APPENDIX A

2012 Session

Public Act 97-0651 (HB 3813)

- Approved and effective January 5, 2012.
- Requires any reasonable suspicion of fraud against the Fund to be reported to the State's Attorney for investigation.
- Changes provisions for Union Leaves of Absence as follows:
  - Service credit can be accrued only for union leaves that begin before the effective date of this amendatory Act.
  - "Any pension plan established by the local labor organization" is defined as any pension plan in which the member can receive credit as a result of his membership in the local labor organization. This is a declaration of existing law.
  - Salary used for calculation of final average salary must be a salary paid by an employer, not by the union. This is a declaration of existing law.
  - Minimum annuity section 11-134 is changed to add to the final average salary the product of (1) final average salary, (2) the average percentage increase in the CPI during the leave of absence, and (3) the number of years of leave of absence. This does not seem to deal with a situation where the employee may have been on leave within the last 10 years but is last with Municipal. It also only amends paragraph (f-1) which applies to those members who go on annuity on or after the attainment of age 60.
  - Does not change that contributions are based on current salary with the union.

Public Act 97-0967 (HB 3969)

- Approved and effective August 16, 2012.
- Applies if the member retired after the effective date with less than 2 years of service in a participating system under the Reciprocal Act after General Assembly service.
- Requires that if the final average salary in a participating system is used to calculate the annuity, the employer must pay the General Assembly Retirement System for any increased cost of the General Assembly annuity that is attributable to the higher salary under the participating system.

2013 Session

Public Act 98-0043 (HB 1584)

- Approved and effective June 28, 2013
- Changes the duration of health insurance supplement payments to eligible employee annuitants to "Beginning July 1,2008, and until such time as the city no longer provides a health care plan for such annuitants or December 31, 2016, whichever comes first.

Public Act 98-0433 (HB 2620)

- Approved and effective August 16, 2013
- Allows for an additional exception to the RFP process for obtaining investment services for "contracts for follow-on funds with the same fund sponsor through close-end funds"

APPENDIX A

2014 Session

Public Act 98-0641 (SB 1922)

- Approved and effective June 9, 2014
- Implements a funding policy designed to achieve 90% funded ratio by 2055
- Provides for incrementally increased employer contribution multiple, which eventually converts to actuarial-based funding.
- Caps the current pension levy at the full required city contribution amount.
- Creates payment obligation to the fund; provides enforcement.
- Provides for incrementally increased employee contributions.
- Tier 1: Ties annual increase in retirement annuity to inflation, subject to 3% cap, delays initial annual increase by one year, and eliminates annual increases in 2017, 2019 and 2025 for most annuitants.
- Tier 2: Reduces minimum retirement age by 2 years, delays the initial annual increase by one year for some retirees, and eliminates the annual increases in 2025.

Public Act 98-1022 (SB 452)

- Approved and effective August 22, 2014
- Requires investment managers and consultants entering into a contract to disclose information on use of vendors owned by minorities, females, and persons with disabilities.
- Requires minority consideration to be "within the bounds of financial and fiduciary prudence."
- Defines "minority investment managers" and requires funds to adopt a policy to increase goals for utilization. Requires annual review.
- Declares it is the public policy of the State to encourage use of minority investment managers.

2015 Session

Public Act 99-0462 (SB 1334)

- Approved August 25, 2015
- Sets aspirational goals that, beginning January 1, 2016, at least 20% of the total funds under management be managed by emerging investment managers and that at least 20% of the investment advisors be minorities, females, and persons with disabilities.
- Sets the aspirational goal that, beginning January 1, 2016, at least 20% of contracts for "information technology services", "accounting services", "insurance brokers", "architectural and engineering services", and "legal services" be awarded to businesses owned by minorities, females, and person with disabilities.

Jones et al. v. Municipal Employees' Annuity and Benefit Fund of Chicago, et al.
Johnson et al. v. Municipal Employees' Annuity and Benefit Fund of Chicago, et al.

- Public Act 98-0641 was ruled unconstitutional by the circuit court on July 24, 2015. On March 24, 2016, the Illinois Supreme Court affirmed the circuit court's decision.
- Restores full automatic annual increase, the date of initial increase and eliminates increase holidays
- For Tier 2, changes retirement age for unreduced benefits back to age 67 and for reduced benefits to age 62
- Eliminates new funding policy

APPENDIX A

2016 Session

Public Act 99-0683 (HB 6030)

- Approved July 29, 2016
- Requires every pension fund or retirement system under the Code to develop and implement, by no later than June 30, 2017, a process to identify annuitants who are deceased. The process shall require the pension fund or retirement system to check for any deceased annuitants at least once per month and shall include the use of commonly accepted methods to identify persons who are deceased, which include but are not limited to, the use of a third party entity that specializes in the identification of deceased persons, the use of data provided by the Social Security Administration, the use of data provided by the Department of Public Health's Office of Vital Records, or the use of any other method that is commonly used by other states to identify deceased persons.

2017 Session

Public Act 100-0023 (SB 0042)

- Approved July 6, 2017 (effective date)
- Creates a new tier of benefit eligibility and contribution requirements for members (Tier 3) who first become members on or after the effective date of the Act. Benefit structure would be consistent with a Tier 2 member, except as reflected below:
    - Members would contribute 11.5%
    - Beginning January 1, 2018, members would contribute the lesser of 11.5% or the normal cost of the accrued benefit calculated on an annual basis; not less than 8.5%
    - Qualified members would be able to retire at 65 years of age undiscounted and 60 to 64 years of age discounted
- A Tier 2 member would have from October 1 to November 15, 2017 to make an irrevocable election to become a Tier 3 member
- Creates an optional benefits structure for certain Tier 2 members. Must be passed by resolution or ordinance by the governing body of the local government.
- Requires law department employees first hired after the effective date of the Act to be members of the Fund.
- The City of Chicago will increase contributions to the Fund from 2018 to 2022 (ramp period) and then begin paying a required contribution to achieve 90% funding in 40 years (2058).
- The Fund's ability to subrogate a disability injury of a member that was caused by a third party.
- Closes the Alternative Annuity for City Officers Plan to officers who first become an elected officer after the effective date of the Act.
- Felony conviction. Any refund to a person who was convicted of a felony that was in relation to their service as a municipal employee, shall be reduced by any benefit received by the person prior to the calculation of the refund. This relates to persons who first became members after the effective date of the Act.

2017 Session (continued)

Public Act 100-0334 (HB0350)

- Approved and effective August 25, 2017
- Provides for the forfeiture of benefits for any person who otherwise would receive a survivor benefit who is convicted of any felony relating to or arising out of or in connection with the service of the member from whom the benefit results
- Provides that this legislation will not affect any right to survivor benefits prior to the effective date of this Act.

Public Act 100-0542 (SB1714)

- Approved and effective November 8, 2017
- Amends the General Provisions Article 1 of the Illinois Pension Code
- Requires an investment consultant to annually disclose to the Board (of a retirement system, pension fund, or investment board) the following:
    - Total searches conducted for investment services in the prior year
    - Total searches conducted for investment services in the prior year that include minority owned, female owned, or businesses owned by persons with a disability (MWDBE), number of MWDBE recommendations made, and amounts awarded to the MWDBE
    - Requires a consultant to disclose any compensation or economic opportunity received in the last 24 months from any investment advisors recommended to or retained by the Board (of a retirement system, pension fund, or investment board).
    - Requires consideration of these disclosures before awarding any contract for consulting services.

2018 Session

Public Act 100-1166 (HB0166)

- Approved and effective 1/4/19
- Trailer bill to SB0042 (Public Act 100-0023)
- Clarifies what qualifies a participant as a Tier 3 member
- Clarifies the member contribution rate once the MEABF achieves 90% funding

End of Report

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