

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO, ILLINOIS



COMPREHENSIVE ANNUAL FINANCIAL REPORT

a component unit of the City of Chicago
for the years ended December 31, 2017 and 2016





Comprehensive Annual Financial Report

A Component Unit
of the City of Chicago
for the years ended
December 31, 2017
and 2016

Prepared by

Regina M. Tuczak

Executive Director

August A. Madonia

Assistant Comptroller

221 North LaSalle Street
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Policemen's Annuity and Benefit Fund

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO

Comprehensive Unit Financial Report
Years Ended December 31, 2017 and 2016

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Introductory Section



Government Finance Officers Association

**Certificate of
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Presented to

**Policemen's Annuity and Benefit
Fund of Chicago, Illinois**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2016

Christopher P. Morill

Executive Director/CEO

Members of the Board
Representing the Public
Carole L. Brown
Haydee Caldero
Carol L. Hamburger, Vice-President
Kurt A. Summers, Jr.

Representing the Active Police
and Disability Beneficiaries
Thomas A. Beyna
Edward M. Wodnicki
Brian E. Wright, Recording Secretary

Representing the Annuity
Kenneth A. Hauser, President

The Retirement Board
of the
Policemen's Annuity and Benefit Fund
City of Chicago

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Aoifinn Devitt
Chief Investment Officer
August A. Madonia
Assistant Comptroller
Peter Orris, M.D.
Physician
David R. Kugler & Associates, Ltd.
Board Counsel
Address Communications
to the Retirement Board

**Retirement Board of the Policemen's
Annuity and Benefit Fund of
Chicago, Illinois**

The Policemen's Annuity and Benefit Fund of Chicago (the Fund) hereby submits the comprehensive annual financial report (CAFR) for the years ended December 31, 2017, and 2016. The Fund assumes responsibility for the accuracy of the data and the completeness and fairness of presentation, including disclosures. To the best of our knowledge and belief, the enclosed information is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the Fund. All disclosures necessary to enable the reader to understand the Fund's financial activities have been included.

Any employee of the City of Chicago employed under the provisions of the municipal personnel ordinance as police service, sworn or designated by law as a peace officer, is generally included in the Policemen's Annuity and Benefit Fund of Chicago. The Fund is governed under Illinois State Statutes (Chapter 40, Pension, Article 5, Illinois Compiled Statutes) and may be amended only by the Illinois Legislature.

The Fund was established January 1, 1922, with the mission of providing retirement benefits to the sworn police members of the Chicago Police Department, their spouses and children. To properly execute this mission the Fund is administered by an eight (8) member Board of Trustees. The Board is composed of four (4) elected members, with one elected from each rank of police officer, sergeant, lieutenant and above, and a member from the retired officers and their surviving spouses. The Mayor of Chicago appoints four members. The Retirement Board then elects a Board President, a Vice-President and a Recording Secretary from its own membership.

The Retirement Board is charged with many duties including: approval of all applications for benefits and annuities, investment of Fund monies in a manner prescribed by the State Statutes and Fund policy, adoption of rules and regulations for the proper conduct of the affairs of the Fund, engaging a certified independent public accountant to conduct an annual audit on the financial results each year and engaging an actuary to perform an annual actuarial valuation of the Fund. Annually, the Fund files financial statements and an actuarial valuation with the State of Illinois Department of Insurance and the City of Chicago, along with other governmental entities as requested. A summary of plan provisions overseen by the Retirement Board, as prescribed in the state statutes, are presented as part of this CAFR.

This report presents the financial activities of the Fund and is composed of five (5) sections:

1. The introductory section contains the table of contents, this transmittal letter, a listing of the Retirement Board members and office staff members, a listing of professional consultants, a listing of investment managers, and a summary Fund organizational chart.
2. The financial section contains the report of the independent auditors, management discussion and analysis, the financial statements and accompanying notes, required supplementary information and accompanying notes and supporting schedules of the Fund;
3. The investment section reports on activity, policy, results, allocation, commissions paid to managers and brokers and includes an investment summary;
4. The actuarial section contains the report of the Fund's actuary with supporting actuarial assumptions, schedules and tables;
5. The statistical section provides membership data for both active members and annuitants of the Fund.

Financial Information

Management of the Fund is responsible for establishing and maintaining an internal control structure designed to maintain reasonable assurance regarding the safekeeping of the Fund's assets from loss, theft or misuse and to ensure that adequate accounting data are compiled to allow for the preparation of financial statements that conform to generally accepted accounting principles. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the valuation of costs and benefits requires estimates and judgments by management. Because the cost of internal control should not exceed the anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of material misstatements. Consideration of the internal controls over financial reporting is included in the auditor's review. The Fund does engage an independent certified public accountant to audit the Fund's financial statements, and the auditor's unqualified audit opinion on the financial statements as of and for the years ended December 31, 2017, and 2016, is included in the financial section.

Users of this report are strongly encouraged to review the **Management's Discussion and Analysis** portion of the financial section in order to obtain a more complete understanding of the Fund's financial condition and activity.

Investment Performance and Policy

The Fund provides benefits through a combination of employer contributions, employee contributions, and income from investments. The Fund's net position held in trust increased by approximately \$257.1 million from December 31, 2016, to December 31, 2017. The Fund's investment assets returned a net fair value gain of 17.15% for 2017, reflecting very strong returns across global equity markets and solid core fixed income performance. This return was comfortably ahead of the Fund's actuarial assumption of 7.25%, which was confirmed by the Board in January 2017, and represented a reduction from the previous assumption of 7.5%. 2017 saw evidence of growth re-emerge across Europe and was reaffirmed in the US and Emerging Markets. This was reflected in markets globally, particularly within the technology and other high growth sectors. Despite some political turmoil and increased geo-political risk in certain regions, US markets warmly welcomed tax reform and its expected impact on corporate profits and were resoundingly positive for the year. The 2017 investment returns built on the strong returns of 2016 (6.7%) and enabled the Fund to grow in size year on year despite using investment income to bridge the gap between contributions and benefits paid. The investment income used was a combination of \$41.1 million in interest and dividends and approximately \$121.6 million in distributions from the Fund's private equity, real estate and infrastructure portfolios, including the proceeds of the sale of the majority of the Fund's private equity portfolio (completed in December 2017) and other redemption proceeds generated through manager turnover.

During 2017 the Fund awarded seven new mandates totaling \$223 m, of which \$93 m (or 42%) were awarded to minority or women owned firms. Over \$180 m (or 80%) of the new allocation was made to firms with a significant Chicago presence, in the long/short equity, infrastructure and private credit arenas. Other managers added included two real estate debt managers and a manager that issues flexible corporate capital. Towards the end of 2017 the Fund prepared to add an additional manager to diversify its SMID Value portfolio and a micro-cap manager to provide return from lower cap stocks.

Overall, the Fund's assets are diversified in several ways, which minimizes the potential for overexposure to individual investments and provides a broad opportunity set for the portfolio, while trying to minimize risk. The Fund has over 40 professional investment management firms investing on behalf of the Fund. These firms make investment decisions for the Fund under the Prudent Person Rule authorized by State statutes and the Investment Policy guidelines adopted by the Board of Trustees. The Board also employs an investment consultant and Chief Investment Officer to monitor investment performance, aid in the selection of investment management firms, and assist in the development of its investment policy.

Generally, investment decisions and strategies attempt to balance optimal performance and risk management, given the Fund's ongoing liquidity needs and constraints. That said, a sustained economic recovery, persistent growth in asset prices and the ongoing availability of diverse sources of investment return remain critical factors in the Fund's ability to meet its future obligations. Although the portfolio is constructed so as to diversify sources of return and risk, it remains exposed to capital markets and a significant correction in the capital markets would negatively impact the Fund's assets in a meaningful way.

Current and Future Developments

Until 2021, based upon statutory funding projections prepared by the Fund's actuary, the Fund is expected to continue in a negative cash flow position such that benefit payments and administrative expenses will most likely exceed contributions from members and the employer. On May 30, 2016, Public Act 099-0506 (PA-0506), became law and introduced very different funding provisions for the Fund. This legislation provides that beginning with the tax levy year 2015, which was collected in taxes paid to the Fund in 2016, the employer shall levy and collect a tax in the annual amount of \$420 million in 2016; \$464 million in 2017; \$500 million in 2018; \$557 million in 2019; and \$579 million in 2020. Beginning in tax levy year 2020, which is payable to the Fund in 2021 when the taxes are collected, contributions by the employer, along with member contributions and investment income are to be an amount sufficient to produce a funded ratio of 90% by 2055.

In addition to PA-0506, other significant legislation was approved and became effective November 29, 2016. The legislation, Public Act 099-0905 (PA-0905), provided a number of benefit changes, including specification of the manner of calculating Tier 2 spousal annuities for Policemen who die in the line-of-duty and those who die in service with at least 1 ½ years of service. PA-0905 also provided that minimum annuities to members with at least 20 years of service and surviving spouse annuities shall be no less than 125% of the federal poverty level. Another significant provision is the Tier 1 automatic cost-of-living increase available to those retired members with birth dates on or after January 1, 1955, and before January 1, 1966. Those members that have at least 20 years of service at retirement, have been retired for at least one year as of January 1, 2017, and have attained the age of 55 were entitled to a 3.0% cost of living increase. In addition, some catch-up provisions were included in the legislation and many retired members in this group received incremental increases based upon a few qualifications including age at retirement and retirement date. Staff of the Fund worked diligently to implement these benefit changes, and by the end of 2017, almost all of the impacted members and surviving spouses had received the increases associated with the legislative changes. Well over 2,000 retired officers and surviving spouses received increases in benefits during 2017 in connection with this legislation.

In 2016, the Fund welcomed approximately 1,112 members to active status, including approximately 22 members returning from inactive or disability status. This increase in active members was met with a very significant volume of retirements and terminations, as collective bargaining agreements between the membership and the City of Chicago included provisions allowing retired members to retain healthcare coverage at no charge, under the employer's medical plan for active employees, until the earlier of the retired officer terminating coverage or reaching the age of Medicare eligibility. Retirement prior to June 1, 2017, was the latest date in which such coverage provisions were available. Subsequent to such date, bargaining unit members retiring between the ages of 55 and 59, electing to take advantage of continued coverage in the active employee medical plan, are required to contribute 2% of their gross retirement annuity to the cost of coverage. In conjunction with these collective bargaining provisions and the June 1, 2017, deadline, the Fund's staff processed approximately 575 member retirements in 2017, the largest volume of retirements in recent years.

With the addition of new members, the Fund has approximately 3,393 and 2,336 Tier 2 members at December 31, 2017, and 2016, respectively. Tier 1 members continue to decline with retirements and terminations, as such members were 9,240 and 9,841, at December 31, 2017, and 2016, respectively. With this mix of additions of active members and large volumes of retirements, particularly in recent years, the number of members of the Fund has grown to 26,901 as of December 31, 2017. This compares to membership numbers of 26,177 as of December 31, 2016; and 25,908 as of December 31, 2015.

The Fund continues to strive for customer service excellence by improving the operational efficiencies and service delivery to the membership. Enhancements to the Fund's pension administration system continue. The Fund also continues to develop and enhance its website, located at www.chipabf.org. The website includes the online estimate program for active members, electronic copies of the Fund's newsletter, information on scheduled meetings of the Board of Trustees, and other important updates, including Trustee election information.

Funding Status

For purposes of funding, the actuarial value of assets and liabilities was \$3,103,989,602 and \$13,093,882,568, respectively, at December 31, 2017. The funded ratio, for purposes of calculating the statutory contribution, remained relatively consistent from 23.74% to 23.71% as of December 31, 2017. On a fair value basis, for purposes of statutory funding, the funded ratio experienced an increase from 22.28% at December 31, 2016, to 23.84% at December 31, 2016.

The improvement in the funding ratio on a fair value basis reflects favorable demographic experience and favorable investment experience in 2017, as compared to the actuarial assumptions. Specifically, salary changes and mortality experience were two large contributions to the actuarial gains, and investment returns significantly exceeded the actuarial assumed rate of return of 7.25%.

Professional Services

The Fund's actuarial valuation, along with other actuarial services, are provided by Gabriel, Roeder, Smith & Company. The annual audit of the financial statements is performed by Mitchell & Titus LLP, Certified Public Accountants. The Fund's investment consultant is NEPC, LLC. A complete listing of all investment managers is detailed in the CAFR's introductory section.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Fund for its comprehensive annual financial report for the fiscal year ended December 31, 2016. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. The report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

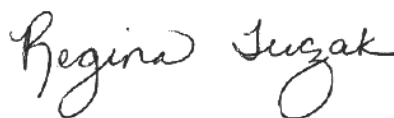
Acknowledgments

In 2017, Trustee James Maloney and Trustee Michael Lappe retired from active service with the Chicago Police Department, due to mandatory retirement provisions. Trustee James Maloney dedicated over 35 years of service to the Chicago Police Department, including the last 18 years as a Lieutenant, and over 12 years of service to the Board of Trustees of the Fund. Trustee Michael Lappe dedicated over 32 years of service to the Chicago Police Department as an Officer, including the last 4 years of service to the Board of Trustees of the Fund. Their dedication to the membership, commitment to the Fund and service to the City of Chicago is greatly appreciated and acknowledged.

On behalf of the Board of Trustees, I wish to express appreciation to the staff and professional consultants who work so effectively to ensure the continued successful operation of the Fund. Gratitude is also extended to the financial reporting and accounting staff that has compiled this report. This report is intended to provide complete and reliable information to the members of the Fund, the employer of the members, the City of Chicago, and other important users of the Fund's financial and demographic information.

I extend my appreciation to all Fund members for their interest and involvement in all plan activities. We are always looking for cost effective ways to better serve the Fund's members and, as always, welcome your comments or suggestions.

Respectfully submitted,



Regina Tuczak
Executive Director
June 29, 2018

RETIREMENT BOARD MEMBERS AND OFFICE STAFF

December 31, 2017

Appointed Trustees

Carole L. Brown
Haydee Caldero
Carol L. Hamburger, Vice President
Kurt A. Summers, Jr .

Elected Trustees

Thomas A. Beyna,
Investment Committee Chairman
Kenneth A. Hauser, President
Edward M. Wodnicki
Brian E. Wright, Recording Secretary

Office Staff Members

Regina Tuczak, Executive Director
Aoifinn Devitt, Chief Investment Officer
August A. Madonia, Assistant Comptroller

Support Staff

Gladys Bernal	Adriana Kiretyan	Richard Muhlbacher
Robert Crawford	Quiana Knapp	Jacqueline Robinson
Angela Curtis	Joseph Kosman	Ivan Rogic
Jonathan Facundo	Justin Kugler	Erwin Santos
Karina Fruin	Kristi Matalik	Carol Vega
Kay Hylton	Anne McGowan	

PROFESSIONAL CONSULTANTS

LEGAL ADVISOR

David R. Kugler, Esquire

MEDICAL ADVISOR

Peter Orris, M.D.

INVESTMENT CONSULTANTS

NEPC, LLC

CONSULTING ACTUARY

Gabriel, Roeder, Smith & Company

AUDITOR

Mitchell & Titus L.L.P.

MASTER CUSTODIAN

The Northern Trust Company

COMMERCIAL BANK

Chase Bank

ABR Chesapeake	HGK Asset Management
Acadian Asset Management, LLC	Invesco Capital Management
Adams Street Partners	Lazard Asset Management, LLC
AG Realty	LM Capital Group
Apollo Real Estate Advisors	Lone Star Funds
Artisan Partners	MacKay Shields LLC
Beach Point Capital Management	Manulife Asset Management
Blueprint Capital Advisors	Mesirow Financial
Brookfield Asset Management	Monroe Capital
CBRE Clarion Securities	Montag & Caldwell
Clareant EDL (Levered) Company	Morgan Stanley Real Estate
Crestline Management	Newport Capital Partners, LLC
Denali Advisors	Northern Trust
Dorchester Private Equity Management, LP	Pluscios Management, LLC
DRA Advisors LLC	SEI PIMCO
Earnest Partners, LLC	Shamrock-Hostmark
Entrust Permal, LLC	Sound Mark Partners, LLC
Fisher Investments	The Carlyle Group
Global Asset Management	UBS Global Asset Management
Global Infrastructure Partners	Voya Investment Management
Grantham, Mayo, Van Otterloo & Co., LLC	Wells Capital Management
Great Lakes Advisors	Wellington Management
HarbourVest Partners, LLC	William Blair & Company

ORGANIZATION CHART

<p>RETIREMENT <u>BOARD OF TRUSTEES</u> Kenneth A. Hauser, President Carol L. Hamburger, Vice-President Brian E. Wright, Recording Secretary Thomas A. Beyna, Investment Committee Chairman Carole L. Brown, Trustee Haydee Caldero, Trustee Kurt A. Summers, Jr., Trustee Edward M. Wodnicki, Trustee</p>
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<p>EXECUTIVE DIRECTOR Regina Tuczak, CPA</p>	<p>CHIEF INVESTMENT OFFICER Aoifinn Devitt</p>
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<p>PROFESSIONAL CONSULTANTS Legal Advisor Medical Advisor Investment Consultants Consulting Actuary Auditor Master Custodian Investment Managers</p>	<p>ASSISTANT COMPTROLLER August A. Madonia</p>
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BENEFIT CALCULATIONS	BENEFIT CLAIMS	BENEFIT COUNSELING	BENEFIT DISBURSEMENTS	DISABILITY MATTERS
Gladys Bernal	Kay Hylton	Jacqueline Robinson	Kris Matalik	Robert Crawford

Information regarding investment professionals that provide services to the Policemen’s Annuity and Benefit Fund of Chicago can be found in the Other Supplementary Information to the Financial Statements (see Schedule of Investment Fees on page 78) and the Investment Section (pages 80 to 93).



Financial Section



MITCHELL TITUS

INDEPENDENT AUDITOR'S REPORT

Board of Trustees
Policemen's Annuity and Benefit Fund of Chicago

Report on the Financial Statements

We have audited the accompanying financial statements of the Policemen's Annuity and Benefit Fund of Chicago (the Fund), a component unit of the City of Chicago, as of and for the years ended December 31, 2017 and 2016, and the related notes to the financial statements, which collectively comprise the Fund's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

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 entity'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 entity'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.

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MITCHELL TITUS

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 financial position of the Fund as of December 31, 2017 and 2016, and the changes in its financial 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 required supplementary information as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who 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 inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Fund's basic financial statements. The schedule of administrative expenses, schedule of consulting costs and schedule of investment fees are presented for purposes of additional analysis and are not a required part of the basic financial statements.

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



MITCHELL TITUS

The information included in the introductory section, the investment section, the actuarial section, and the statistical section as listed in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audits of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Mitchell Titus, LLP

June 28, 2018

The Management's Discussion and Analysis section of this report is intended to serve as an introduction to the financial statements of the Policemen's Annuity and Benefit Fund of Chicago (the Fund) and to supplement the information contained therein.

Overview of Financial Statements and Accompanying Information

The basic financial statements are prepared in accordance with accounting principles generally accepted in the United States of America as established by the Governmental Accounting Standards Board (GASB) and are described below:

- **Statements of Fiduciary Net Position** report the Fund's assets, liabilities, and the resultant net position where assets minus liabilities equal net position held in trust for pension benefits at the end of the year.
- **Statements of Changes in Fiduciary Net Position** show the sources and uses of funds during the calendar year, where additions minus deductions equal the net increase or decrease in net position held in trust for pension benefits for the year.
- **Notes to the Financial Statements** are an integral part of the financial statements and include important information and schedules to provide a more comprehensive understanding of the data provided in the financial statements. Information contained in the note disclosures includes the Fund's accounting policies, descriptions of pension and health benefits and related liabilities, detail of investments and related risks, fund reserves, and various other relevant topics.
- **Required Supplementary Information** presents detailed required historical information and is presented after the Notes to the Financial Statements. This required supplementary information includes data on the employer's net pension liability and changes thereof, employer's contribution and money-weighted rate of return for the pension plan; and information on funding progress and employer's contributions for the Health Insurance Supplement and Staff Retiree Health Plan; along with the other information useful in evaluating the fiduciary net position of the Fund.
- **Supplementary Information** presents the detail on administrative costs of maintaining a defined benefit pension plan.

Financial Highlights

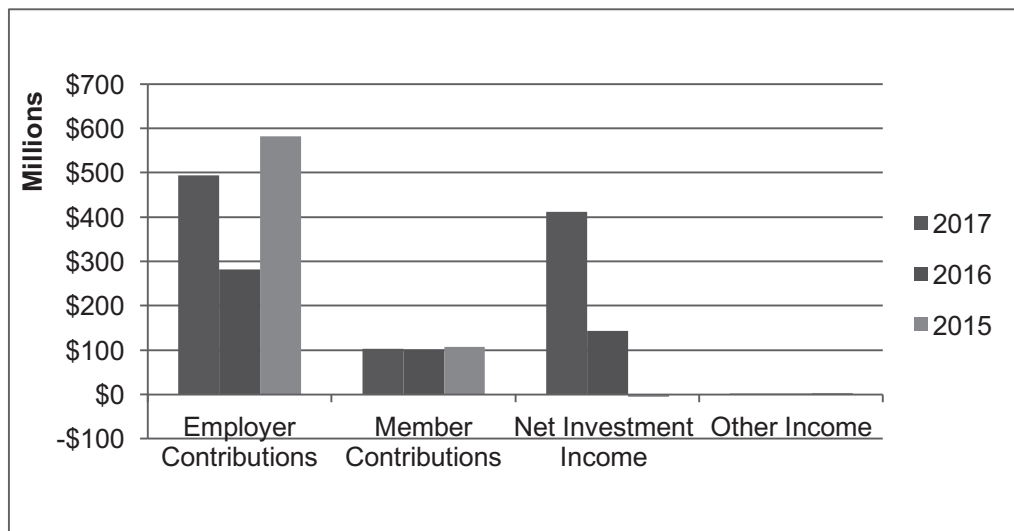
- The fiduciary net position of the Fund increased by \$257.1 million, or 9.0%, to \$3,122.1 million at December 31, 2017. At December 31, 2016, the fiduciary net position of the Fund decreased by \$193.9 million, or 6.3%, to \$2,865.0 million from the December 31, 2015 balance of \$3,058.9 million.

MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Financial Highlights (continued)

- Additions to the Fund are received from investment income and employer and plan member pension contributions. These are the primary funding sources for benefit payments. In 2017, these additions totaled \$1,009.8 million versus \$527.2 million in 2016, which is a 91.5% increase. The Fund experienced strong investment results in 2017, with net income from investing activities of approximately \$412.2 million, which is a significant contributor of the increase. The Fund earned an investment return of 17.15% in 2017, versus a return of 6.66% in 2016. The favorable return in 2017 was mostly attributable to the total equity portfolio returning 29% which comprises over 50% of the Fund's investments. From a financial markets perspective, 2017 was a buoyant year across all global equity markets, driven by renewed evidence of growth in Europe and improving economic indicators in the US and Emerging Markets. A rising interest rate environment, a firming oil price and initial indications of inflation have acted as a check on markets, but overall 2017 was marked by exceptionally low levels of volatility and US markets that gained over 20% (Russell 2000).
- A significant increase in employer contributions was also an important factor in the additions to the Fund. In 2016, with the passing of Public Act 099-0506 (PA 99-0506) on May 30, 2016, the full amount of the 2015 employer contribution receivable of \$579.8 million was not received in 2016. The amount collected was reduced by approximately \$173 million, in accordance with the Illinois Pension Statutes. For financial reporting purposes, this difference of \$173 million was recorded as a reduction to the 2016 employer contributions. In 2017, the employer contributions significantly increased by \$212.9 million, reflecting a full year of contributions required by PA-0506.

ADDITIONS 2015 - 2017

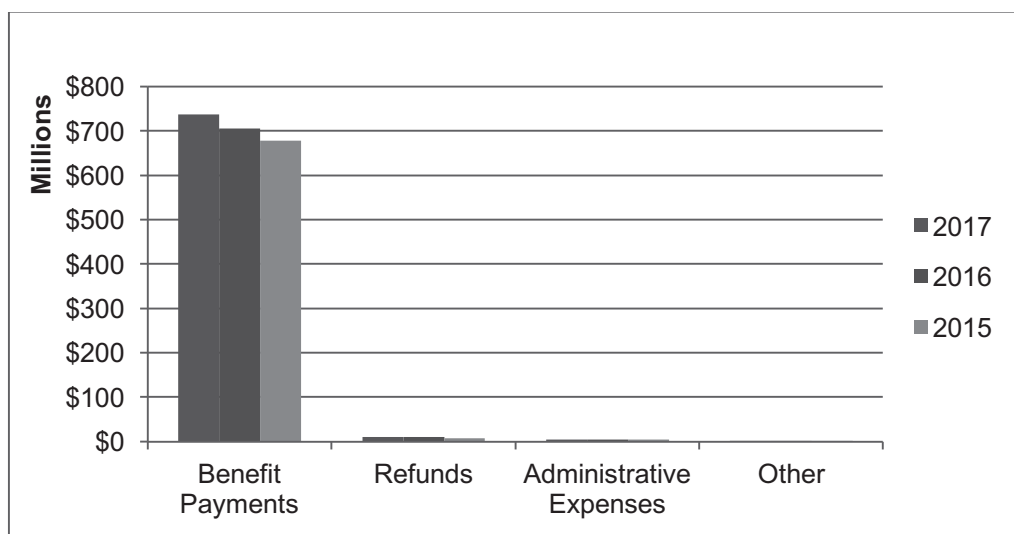


MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Financial Highlights (continued)

- Deductions to the Fund are incurred primarily for the purpose for which the Policemen's Annuity and Benefit Fund of Chicago was created; providing benefits to the police officers of the City and their surviving spouses and children. Deductions consist primarily of pension and disability benefits, death benefits, refunds of employee deductions, and administrative expenses. In 2017, these deductions totaled \$752.7 million and were \$721.1 million in 2016, which is a 4.4% increase. This increase is attributable primarily to the number of retirees and beneficiaries receiving benefit payments, which increased in 2017 by 234 members to 13,628, the highest member count in Fund history.
- Also contributing to the increase in deductions and benefit payments is the enactment of Public Act 99-0905 (PA 99-0905) on November 29, 2016, which enhanced the cost-of-living increases applicable to members born between January 1, 1955, and January 1, 1966, and provided increased benefits to qualifying annuitants such that the minimum annuity paid cannot be less than 125% of the Federal poverty level. Increased benefit payments were made in 2017 to the members impacted; with each legislative provision impacting over 1,000 retirees and surviving spouses.

DEDUCTIONS 2015 - 2017



- Benefit payments, excluding death benefits and refunds, increased by approximately \$31.9 million in 2017 to \$736.0 million from \$704.1 million in 2016. Death benefits and refunds of employee deductions decreased slightly from 2016 to 2017 by approximately \$0.4 million, from \$12.3 million to \$11.9 million, respectively.
- Administrative expenses increased slightly by approximately \$0.07 million, or 1.6%, from \$4.28 million in 2016 to \$4.35 million in 2017. The increased administrative expense was due primarily to increased legal services, and costs associated with computer system upgrades made to the pension administration system.

MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Financial Highlights *(continued)*

- The funding objective of the Fund is to meet its long-term defined pension benefit obligations. The funding ratio of the Fund on a fair value basis, for purposes of statutory funding, experienced an increase from 22.3% at December 31, 2016 to 23.8% at December 31, 2017. The increase reflects favorable demographic experience and favorable investment experience in 2017, as compared to the actuarial assumptions. Specifically, salary changes and mortality experience were two large contributions to the actuarial gains, and investment returns significantly exceeded the assumed rate of 7.25%. For the year ended December 31, 2016, the Fund experienced a decrease in the funding ratio primarily due to assumption changes and legislation, including the impact of changing the funding policy, investment return assumption and inflation rate assumption used in the funding actuarial valuation.
- For accounting and financial reporting pursuant to GASB 67 and 68, which uses a Single Discount Rate that reflects: (1) a long-term expected rate of return on pension plan investments (to the extent that the Fund's fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate as of the measurement date (to the extent that the contributions for use with the long-term expected rate or return are not met), the Fund's net pension liability increased by \$84,323,386 from \$10,248,072,884 as of December 31, 2016, to \$10,332,396,270 at December 31, 2017. Changes in the actuarial assumptions and methods led to the change in the Single Discount Rate from 7.07% to 7.00% (based on the long-term expected rate of return on investments of 7.25% used in the December 31, 2016, and December 31, 2017, actuarial valuations and the long-term municipal bond rate of 3.78% as of December 29, 2016, and 3.31% as of December 30, 2017, respectively).
- In compliance with GASB No. 45, the Fund recognizes a liability for other post-employment benefits (OPEB), which represents health insurance coverage for active and retired Fund employees. Expenses of \$0.50 million and \$0.47 million were recognized in 2017 and 2016, respectively, resulting in a total accrued liability of \$2.95 million and \$2.66 million as of December 31, 2017 and 2016, respectively.

MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Fiduciary Net Position

A summary of fiduciary net position is presented below:

Fiduciary Net Position

(In millions)

As of December 31, 2017, 2016, and 2015

	2017	2016	2015	2017-2016 Change	
				\$	%
Receivables	\$ 497.0	\$ 460.2	\$ 591.6	\$ 36.8	8.0 %
Brokers—unsettled trades	139.7	114.3	89.8	25.4	22.2
Investments, at fair value	2,702.3	2,485.2	2,520.3	217.1	8.7
Invested securities lending cash collateral	146.5	177.8	93.1	(31.3)	(17.6)
Total assets	3,485.5	3,237.5	3,294.8	248.0	7.7
Brokers—unsettled trades	207.3	186.9	135.5	20.4	10.9
Securities lending payable	146.5	177.8	93.1	(31.3)	(17.6)
OPEB obligation	2.9	2.7	2.4	0.2	7.4
Refunds and accounts payable	6.7	5.1	4.9	1.6	31.4
Total liabilities	363.4	372.5	235.9	(9.1)	(2.4)
Net position	\$ 3,122.1	\$ 2,865.0	\$ 3,058.9	\$ 257.1	9.0 %

Overall, the fiduciary net position increased \$257.1 million, or 9.0%, primarily due to the strong investment performance of the Fund's portfolio and an increase in employer contributions. The Fund's investment portfolio earned an investment return of 17.15% in 2017, which includes the results of the Fund's sale of much of its private equity portfolio in December of 2017. The Fund sold the majority of its private equity holdings (which formerly totaled over 4% of the Fund) on the secondary market in a transaction that closed in December 2017. Proceeds of the sale are held in invested cash as of December 31, 2017.

As of December 31, 2017 and 2016, the amount recorded as receivables includes the employer contributions receivable under the provisions of PA 99-0506. The funding provisions of PA 99-0506 are significantly different than PA-1495, which was in effect at December 31, 2015. Pursuant to PA 99-0506, the funding policy requires City contributions to be equal to \$500 million in payment year 2018. Subsequent collections of each tax levy year are as follows: 2019 - \$557 million; and 2020 - \$579 million. For the payment years 2021 through 2055, the employer is required to make percent of pay contributions that, along with member contributions and investment earnings, are expected to generate a projected funded ratio of 90% by plan year-end 2055.

MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Changes in Fiduciary Net Position

The following table reflects a comparative summary of various changes in fiduciary net position:

Changes in Fiduciary Net Position (In millions) Years Ended December 31, 2017, 2016 and 2015

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2017-2016</u> <u>Change</u>	
				<u>\$</u>	<u>%</u>
ADDITIONS					
Member contributions	\$ 103.0	\$ 101.5	\$ 107.6	\$ 1.5	1.5 %
Employer contributions	494.5	281.6	582.3	212.9	75.6
Net investment gain (loss) and investment income	411.4	142.1	(6.0)	269.3	189.5
Securities lending income	0.8	0.6	0.7	0.2	33.3
Miscellaneous income	0.1	1.4	3.1	(1.3)	(92.9)
Total additions	<u>1,009.8</u>	<u>527.2</u>	<u>687.7</u>	<u>482.6</u>	<u>91.5</u>
DEDUCTIONS					
Annuity, disability, and death benefits	737.9	705.6	678.4	32.3	4.6
Refunds of contributions	10.0	10.7	7.8	(0.7)	(6.5)
OPEB expense	0.5	0.5	0.4	-	-
Administrative expenses	4.3	4.3	4.1	-	-
Total deductions	<u>752.7</u>	<u>721.1</u>	<u>690.7</u>	<u>31.6</u>	<u>4.4</u>
Net increase/(decrease)	<u>\$ 257.1</u>	<u>\$ (193.9)</u>	<u>\$ (3.0)</u>	<u>\$ 451.0</u>	<u>(232.6)%</u>
<i>Net position restricted for pension benefits</i>					
Beginning of year	<u>\$ 2,865.0</u>	<u>\$ 3,058.9</u>	<u>\$ 3,062.0</u>	<u>\$ (193.9)</u>	<u>(6.3)%</u>
Ending of year	<u>\$ 3,122.1</u>	<u>\$ 2,865.0</u>	<u>\$ 3,058.9</u>	<u>\$ 257.1</u>	<u>9.0 %</u>

The Fund experienced an increase in fiduciary net position of \$257.1 million in 2017. While an overall increase in the net fiduciary position was experienced, benefit payments also continue to increase each year. The Fund experienced a large increase in retirements of active members in 2017. Contractual terms between the employer and the Fraternal Order of Police, Lodge 7, provided that police officers of at least 55 years of age, retiring prior to June 1, 2017, with over 20 years of service, receive free healthcare until the age of Medicare eligibility. Given these provisions, significant increases in retirements were experienced prior to June 1, 2017.

As noted, due to the enactment of PA 99-0506, the 2015 employer contributions were not collected in their entirety. The amount collected was approximately \$173 million less than recorded as of December 31, 2015. For financial reporting purposes, this amount was reflected as a reduction to the 2016 employer contributions. Employer contributions for 2017 reflect the appropriate funding per the provisions of the Illinois Pension Statutes.

MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Investment Activities

The Board approved certain changes in the asset allocation over the course of 2017. In February 2017, the Board approved a reduction in the target for Global Asset Allocation from 10% to 5%, as well as an increase in the target for private credit from 4% to 8% and for non-U.S. equity from 20% to 21%. The strategic allocation was unchanged for U.S. Equity (21%), Fixed Income and Cash (22%), Real Assets (4%), Private Equity (7%), Real Estate (5%), and Infrastructure (2%).

The Fund continues to prudently implement the strategic allocation approved by the Board of Trustees. In 2017, seven new investment managers were hired, of which, two managers were for real estate debt; two managers were for the long short equity allocation; one manager was for infrastructure; one manager was for a private debt and one manager designed to be a manager of managers for a completion portfolio in private debt.

Investment Returns

Years Ended December 31, 2017, 2016 and 2015

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Total fund (%)	17.15%	6.66%	(0.41)%
Equities	29.10	6.16	(1.30)
Fixed income	4.18	4.36	(1.07)
Alternatives	12.62	8.02	(5.35)
Real estate	5.43	6.01	4.99
Private capital	3.88	7.89	9.72
Cash and cash equivalents	1.00	0.58	0.14

Private capital consists of investments in private equity, private credit and infrastructure. Alternative investments consist of fund of hedge fund investments and global tactical allocations.

Plan Membership

The following table reflects the Plan membership as of December 31, 2017, 2016 and 2015.

Plan Membership

As of December 31, 2017, 2016 and 2015

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2017-2016</u>	
				<u>Change</u>	<u>%</u>
Retirees and beneficiaries receiving benefits	13,628	13,394	13,210	234	1.7%
Active employees	12,633	12,177	12,061	456	3.7
Terminated (inactive members) employees entitled to benefits or refunds of contributions	<u>640</u>	<u>606</u>	<u>637</u>	<u>34</u>	<u>5.6</u>
Total	<u>26,901</u>	<u>26,177</u>	<u>25,908</u>	<u>724</u>	<u>2.8%</u>

MANAGEMENT'S DISCUSSION AND ANALYSIS (unaudited)

Funding Status

The funding ratio of the Fund on a fair value basis, for purposes of statutory funding, experienced an increase from 22.3% at December 31, 2016 to 23.8% at December 31, 2017. During 2014, the Fund adopted GASB No. 67, which requires that that projected benefit payments are required to be disclosed to their actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) a tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average 'AA' credit rating. Using this methodology and accounting standard, the funding ratios of the Fund at December 31, 2017 and 2016, were 23.2% and 21.9%, respectively. Discount rates used in the GASB No. 67 valuation were 7.00% and 7.07% as of December 31, 2017, and 2016, respectively.

In 2016, certain assumptions were changed which included the investment return assumption and the inflation rate assumption. Actuarial information presented as of December 31, 2017 and 2016 reflects these assumption changes.

Effective May 30, 2016, the Illinois Pension Statutes regarding employer contributions to the Fund were changed by Public Act 099-0506. In accordance with Public Act 099-0506, the funding policy requires that contributions from the City of Chicago, as employer, be equal to \$420 million in payment year 2016, \$464 million in payment year 2017; \$500 million in payment year 2018; \$557 million in payment year 2019; and \$579 million in payment year 2020. For payment years after 2020, the City of Chicago is required to make level percent of pay contributions for plan years 2020 through 2055 that, along with member contributions and investment earnings, are expected to generate a projected funded ratio of 90% by plan year-end 2055. The 2016 employer contributions on the statements of fiduciary net position reflect the employer contributions as of December 31, 2015, which were not collectable in 2016 due to the change in Pension Statutes.

As currently provided in the applicable provisions of Public Act 099-0506, the funded ratio of the Fund is projected to increase slowly in future years, with anticipated considerable increases from the employer in years significantly into the future. The Fund continues to be heavily dependent upon employer contributions to fund benefit payments to members now and in future years.

Contact Information

This financial report is designed to provide the employer, plan participants, and others with a general overview of the Fund's finances and to show accountability for the monies received. Questions concerning any data provided in this report can be submitted to:

Ms. Regina M. Tuczak
Executive Director
Policemen's Annuity and Benefit Fund of Chicago
221 N. LaSalle
Suite 1626
Chicago, IL 60601

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Statements of Fiduciary Net Position

As of December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
ASSETS		
Cash	\$ 250	\$ 250
<i>Receivables</i>		
Employer tax levies, net of allowance for loss of \$37,047,204 in 2017 and \$33,657,561 in 2016	486,151,716	449,291,702
Member contributions	5,019,464	4,912,517
Interest and dividends	5,822,061	5,990,469
Accounts receivable—due from brokers	139,702,728	114,331,679
	<u>636,695,969</u>	<u>574,526,367</u>
<i>Investments, at fair value</i>		
U.S. common stock and other equity	483,368,980	495,799,608
Collective investment funds, stock	245,941,487	241,200,644
Collective investment funds, international equities	36,222,231	22,500,765
Collective investment funds, fixed income	170,641,311	146,788,365
Collective investment funds, international fixed income	112,135,048	103,159,063
International equity	720,385,794	572,324,412
U.S. bonds and notes	473,953,673	499,507,343
International bonds and notes	39,339,047	35,949,360
Short-term instruments	156,035,625	94,260,116
Infrastructure	26,855,526	26,030,921
Forward contracts and swaps	27,924,125	19,302,497
Hedge fund-of-funds	100,082,750	20,739,009
Real estate	72,809,905	74,675,801
Venture capital and private equity	36,607,996	132,946,934
	<u>2,702,303,498</u>	<u>2,485,184,838</u>
Invested securities lending cash collateral	146,521,469	177,836,930
Total assets	<u>3,485,521,186</u>	<u>3,237,548,385</u>
LIABILITIES		
Refunds and accounts payable	6,734,372	5,124,515
Trade accounts payable—due to brokers	207,254,031	186,906,407
Securities lending cash collateral	146,521,469	177,836,930
OPEB obligation	2,945,021	2,661,729
Total liabilities	<u>363,454,893</u>	<u>372,529,581</u>
Net position restricted for pension benefits	<u>\$ 3,122,066,293</u>	<u>\$ 2,865,018,804</u>

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

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Statements of Changes in Fiduciary Net Position

For the Years Ended December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
ADDITIONS		
<i>Contributions</i>		
Employer	\$ 494,483,191	\$ 281,583,230
Plan member salary deductions	103,011,250	101,475,864
Total contributions	<u>597,494,441</u>	<u>383,059,094</u>
<i>Investment income</i>		
Net appreciation		
in the fair value of investments	371,090,439	105,369,451
Interest	19,437,993	17,485,571
Dividends	29,272,410	25,491,062
Real estate income	1,749,558	3,092,121
	<u>421,550,400</u>	<u>151,438,205</u>
<i>Investment activity expenses</i>		
Investment management fees	(9,053,006)	(8,528,425)
Custodial fees	(255,135)	(312,500)
Investment consulting and other fees	(821,236)	(507,596)
Total investment activity expenses	<u>(10,129,377)</u>	<u>(9,348,521)</u>
Net income from investing activities	<u>411,421,023</u>	<u>142,089,684</u>
<i>From securities lending activities</i>		
Securities lending income	2,150,479	535,566
Borrower rebates, net of related fees	(1,254,123)	167,649
Bank fees	(126,975)	(93,775)
Net income from securities lending activities	<u>769,381</u>	<u>609,440</u>
Total net investment income	<u>412,190,404</u>	<u>142,699,124</u>
Miscellaneous income	97,239	1,412,770
Total additions	<u>1,009,782,084</u>	<u>527,170,988</u>
DEDUCTIONS		
Pension and disability benefits	736,026,328	704,076,617
Death benefits	1,847,600	1,570,000
Refunds of employee deductions	10,017,655	10,704,842
	<u>747,891,583</u>	<u>716,351,459</u>
Administrative expenses	4,345,134	4,280,280
OPEB expense	497,878	469,482
Total deductions	<u>752,734,595</u>	<u>721,101,221</u>
Net Increase (decrease)	257,047,489	(193,930,233)
<i>Net position restricted for pension benefits</i>		
Beginning of year	<u>2,865,018,804</u>	<u>3,058,949,037</u>
End of year	<u>\$ 3,122,066,293</u>	<u>\$ 2,865,018,804</u>

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

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

Generally accepted accounting principles in the United States (U.S. GAAP), as established by the Governmental Accounting Standards Board (GASB), define a financial reporting entity as consisting of the primary government and its component units, for which the primary government is financially accountable. Financial accountability includes appointing a voting majority of a component unit's governing board, the ability of the primary government to impose its will on the component unit, or a potential for the component unit to provide specific financial benefits to or impose specific financial burdens on the primary government. A primary government may also be financially accountable for its component units.

Based on the above criteria, the Policemen's Annuity and Benefit Fund of Chicago (the Fund, or PABF) is considered to be a component unit of the City of Chicago (the City). The Fund is part of the City's financial reporting entity and is included in the City's fiduciary statement of net assets as pension trust funds.

Basis of Accounting

The Fund's financial statements are prepared on the accrual basis of accounting. Employee and employer contributions are recognized as additions in the period in which employee services are performed. Benefits and refunds are recognized as deductions when payable. Expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made.

Use of Estimates

The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results may differ from those estimates.

Investments

The Fund is authorized to invest in bonds, notes, and other direct obligations of the U.S. Government and U.S. Government agencies; corporate bonds, debentures, and notes; certain notes secured by mortgages, including pass-through securities; common and preferred stocks; certain pooled funds; limited partnerships; real estate; derivatives; currencies and other types of investment vehicles as set forth in the Illinois Compiled Statutes.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES *(continued)*

Method Used to Value Investments

Investments are reported at fair value. Short-term investments are reported at cost, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Fixed-income securities are valued principally using quoted market prices provided by independent pricing services. For collective investments, net asset value (NAV) is determined and certified by the investment managers as of the reporting date. Real estate investments are valued at estimated fair value as determined by the general partner, based upon appraisals provided by the investment manager. Hedge fund, venture capital, private equity, infrastructure, and certain opportunistic investments are reported at estimated fair value as determined by the general partner of the investment vehicle.

Furniture and Office Equipment

Furniture and office equipment are not capitalized as they are immaterial and are charged to expenses in the year of purchase.

Administrative Expenses

Administrative expenses are recorded as incurred and are budgeted and approved by the Fund's Board of Trustees. Administrative expenses are funded by employer contributions.

Income Taxes

Income earned by the Fund is not subject to federal income taxes.

Securities Lending Transactions

Cash received as collateral on securities lending transactions and investments made with that cash are reported as assets in the statements of fiduciary net position at fair value. Securities received as collateral are reported as assets only if the Fund is able to pledge or sell them without a borrower default. Liabilities resulting from these transactions are reported in the statements of fiduciary net position.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES *(continued)*

Recent Accounting Pronouncements

The following standards were adopted by the Fund during 2017 and 2016:

GASB Statement No. 82, *Pension Issues*, was established to address certain issues that have been raised with respect to GASB Statements No. 67, 68, and 73. Specifically, this Statement addresses issues regarding (1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contributions requirements. During the year ended December 31, 2017, the Fund adopted GASB Statement No. 82. Implementation had no impact on the reporting amounts in the Statements of Fiduciary Net Position.

GASB Statement No. 72, *Fair Value Measurement and Application*, was effective for the Fund beginning with its year ending December 31, 2016. The objective of this Statement is to address accounting and financial reporting issues related to fair value measurements. The Statement also provides guidance for determining a fair value measurement for financial reporting purposes and for applying fair value to certain investments and disclosures related to all fair value measurements.

Other accounting standards that the Fund is currently reviewing for applicability and potential impact on the financial statements include:

GASB Statement No. 75, *Accounting and Financial Reporting for Post-Retirement Benefits Other Than Pension Plans* was issued in June of 2015. The primary objective of this Statement is to improve accounting and financial reporting by government entities for post-retirement benefits other than pensions. The Fund will adopt GASB No. 75 for its December 31, 2018, financial statements.

GASB Statement No. 87, *Leases* was issued in June of 2017. The primary objective of this Statement is to improve accounting and financial reporting for leases by government entities. This Statement will require recognition of certain leases that were previously categorized as operating leases. The Fund will adopt GASB No. 87 for its December 31, 2019, financial statements.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 2 PENSION PLAN

Plan Description and Contribution Information

PABF is the administrator of a defined benefit, single-employer pension plan with a defined contribution minimum for the purpose of providing benefits to the police officers of the City and their widows and children. Any City employee employed under the provisions of the municipal personnel ordinance as police service is covered by the Fund. The defined benefits, as well as the employer and employee contribution levels, are mandated in Illinois Compiled Statutes (40 ILCS Act 5, Article 5) and may be amended only by the Illinois State Legislature. The Fund is governed by an eight-member Board of Trustees (four appointed by the City, three elected by the policemen, and one elected by the annuitants) whose duties are to administer the Fund under the Illinois Pension Code. The City's payrolls for employees covered by the Fund for the years ended December 31, 2017 and 2016 were \$1,150,406,094 and \$1,119,526,987, respectively. At December 31, 2017 and 2016, the Fund's membership consisted of the following:

	<u>2017</u>	<u>2016</u>
Active employees	12,633	12,177
Retirees and beneficiaries currently receiving benefits	13,628	13,394
Terminated employees entitled to benefits or a refund of contributions, but not yet receiving them	<u>640</u>	<u>606</u>
	<u>26,901</u>	<u>26,177</u>

The Fund provides retirement benefits as well as death and disability benefits. Employees age 50 or older with at least 10 years of service are entitled to receive a money purchase annuity and partial City contributions if they have completed less than 20 years of service. The mandatory retirement age for a participant is 63. Employees age 50 or older with at least 20 years of service are entitled to receive a minimum formula annuity of 2.5% per year for the first 20 years of service, plus 2.5% per year for each following year or fraction thereof times the final average salary (highest average annual salary for any four consecutive years within the last 10 years of service immediately preceding the date of retirement). The annuity shall not exceed 75% of the highest average annual salary.

For members with at least 20 years of service, the monthly annuity increases by 3% of the original annuity at the first of the month following the later of the attainment of age 55 or the first anniversary of retirement, and by 3% on each January 1 thereafter, if the recipient was born before January 1, 1955.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 2 PENSION PLAN *(continued)*

Plan Description and Contribution Information *(continued)*

Effective November 29, 2016, Public Act 99-0905 (PA 99-0905) became law. This Act extended the 3% annual cost-of-living increase to participants born after December 31, 1954, but before January 1, 1966, first payable at the later of age 55 or one year from retirement date. For members who retired prior to December 31, 2016, the annual cost-of-living increases were payable as of January 1, 2017, but no retroactive increases prior to such date were to be provided. In addition, under PA 99-0905, the minimum benefit for annuitants and widows cannot be less than 125% of the Federal poverty level.

If the recipient was born after January 1, 1966, the monthly annuity increases by 1.5% of the original annuity at the first of the month following the later of the attainment of age 60 or the first anniversary of retirement, and 1.5% on each January 1 thereafter, but will not exceed a total of 30%. Members first hired after January 1, 2011, are subject to different provisions within their defined benefit pension plan. The new provisions include a minimum retirement age of 55, a final average salary calculation based upon 96 consecutive months within the last 120 months of employment, an annual salary cap for purposes of calculating a pension benefit, and cost-of-living increases for a pension benefit that include considerations related to the Consumer Price Index for urban consumers.

Covered employees are required to contribute 9.0% of their salary to the Fund. If an employee leaves covered employment without qualifying for an annuity, accumulated contributions are refunded with interest.

Commencing with the City tax levy year beginning in 2016, legislation in place at December 31, 2016, provides for fixed dollar City contributions for payment years 2016 to 2020, and level percent of pay contributions for years 2021 to 2055. Beginning with payment year 2021, the funding policy requires that future employer contributions, employee contributions and other Fund income are sufficient to produce a funding goal of 90% by the fiscal year end 2055, based upon the actuarial value of Fund assets and application of certain required actuarial assumptions and methodologies.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 2 PENSION PLAN *(continued)*

Plan Description and Contribution Information *(continued)*

The actuarial calculation utilized and reported to the City for its tax levy in 2015 requires that assets are marked-to-market at March 30, 2011, and the actuarial value of assets be based upon a five-year smoothing of investment gains and losses incurred in fiscal years ending after March 30, 2011. The actuarial value of assets at December 31, 2016, reflects that assets were marked to the fair market value of assets at January 1, 2012, and all related investment gains and losses through January 1, 2012, were recognized. Investment gains and losses for the years ended December 31, 2012, 2013, 2014, 2015 and 2016, are recognized at a rate of 20% per year over a five-year period. For purposes of the actuarial asset valuation, resetting the actuarial value of assets to the fair market value of assets at January 1, 2012, instead of March 30, 2011, did not impact the statutory contribution requirement for 2016 and 2017.

The total pension liability at December 31, 2017 and 2016, was \$13,454,462,563 and \$13,113,091,688, respectively. The plan fiduciary net position at December 31, 2017 and 2016 was \$3,122,066,293 and \$2,865,018,804, respectively. The net pension liability at December 31, 2017 and 2016 was \$10,332,396,270 and \$10,248,072,884, respectively. The Single Discount Rate of 7.00% required by GASB Statement No. 67 as of December 31, 2017, was based on a long-term expected rate of return on pension plan investments of 7.25% and a long-term municipal bond rate of 3.31%. The Single Discount Rate of 7.07% as of December 31, 2016, was based on a long-term expected rate of return on pension plan investments of 7.25% and a long-term municipal bond rate of 3.78%.

NOTE 3 HEALTH INSURANCE SUPPLEMENT

Plan Description and Contribution Information

The City offered group health benefits, as was provided, to annuitants and their eligible dependents, which expired on December 31, 2016 (part or all of the City portion and related subsidy paid by the Fund is subject to ongoing court review).

Premiums were established by the City, with the City paying a significant portion of the cost of health coverage and the remaining amount paid by all annuitants participating in the City's health care plans. Prior to December 31, 2016, the Fund paid the City on behalf of each of the annuitants who choose to participate in any of the City's health care plans, up to a maximum of \$95 per month from July 1, 2009 through December 31, 2016, for each annuitant who did not qualify to receive Medicare benefits; and up to a maximum of \$65 per month from July 1, 2009 through December 31, 2016, for each annuitant who qualify to receive Medicare benefits. These subsidy rates expired on December 31, 2016.

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Years Ended December 31, 2017 and 2016

NOTE 3 HEALTH INSURANCE SUPPLEMENT *(continued)*

Plan Description and Contribution Information *(continued)*

Effective in 2017, pursuant to the June 29, 2017, Appellate Court order, certain retirees are entitled to receive the 1983 provided subsidies of \$55 per month if non-Medicare-eligible and \$21 per month if Medicare-eligible subsidies. This obligation is not reflected as an actuarial accrued liability as of December 31, 2017, or 2016, as the matter remains in the Circuit Court to determine the mechanics and specific members eligible for the requisite payments.

The disclosures herein assume that for valuation purposes the subsidy rates for the health insurance supplement in effect in 2016 ended on at December 31, 2016.

The supplemental payments by the Fund in 2016 were included in employer contributions on the statements of changes in fiduciary net position. The supplemental healthcare benefits were not dependent upon inflation, as the benefits paid were a fixed dollar amount.

The health insurance supplement was financed with current contributions on a pay-as-you-go basis. There was no separate healthcare account or assets to pay the health insurance supplement.

At December 31, 2016, the number of annuitants or surviving spouses who had subsidized health insurance totaled 10,268. Of the 3,126 remaining annuitants or surviving spouses, at December 31, 2016, substantially all were eligible for subsidized health insurance prior to December 31, 2016, subject to their election of such benefits, and successful completion of the City's enrollment procedures, which included certificate of insurability or an annual exam. Additionally, of the 606 terminated employees who were entitled to benefits or a refund at December 31, 2016, approximately 60 of the terminated employees were eligible for subsidized health insurance prior to December 31, 2016, subject to their election of such benefits and successful completion of the City's enrollment procedures. The annual required contribution represented a level of funding that, if paid on an ongoing basis, was projected to cover normal costs each year and amortize any unfunded actuarial liabilities over a period not to exceed 30 years. The estimated City contribution represented the expected benefit payments for the health insurance supplement. In 2016, the Fund received contributions of \$9,155,514.

Contributions to the health insurance supplement were equal to the insurance subsidy payments to the City in. There were no net assets available for the health insurance supplement at December 31, 2017, or 2016.

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NOTE 3 HEALTH INSURANCE SUPPLEMENT *(continued)*

Funded Status and Funding Progress

The funded status of the Fund's health care plans as offered by the City as of December 31, 2017 and 2016, were as follows:

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ([b-a]/c)
12/31/17	-	\$ -	\$ -	0.00	\$1,150,406,094	0.00%
12/31/16	-	\$ -	\$ -	0.00	\$1,119,526,987	0.00%

The schedule of funding progress, presented as Required Supplementary Information (RSI) following the notes to the financial statements, presented multi-year trend information regarding the actuarial values of the Healthcare Insurance Fund assets and the ratios to the AALs for benefits.

NOTE 4 CASH AND INVESTMENT RISK

Cash

The bank balance and carrying amount of the Fund's deposits at December 31, 2017, were \$510,442 and \$(127,263) respectively; and \$609,155 and \$(726,201) at December 31, 2016, respectively. These balances excluded \$250 of petty cash. The bank balance at December 31, 2017 and 2016 is on deposit with the City Treasurer and is insured or collateralized by securities held by the City Treasurer in the Fund's name.

Investment Policy

The Trustees assume the responsibility for establishing the Fund's investment policy. The Fund's overall investment policy is based on the following principles established by the Trustees:

- Maintain a long-term investment horizon for the Fund
- Diversify investments across several asset classes

The Trustees have indicated interest in developing a risk policy statement in parallel to the Fund's investment policy. The policy would highlight those risks managed at the Fund level and those managed by external managers. The risk policy would also state the types of risks that are monitored and how they are measured. Until such policy is developed by PABF staff and adopted by the Board, there is no formal policy relating to specific investment-related risks.

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NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Money-Weighted Rate of Return

For the years ended December 31, 2017 and 2016, the annual money-weighted rate of return on the plan investments, net of investment expense, was 16.7% and 6.6%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Investment Summary

The following table presents a summary of the Fund's investments by type at December 31, 2017 and 2016:

	<u>2017</u>	<u>2016</u>
Government and agency fixed income	\$ 227,353,917	\$ 226,704,847
Corporate fixed income	285,938,803	308,751,856
U.S. common collective fixed-income funds	170,641,311	146,788,365
Global common collective fixed-income funds	112,135,048	103,159,063
Global common collective equity funds	13,853,401	146,411,345
U.S. equities	483,368,980	495,799,608
U.S. common collective stock funds	232,088,086	94,789,299
International equity common collective funds	36,222,231	22,500,765
Foreign equities	720,385,794	572,324,412
Pooled short-term investment funds	118,519,186	57,098,582
Infrastructure	26,855,526	26,030,921
Real estate	72,809,905	74,675,801
Venture capital	36,607,996	132,946,934
Forward contracts and swaps	27,924,125	19,302,497
Hedge fund-of-funds	100,082,750	20,739,009
Cash and cash equivalents	37,516,439	37,161,534
Total investments at fair value	<u>\$ 2,702,303,498</u>	<u>\$ 2,485,184,838</u>

There are no individual investments held by the Fund that represented 5% or more of net position held in trust for pension benefits, except for the Fund's investment in the MFB Northern Trust Collective Russell 1000 Index Fund – Non Lending, which amounted to \$232,088,086 as of December 31, 2017, and MFO GMO Global Asset Allocation Fund, which amounted to \$146,411,345 at December 31, 2016. There are no insurance contracts excluded from plan assets.

The Fund sold the majority of its private equity holdings (which formerly totaled over 4% of the Fund) on the secondary market in a transaction that closed in December 2017. The Fund realized a loss on the transaction, which is reflected in the net appreciation (depreciation) in the fair value of investments on the statement of changes in fiduciary net position of the Fund for the year ended December 31, 2017. The realized loss was not material to the financial statements of the Fund.

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Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Investment Summary *(continued)*

The Fund's investments were managed by approximately 49 external investment managers during 2017 and 2016, with additional services provided by an external investment consultant. The Fund does not employ any internal investment managers; therefore, its investments are not managed internally. The Fund does not have a formal policy regarding the credit risk of its external managers or investment consultant.

Fair Value Measurements

The Fund categorizes the fair value measurements of its investments based on the hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure an asset's fair value. Fair value is the amount that would be received to sell the investment in an orderly transaction between market participants at the measurement date (i.e., exit price). The fair value measurements are determined within a framework that utilizes a three-tier hierarchy, which maximizes the use of observable inputs and minimizes the use of unobservable inputs. Investments measured and reported at fair value are classified and disclosed in one of the following categories:

- Level 1:* Unadjusted quoted prices in active markets for identical assets.
- Level 2:* Inputs other than quoted prices that are observable for the asset, either directly or indirectly. These inputs include:
 - a. quoted prices for similar assets in active markets;
 - b. quoted prices for identical or similar assets in markets that are not active;
 - c. inputs other than quoted prices that are observable for the asset;
 - d. inputs that are derived principally from or corroborated by observable market data.
- Level 3:* Inputs that are unobservable for the asset. The valuation of these investments requires significant judgment due to the absence of quoted market values, inherent lack of liquidity, and changes in market conditions.

The Fund's investments that are valued using the NAV per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy. These investments do not have a readily determinable fair value.

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NOTE 4 CASH AND INVESTMENT RISK (continued)

Fair Value Measurements (continued)

The recurring fair value measurements for the year ended December 31, 2017 are as follows:

Investments by fair value level	Totals	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
<i>Equities</i>				
U.S. common stock and other equity	\$ 483,368,980	\$ 482,323,881	\$ 1,045,099	\$ -
Collective investment funds, stock	232,088,086	-	232,088,086	-
International equity	720,385,794	720,231,846	39,507	114,441
<i>Fixed income</i>				
U.S. bonds and notes	473,953,673	-	473,953,673	-
International bonds and notes	39,339,047	-	39,339,047	-
Cash equivalents and short-term instruments	156,035,625	25,815,852	130,219,773	-
Forward contracts and swaps	27,924,125	-	27,924,125	-
Real estate	15,099,845	15,099,845	-	-
Subtotal	2,148,195,175	\$ 1,243,471,424	\$ 904,609,310	\$ 114,441
Investments measured at net asset value				
Collective investment funds, stock	13,853,401			
Collective investment funds, international equities	36,222,231			
Collective investment funds, fixed	170,641,311			
Collective investment funds, international fixed	112,135,048			
Infrastructure	26,855,526			
Hedge fund-of-funds	100,082,750			
Real estate	57,710,060			
Venture capital and private equity	36,607,996			
Subtotal	554,108,323			
Total	\$ 2,702,303,498			

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO

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Years Ended December 31, 2017 and 2016

The recurring fair value measurements for the year ended December 31, 2016 are as follows:

Investments by fair value level	Fair Value Measurements Using			
	Totals	Level 1	Level 2	Level 3
Equities				
U.S. common stock and other equity	\$ 495,799,608	\$ 494,927,389	\$ 872,219	\$ -
Collective investment funds, stock	94,789,299	-	94,789,299	-
International equity	572,324,412	570,355,417	1,862,886	106,109
Fixed income				
U.S. bonds and notes	499,507,343	-	499,507,343	-
International bonds and notes	35,949,360	-	35,743,794	205,566
Short-term instruments				
Forward contracts and swaps	94,260,116	1,306,181	83,374,345	9,579,590
Real estate	19,302,497	-	19,302,497	-
	14,019,818	14,019,818	-	-
Subtotal	<u>1,825,952,453</u>	<u>\$1,080,608,805</u>	<u>\$ 735,452,383</u>	<u>\$ 9,891,265</u>
Investments measured at net asset value				
Collective investment funds, stock	146,411,345			
Collective investment funds, international equities	22,500,765			
Collective investment funds, fixed	146,788,365			
Collective investment funds, international fixed	103,159,063			
Infrastructure	26,030,921			
Hedge fund-of-funds	20,739,009			
Real estate	60,655,983			
Venture capital and private equity	132,946,934			
Subtotal	<u>659,232,385</u>			
Total	<u>\$2,485,184,838</u>			

Equity investments classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets issued by pricing vendors.

Equity, fixed-income securities, and investment derivative instruments classified in Level 2 of the fair market hierarchy are valued using either a bid evaluation or a matrix pricing technique maintained by various pricing vendors. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities’ relationship to benchmark quoted prices.

Equity and corporate bonds classified in Level 3 of the fair value hierarchy are securities whose stated market price is unobservable by the market place. Many of these securities are priced by the issuers of industry groups. These prices are obtained from various pricing sources by the Fund’s custodian bank.

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NOTE 4 CASH AND INVESTMENT RISK (continued)

Fair Value Measurements (continued)

Investments measured at NAV for fair value are not subject to level classification. The following table summarizes the Fund's investments in certain entities that measure NAV per share as fair value measurement as of December 31, 2017 and 2016:

2017	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Collective investment funds, stock	\$ 13,853,401	\$ -	As needed	Daily
Collective investment funds, international equities	36,222,232	-	As needed	Daily
Collective investment funds, fixed	170,641,311	3,000,000	-	-
Collective investment funds, international fixed	112,135,049	6,450,460	-	-
Infrastructure	26,855,526	77,475,701	-	-
Hedge fund-of-funds	100,082,750	-	Quarterly	Up to 65 days
Real estate	57,710,060	43,426,524	-	-
Venture capital and private equity	36,607,996	67,740,126	-	-
	<u>\$ 554,108,325</u>			

2016	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Collective investment funds, stock	\$ 146,411,345	\$ -	As needed	Up to 90 days
Collective investment funds, international equities	22,500,765	-	As needed	Up to 90 days
Collective investment funds, fixed	146,788,365	13,754,709	-	-
Collective investment funds, international fixed	103,159,063	9,718,018	-	-
Infrastructure	26,030,921	20,289,623	-	-
Hedge fund-of-funds	20,739,009	-	As needed	Up to 90 days
Real estate	60,655,983	28,246,222	-	-
Venture capital and private equity	132,946,934	43,781,695	-	-
	<u>\$ 659,232,385</u>			

Collective investment funds, stock and international equities: There are two funds at December 31, 2017 and 2016, which invest in equities diversified across all sectors.

Collective investment funds, fixed and international fixed: There are seven funds at December 31, 2017 and 2016, that invest in a variety of fixed income markets through various investments. Two of these funds are not eligible for redemption as of December 31, 2017, and four of these funds were not eligible for redemption as of December 31, 2016.

Infrastructure: There are three funds at December 31, 2017, and 2016, that invest in a variety of infrastructure assets through various investments. These funds are not eligible for redemption.

Hedge fund-of-funds: There are three funds at December 31, 2017, and one fund at December 31, 2016, that invest in a select group of underlying managers that implement a number of different alternative investment strategies and invest in a variety of markets through limited partnerships, limited liability companies and other investment entities. One of the funds was not available for redemption as of December 31, 2017.

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Fair Value Measurements *(continued)*

Real estate, venture capital and private equity: The real estate investments consist of 17 and 15 core, value-add, and opportunistic real estate funds as of December 31, 2017 and 2016, respectively. The private market partnerships consist of 4 and 12 limited partnership interests as of December 31, 2017, and 2016, respectively. These funds invest in equity or debt securities of privately held companies. Real estate closed-end funds and private market partnerships are not eligible for redemption.

Investment Risks

The Fund's investments are subject to certain types of risks, including interest rate risk, credit risk, custodial credit risk and foreign currency risk. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the value of investment securities will occur in the near term. The changes could materially affect the amounts reported in the statements of fiduciary net position.

Interest rate risk—Interest rate risk is the risk that the fair value of debt securities decreases due to increases in the prevailing market interest rate. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The Fund does not have a formal policy regarding interest rate risk. The Fund attempts to mitigate its exposure to fair value loss arising from increasing interest rates by diversifying its fixed-income investment strategy and by allocation to several investment managers. The Fund engaged six such managers in 2017 and 2016, respectively. Each investment manager is required to determine the maturities of all fixed-income securities in their portfolio. Additionally, guidelines are provided to the external investment managers, including a target duration range that is consistent with each investment manager's respective strategy.

The following tables show the segmented time distribution of the Fund's investments into time periods of maturities based on the investments' cash flows.

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NOTE 4 CASH AND INVESTMENT RISK (continued)

Investment Risks (continued)

At December 31, 2017, the Fund had the following investments and maturities related to certain fixed-income securities (bonds and notes):

Investment Type	Fair Value	Investment Maturities			
		Less than 1 Year	1 to 6 Years	7 to 10 Years	More than 10 Years
Asset-backed securities	\$ 37,842,129	\$ -	\$ 6,171,983	\$ 9,273,085	\$ 22,397,061
Bank loans	20,295,764	-	9,808,649	10,487,115	-
Commercial mortgage-backed securities	21,791,026	10,844	1,664,113	884,077	19,231,992
Corporate bonds	193,659,978	4,670,201	81,031,730	70,897,190	37,060,857
Corporate convertible bonds	1,420,269	-	98,550	-	1,321,719
Government agency securities	15,426,463	516,966	12,940,975	1,189,016	779,506
Government bonds	114,345,111	4,385,907	58,989,842	34,380,073	16,589,289
Government mortgage-backed securities	94,247,724	45,935	197,079	3,707,245	90,297,465
Index-linked government funds	1,508,198	-	-	1,508,198	-
Municipal/ provincial bonds	6,547,637	307,378	4,059,362	317,719	1,863,178
Non-government-backed collateralized mortgage obligations	6,208,421	-	662,343	137,803	5,408,275
	<u>\$ 513,292,720</u>	<u>\$ 9,937,231</u>	<u>\$ 175,624,626</u>	<u>\$ 132,781,521</u>	<u>\$ 194,949,342</u>

At December 31, 2016, the Fund had the following investments and maturities related to certain fixed-income securities (bonds and notes):

Investment Type	Fair Value	Investment Maturities			
		Less than 1 Year	1 to 6 Years	7 to 10 Years	More than 10 Years
Asset-backed securities	\$ 45,178,048	\$ -	\$ 16,381,597	\$ 11,057,555	\$ 17,738,896
Bank loans	13,093,827	-	7,913,447	5,180,380	-
Collateralized bonds	440,881	-	-	440,881	-
Commercial mortgage-backed securities	17,372,571	-	423,751	-	16,948,820
Corporate bonds	210,502,452	6,818,290	85,852,339	78,490,919	39,340,904
Corporate convertible bonds	827,900	-	-	-	827,900
Government agency securities	12,838,322	1,097,506	9,849,769	1,344,482	546,565
Government bonds	101,680,668	5,705,983	54,689,954	29,717,036	11,567,695
Government mortgage-backed securities	111,881,845	-	953,552	3,235,351	107,692,942
Index-linked government funds	2,121,045	658,388	-	1,462,657	-
Municipal principal bonds	11,430,275	980,805	3,395,488	3,657,269	3,396,713
Non-government-backed collateralized mortgage obligations	8,088,869	-	604,122	127,742	7,357,005
	<u>\$ 535,456,703</u>	<u>\$ 15,260,972</u>	<u>\$ 180,064,019</u>	<u>\$ 134,714,272</u>	<u>\$ 205,417,440</u>

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK (continued)Investment Risks (continued)

Credit risk—Credit risk is the risk that the issuer or other counterparty to an investment will not fulfill its obligations. One measure of credit risk is the quality ratings issued by national ratings agencies, such as Moody's Investors Services (Moody's) and Standard & Poor's Financial Services. The Fund does not have a formal policy in regard to aggregate credit quality of fixed-income holdings. The Fund utilizes external investment management firms to invest in fixed-income securities and credit quality is addressed within the guidelines of the mandate for each of the managers. If a holding falls below specific guideline requirements, the manager will either sell the security or will inform the Fund of the lower rating and why the manager believes that it is prudent to continue to hold the security as they believe that the security will return to minimum constraints.

The following table provides information on the credit ratings associated with the Fund's investments in debt securities. Rates were obtained from Moody's:

	<u>Fair Value</u>	
	<u>2017</u>	<u>2016</u>
<i>Quality Rating</i>		
Aaa	\$ 154,954,935	\$ 127,930,782
Aa	14,428,275	16,566,496
A	54,846,339	49,183,786
Baa	92,278,349	92,520,970
Ba	46,221,457	50,167,529
B	12,584,345	19,806,403
Not rated	38,625,051	43,240,461
Caa through C	<u>3,081,798</u>	<u>6,029,044</u>
Total credit risk of U.S. corporate fixed income	417,020,549	405,445,471
U.S. Govt. fixed income securities - explicitly guaranteed	95,169,983	129,541,822
U.S. Govt. agency securities-not rated	<u>1,102,188</u>	<u>469,410</u>
	<u>\$ 513,292,720</u>	<u>\$ 535,456,703</u>

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Investment Risks *(continued)*

Custodial credit risk—Custodial credit risk applies to investments, cash, and certificates of deposit. For an investment, custodial credit risk is the risk that, in the event of the failure of the counterparty, the Fund will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. For cash and certificates of deposit, custodial credit risk is the risk that in the event of a bank failure, the Fund's deposits may not be returned. As of December 31, 2017 and 2016, cash deposits of \$1,670,530 and \$1,914,773, respectively, were exposed to custodial credit risk as uninsured and uncollateralized. The Fund does not have a formal policy regarding custodial credit risk.

Foreign currency risk—Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK (continued)Investment Risks (continued)

The Fund does not have a formal investment policy governing foreign currency risk, but does manage its exposure to loss in the fair value of investments by requiring managers of foreign investments to maintain diversified portfolios. The Fund's equity and fixed-income portfolios include investments that are subject to foreign currency risk. Such investments include non-U.S. equities, government bonds, corporate bonds, and derivative instruments. Additionally, some of the Fund's investment managers at least partially hedge foreign currency exchange risk. The Fund's exposure to foreign currency risk is as follows:

	Fair Value	
	2017	2016
<i>Currency</i>		
Argentine Peso	\$ 188,558	\$ -
Australian Dollar	10,973,972	11,549,806
Brazilian Real	11,302,358	8,883,073
British Pound Sterling	66,864,387	49,368,589
Canadian Dollar	26,963,324	22,848,558
Chinese Yuan Renminbi	-	364,340
Colombian Peso	4,672,423	2,679,240
Czech Koruna	2,316,617	2,073,423
Danish Krone	8,199,833	3,136,715
Egyptian Pound	102,496	-
Euro Currency Unit	153,451,415	120,461,649
Hong Kong Dollar	83,534,023	52,323,482
Hungarian Forint	1,965,744	1,494,111
Indian Rupee	12,070,610	11,465,440
Indonesian Rupiah	13,622,440	11,227,055
Japanese Yen	109,147,306	89,918,206
Malaysian Ringgit	4,596,619	2,097,909
Mexican Peso	11,113,254	7,108,251
New Israeli Shekel	1,708,394	1,737,511
New Romanian Leu	-	(4,596)
New Taiwan Dollar	32,291,927	20,810,065
New Zealand Dollar	(3,093,813)	1,223,206
Norwegian Krone	6,916,987	3,402,275
Philippine Peso	4,128,072	2,604,894
Polish Zloty	217,813	308,369
Qatari Rial	44,129	59,164
Russian Ruble	(2,448,023)	(698,370)
Singapore Dollar	2,451,282	(87,158)
South African Rand	13,214,950	9,990,898
South Korean Won	27,363,439	19,980,028
Swedish Krona	10,508,565	13,202,433
Swiss Franc	20,960,059	18,609,062
Thai Baht	3,773,013	4,246,312
Turkish Lira	5,188,258	5,080,808
Total investments in foreign currency	\$ 644,310,431	\$ 497,464,748

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Derivatives

The Fund's investment managers may enter into derivative transactions as permitted by their guidelines. A derivative financial instrument is an investment whose payoff depends on the value of an underlying instrument such as bond or stock prices, a market index, or commodity prices. Derivative financial instruments 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 the underlying element of the derivative will cause the value of a financial instrument to decrease or become more costly to settle. Most of the derivative transactions executed by the Fund's investment managers are related to currency through foreign exchange contracts, the vast majority of which is for hedging purposes, and interest rates through interest rate futures and forward contracts, the purpose of which is mostly duration management. In addition to derivative transactions executed directly by the Fund's investment managers, the Fund also holds interests in collective funds, hedge funds, and private equity funds, which may engage in derivative transactions. The Fund does not directly purchase derivatives with borrowed funds.

Futures contracts—The Fund's external investment managers enter into futures contracts in the normal course of investing activities to manage market risk associated with the Fund's fixed-income investments and to achieve overall investment portfolio objectives. These contracts involve elements of market risk in excess of amounts recognized in the statements of fiduciary net position. The credit risk associated with these contracts is minimal, as they are traded on organized exchanges and settled daily.

At December 31, 2017, the Fund had interest rate futures contracts to purchase U.S. Treasury securities with notional costs of \$23,494,315. At December 31, 2017, the Fund also had interest rate futures contracts to (sell) U.S. Treasury securities, Australian Treasury securities, United Kingdom bonds, and Canadian bonds with notional amounts of \$(97,747,016), \$(502,414), \$(2,325,406), and \$(744,844), respectively. At December 31, 2016, the Fund had interest rate futures contracts to purchase U.S. Treasury securities and Australian Treasury securities with notional amounts of \$21,514,247 and \$1,525,084, respectively. At December 31, 2016, the Fund also had interest rate futures contracts to sell U.S. Treasury securities with notional amounts of \$102,285,217.

The fair value of futures contracts in the statements of fiduciary net position was zero at December 31, 2017 and 2016, as settlements are by cash daily.

The Fund had net investment earnings of \$105,632 and \$698,656 on futures contracts in 2017 and 2016, respectively. These earnings (losses) are accounted for as net appreciation (depreciation) in fair value of investments.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Derivatives *(continued)*

Interest rate and credit default swaps—The Fund's external investment managers utilize interest rate and credit default swaps in the management of the Fund's fixed-income portfolio. Swap agreements are contractual agreements between two or more parties in which each party agrees to exchange sets of cash flows based on certain agreed-upon parameters. The holder is exposed to credit risk for nonperformance and market risk for changes in interest rates. Gains and losses on swaps are determined based on fair values and are recorded in the statements of changes in fiduciary net position. The notional value of credit default swaps was \$22,509,662 and \$23,510,287 as of December 31, 2017 and 2016, respectively. The notional value of inflation and interest rate swaps was \$3,075,000 and \$8,323,099 as of December 31, 2017 and 2016, respectively. The fair value of swaps outstanding at December 31, 2017 and 2016 was a net liability of \$470,624 and \$254,930, respectively. Investment loss from holdings and sales of interest rate and credit default swaps was \$157,314 and \$592,425 in 2017 and 2016, respectively. These losses are included in net appreciation (depreciation) in the fair value of investments in the statements of changes in fiduciary net position.

Foreign exchange contracts—The Fund's external investment managers utilize foreign currency forward contracts, primarily for hedging purposes. Foreign currency forward contracts are contractual agreements to buy or sell a specific amount of a foreign currency at a certain date for an agreed price. As the fair value of the underlying foreign currency varies from the contractual agreed price, the Fund records an unrealized gain or loss. The holder is exposed to credit risk for nonperformance and to market risk for changes in interest rates. The Fund had pending foreign currency purchases and sales that included positions with various currencies primarily including Australian dollars, Brazilian real, British pound, Canadian dollars, Chinese yuan renminbi, Colombian pesos, Denmark krone, Euros, Egypt pound, Hong Kong dollars, Indian rupee, Indonesian rupiah, Israel shekel, Japanese yen, Malaysian ringgit, Mexican pesos, Romanian new leu, New Taiwan dollar, New Zealand dollar, Norwegian krone, Philippine peso, Polish zloty, Russian ruble, Singapore dollars, South African rand, South Korean won, Swedish krona, Swiss francs, Thailand baht, Turkish lira, and U.S. dollars at December 31, 2017 and 2016. Total pending foreign currency forward purchases and (sales) had notional values of \$97,753,406 and \$(98,799,706), respectively, at December 31, 2017, and \$70,653,866 and \$(69,968,004), respectively, at December 31, 2016.

The Fund had a net unrealized (loss) gain on pending foreign currency forward contracts of \$(1,046,300) and \$685,862 at December 31, 2017 and 2016, respectively, which is reflected in the fair value of the investments on the statements of fiduciary net position. Investment loss from holdings and sales of foreign currency forward contracts was \$2,628,562 and \$346,052 in 2017 and 2016, respectively.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 4 CASH AND INVESTMENT RISK *(continued)*

Derivatives *(continued)*

Forward interest rate contracts: The Fund's external investment managers entered into forward contracts to purchase or sell bond securities during 2017 and 2016. Forward contracts are contracts for delayed delivery of securities in which the seller agrees to make delivery at a specified future date of a specified instrument, at a specified price or yield. The holder is exposed to credit risk for nonperformance and to market risk for changes in interest rates.

These instruments involve, to varying degrees, elements of credit risk in excess of the amount recognized in the statements of fiduciary net position. The Fund's external investment managers attempt to mitigate this credit risk through structured trading with reputable parties.

At December 31, 2017, the Fund held forward contracts to buy U.S. TIPS (Treasury Inflation Protected Securities) and U.S treasury Strips with fair values of \$26,984,932, and one contract to buy Luxembourg treasury bonds with a fair value of \$505,048. The Fund also held forward contracts to (sell) U.S. TIPS, U.S. Treasury notes and U.S. Treasury Strips with fair values of \$(23,809,793), and one contract to (sell) Luxembourg treasury bonds with a fair value of \$(507,889). At December 31, 2016, the Fund held forward contracts to buy U.S. TIPS with fair values of \$18,555,372, and the Fund also held forward contracts to sell U.S. TIPS and U.S. Treasury notes with fair values of \$17,783,462. The unrealized gain on these contracts was \$40,462 and \$90,195 at December 31, 2017 and 2016, respectively. Investment (loss) income from holdings and sales of interest rate forward contracts was \$(143,903) and \$272,982 in 2017 and 2016, respectively. The investment income are included in net appreciation in fair value of investments in the statements of changes in fiduciary net position.

Investment Management Fees

Investment management fees from equity and fixed-income managers, including one of the collective funds, one of the private equity managers, and the cash manager, are included in investment management fees on the statements of changes in fiduciary net position. Investment management fees from all other collective funds, short-term investments, infrastructure, hedge, real estate, venture capital and private equity are reflected in the net investment income from such investment products. Such investment management fees are not significant to the financial statements.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 5 SECURITIES LENDING PROGRAM

State statutes and Board of Trustees policies permit the Fund to lend some of its securities to broker/dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future. The Fund's securities lending agent, Deutsche Bank AG, New York Branch (Deutsche Bank), lends securities of the type on loan at year end for collateral in the form of US Dollar cash, securities issued by or guaranteed as to principal and interest by the U.S. Government, its agencies, instrumentalities and establishment, and non-U.S. sovereign debt securities representing obligations of an Organization for Economic Cooperation and Development (OECD) country having a fair value equal to or exceeding 102% of the value of the loaned securities and 105% for non-U.S. securities. The contract with Deutsche Bank provides for indemnification for the Fund with respect to any shortfall between liquidation proceeds and the fair market value of: (1) in respect to lending transactions, the securities subject to such transaction, or (2) in the case of reverse transactions, the amount of cash deposited with a counterparty with respect to such transaction. The terms of liquidation proceeds, fair market value and reverse transactions are more specifically defined in the agency securities lending agreement.

All securities loaned can be terminated on demand by either the Fund or the borrower, although the average term of the Fund's loans was approximately one day as of December 31, 2017 and 2016. At December 31, 2017 and 2016, cash collateral was reinvested in indemnified repurchase agreements which had an interest sensitivity of 3.48 days and 83.55 days, respectively. The Fund cannot pledge or sell collateral securities received unless the borrower defaults.

Loans outstanding as of December 31, 2017 and 2016 were as follows:

	<u>2017</u>	<u>2016</u>
Fair value of securities loaned	\$ 143,322,338	\$174,015,213
Fair value reinvested of cash collateral from borrowers	146,521,469	177,836,930
Fair value of non-cash collateral from borrowers	16,961,681	-

As of December 31, 2017 and 2016, the Fund had limited credit risk exposure to borrowers because the amounts owed to the borrowers exceeded the amounts owed to the Fund.

NOTE 6 UNFUNDED INVESTMENT COMMITMENTS

The Fund had unfunded commitments of approximately \$198 million and \$116 million at December 31, 2017 and 2016, respectively, in connection with real estate, infrastructure, private equity and collective commingled fund investments.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 7 POST-RETIREMENT BENEFITS OF THE FUND—STAFF RETIREE HEALTH PLAN

Plan Description

The Policemen's Annuity and Benefit Fund of Chicago (PABF), as an employer, administers a single-employer defined benefit post-retirement healthcare plan (Staff Retiree Health Plan). The Staff Retiree Health Plan provides lifetime health and dental insurance for eligible retirees and their spouses through PABF's group health insurance plan, which covers both active and retired members. As of December 31, 2017, 13 retirees were in the Staff Retiree Health Plan and 20 active employees could be eligible at retirement. As of December 31, 2016, 12 retirees were in the Staff Retiree Health Plan and 18 active employees could be eligible at retirement. Benefit subsidy provisions have been established by PABF's Board of Trustees. The amount of the subsidy varies according to a retiree's years of service with PABF and the coverages elected. These benefit subsidy provisions can be modified or terminated at the sole discretion of the PABF Board.

Funding Policy

The required contribution is based on projected pay-as-you-go financing requirements. For 2017 and 2016, PABF contributed approximately \$214,586 and \$181,612, respectively, to the Staff Retiree Health Plan for current premiums, inclusive of an implicit subsidy of \$32,126 and \$24,169, for 2017 and 2016, respectively. For 2017 and 2016, members receiving benefits contributed approximately \$96,748 and \$89,702, respectively, to the Staff Retiree Health Plan for current premiums.

Annual OPEB Cost and Net OPEB Obligation

PABF's annual Other Post-Employment Benefit (OPEB) expense is calculated based on the Annual Required Contribution (ARC) of the employer, an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal costs each year and amortize any unfunded actuarial liabilities over a period not to exceed 30 years. The amortization period is open.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 7 POST-RETIREMENT BENEFITS OF THE FUND—STAFF RETIREE HEALTH PLAN *(continued)*

Annual OPEB Cost and Net OPEB Obligation *(continued)*

The following table shows the components of PABF's annual OPEB cost for 2017 and 2016, the amount actually contributed to the Staff Retiree Health Plan, and changes in PABF's net OPEB obligation to the Staff Retiree Health Plan:

	<u>2017</u>	<u>2016</u>
Annual required contribution	\$ 476,401	\$ 450,328
Interest on net OPEB obligation	119,778	106,824
Adjustment to annual required contribution	<u>(98,301)</u>	<u>(87,670)</u>
Annual OPEB expense	497,878	469,482
Employer contributions made	<u>(214,586)</u>	<u>(181,612)</u>
Increase in net OPEB obligation	283,292	287,870
Net OPEB obligation at beginning of year	<u>2,661,729</u>	<u>2,373,859</u>
Net OPEB obligation at end of year	<u>\$ 2,945,021</u>	<u>\$ 2,661,729</u>

The annual OPEB cost, the percentage of annual OPEB cost contributed to the Staff Retiree Health Plan, and the net OPEB obligation for 2017 and 2016 are as follows:

<u>Year Ended</u>	<u>Annual OPEB Cost</u>	<u>Percentage of Annual OPEB Cost Contributed</u>	<u>Net OPEB Obligation</u>
12/31/2017	\$ 497,878	43.1%	\$ 2,945,021
12/31/2016	469,482	38.7	2,661,729

Funded Status and Funding Progress

The funded status of PABF's Staff Retiree Health Plan as of December 31, 2017 and 2016, is as follows:

<u>Actuarial Valuation Date</u>	<u>Actuarial Value of Assets (a)</u>	<u>Actuarial Accrued (AAL) Entry Age (b)</u>	<u>Unfunded AAL (UAAL) (b-a)</u>	<u>Funded Ratio (a/b)</u>	<u>Covered Payroll (c)</u>	<u>UAAL as a Percentage of Covered Payroll ([b-a]/c)</u>
12/31/17	-	\$6,664,275	\$6,664,275	0.00	1,563,272	426.3%
12/31/16	-	6,221,517	6,221,517	0.00	1,620,867	383.8

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 7 POST-RETIREMENT BENEFITS OF THE FUND—STAFF RETIREE HEALTH PLAN *(continued)*

Funded Status and Funding Progress *(continued)*

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the Staff Retiree Health Plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented as RSI following the notes to the financial statements, present multi-year trend information on the actuarial values of assets of the Staff Retiree Health Plan and its ratio to the AAL for benefits.

Actuarial Methods and Assumptions

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

For the years ended December 31, 2017 and 2016 actuarial valuations, the entry age normal actuarial cost method was used. The actuarial assumptions included a 4.5% investment rate of return based on the employer's assumed return on its assets and at December 31, 2017 and 2016, an annual healthcare cost trend rate of 7.5% and 8.0% at December 31, 2017 and 2016, respectively, reduced by increments of 0.5 percentage point per year to an ultimate rate of 5.0% by January 1, 2022, respectively. At December 31, 2017 and 2016, the wage inflation assumption was 3.75%. The unfunded actuarial accrued liability is being amortized as a level percentage of projected payroll over a 30-year open period.

NOTE 8 RESERVES

The Fund maintains several reserves, as required by the Illinois Pension Code and Board policy. The following are brief descriptions of the reserves:

City Contribution Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ 2,149,735,763	\$ 1,941,006,405

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 8 RESERVES *(continued)*

City Contribution Reserve *(continued)*

The City Contribution Reserve is maintained for the payment of the City's portion of future retirement benefits for active and inactive participants. Interest at 3% is credited to this reserve annually. When the amount of annuity for a policeman or widow is fixed, the City Contribution Reserve is charged with the amount of the present value of retirement benefit and the Annuity Payment Reserve is credited with such amount.

The City Contribution Reserve does not equal the present value of expected retirement benefits. The reserve is maintained on a cost basis, in accordance with the Illinois Pension Code.

Salary Deduction Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ <u>1,519,507,781</u>	\$ <u>1,500,886,023</u>

The Illinois Pension Code requires the Fund to maintain separate accounts for each policeman for the amounts of salary deductions with interest at 3% per year. When a policeman retires, the amount of his annuity is charged to the Salary Deduction Reserve and credited to the Annuity Payment Reserve. If a policeman takes a separation refund, his salary deductions are refunded to him and charged to the Salary Deduction Reserve. This reserve is fully funded.

Annuity Payment Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ <u>2,584,081,060</u>	\$ <u>2,484,485,598</u>

When the amount of annuity has been fixed, the present value of expected benefit is transferred from the City Contribution Reserve and the Salary Deduction Reserve to the Annuity Payment Reserve for the payment of annuity. All age and service annuities, widow's annuities, and refunds are charged to this reserve.

Annually, the actuary calculates the present value of all annuities. The Investment and Interest Reserve will transfer amounts to the Annuity Payment Reserve to ensure that the balance in the Annuity Payment Reserve equals the present value of annuities. This reserve is fully funded.

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 8 RESERVES *(continued)*

Prior Service Annuity Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ (1,380,076,402)	\$ (1,494,715,851)

The Prior Service Annuity Reserve is increased by the City's contributions for policemen and widows' prior service annuities and all prior service annuities payable to policemen and widows are charged to this reserve. This reserve included an unfunded liability of \$9,989,892,966 and \$9,804,493,844 as of December 31, 2017 and 2016, respectively.

Gift Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ 12,945,425	\$ 13,116,200

The Gift Reserve is maintained for gifts, grants, bequests, or other amounts received by the Fund. The Board of Trustees determines the use of these funds. Interest is credited to the Gift Reserve annually.

Investment and Interest Reserve

All gains and losses from investments and investment earnings are recorded in the Investment and Interest Reserve. Interest due to the City Contribution Reserve, Salary Deduction Reserve, Prior Service Annuity Reserve, Gift Reserve, and Supplementary Payment Reserve is transferred from the Investment and Interest Reserve to those reserves.

Ordinary Death Benefit Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ (36,229,226)	\$ (32,992,169)

Amounts contributed by policemen and the City for death benefits are credited to the Ordinary Death Benefit Reserve. Death benefit payments are charged to this reserve. At December 31, 2017 and 2016, the Ordinary Death Benefit Reserve had a deficit.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 8 RESERVES *(continued)*

Automatic Increase Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ (1,728,345,510)	\$ (1,547,214,804)

The Automatic Increase Reserve is credited with amounts deducted from the salaries of policemen and matching contributions by the City for automatic increase in annuity with interest thereon. Payments of increased annuities and salary deduction refunds for increase in annuity are charged to this reserve. At December 31, 2017 and 2016, the Automatic Increase Reserve had a deficit.

Supplementary Payment Reserve

	<u>2017</u>	<u>2016</u>
Balances, at December 31	\$ 447,402	\$ 447,402

The Supplementary Payment Reserve receives amounts transferred from the Investment and Interest Reserve for supplemental increases in annuity for certain eligible retirees. This reserve is fully funded.

The following reserves have a \$0 balance at December 31, 2017 and 2016. City contributions are allocated to these reserve accounts in amounts equal to payments made on an annual basis.

Child's Annuity Reserve

Amounts contributed by the City for child's annuity are credited to the Child's Annuity Reserve, and payments of child's annuity are charged to this reserve.

Duty Disability Reserve

The Duty Disability Reserve is increased by the City's contributions for duty disability benefits, child's disability benefits, and compensation annuities and is decreased by the payments of these benefits.

Ordinary Disability Reserve

Amounts contributed by the City for ordinary disability benefits are credited to the Ordinary Disability Reserve. Payments of ordinary disability benefits are charged to this reserve.

Hospitalization Fund Reserve

The health care premiums are paid from the tax levies and are credited to the reserve for Group Hospitalization Fund. Premium payments to the City are charged against this reserve.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 8 RESERVES (continued)

Expense Reserve

Amounts contributed toward the cost of administration are credited to the Expense Reserve, while expenses of administration are charged to this reserve.

NOTE 9 NET PENSION LIABILITY OF THE FUND

The components of the net pension liability at December 31, 2017 and 2016, were as follows:

	<u>2017</u>	<u>2016</u>
Total pension liability	\$ 13,454,462,563	\$ 13,113,091,688
Less: Plan fiduciary net position	<u>3,122,066,293</u>	<u>2,865,018,804</u>
Fund's net pension liability	<u>\$ 10,332,396,270</u>	<u>\$ 10,248,072,884</u>
Plan fiduciary net position as a percentage of total pension liability	23.20%	21.85%

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of December 31, 2017 and 2016, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	3.75% per year, plus additional percentage related to service
Investment rate of return	7.25%
Cost of living adjustments	For members hired before January 1, 2011: 3.0% (1.5% for retirees born on or after January 1, 1966, to a maximum of 30%) For members hired on or after January 1, 2011: 1/2 of CPI-U, maximum 3.0%, to begin no earlier than age 60.

Mortality rates were based on the Sex Distinct Retirement Plans 2014 Total Employee and Healthy Annuitant mortality tables weighted 108% for post-retirement males and 97% for females, respectively, and 85% for pre-retirement males and 115% for females, respectively, and 115% for disabled males and females.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 9 NET PENSION LIABILITY OF THE FUND *(continued)*Actuarial Assumptions *(continued)*

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate arithmetic expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These assumptions are converted into nominal assumptions by adding inflation, then combined by weighing them by the target asset allocation percentages. Finally arithmetic portfolio expected return is converted into a geometric expected return using assumed asset class standard deviations and correlations. The pension plan's target allocation as of December 31, 2017 and 2016, are summarized in the following tables:

December 31, 2017:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
U.S. equity	21%	6.1%
Non-U.S. equity	21	7.7
Fixed income	22	1.9
Global asset allocation	5	4.4
Private markets	17	7.4
Hedge funds	5	4.0
Real estate	5	4.6
Real assets	<u>4</u>	4.4
Total	<u>100%</u>	

December 31, 2016:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
U.S. equity	21%	6.1%
Non-U.S. equity	20	7.6
Fixed income	22	1.8
Global asset allocation	10	5.0
Private markets	11	7.8
Hedge funds	7	3.7
Real estate	5	4.6
Real assets	<u>4</u>	4.8
Total	<u>100%</u>	

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 9 NET PENSION LIABILITY OF THE FUND *(continued)*

Single Discount Rate

A Single Discount Rate of 7.00% and 7.07% as of December 31, 2017 and 2016, respectively, was used to measure the total pension liability. These Single Discount Rates were based on an expected rate of return on pension plan investments of 7.25% for 2017 and 2016, and a municipal bond rate of 3.31% and 3.78%, respectively. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made under the statutory funding policy. Based on these assumptions, the pension plan's fiduciary net position and future contributions were sufficient to finance the benefit payments only through the year 2070. As a result, the long-term expected rate of return on pension plan investments was applied to projected benefit payments through the year 2070, and the municipal bond rate was applied to all benefit payments after that date.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.00% and 7.07% as of December 31, 2017 and 2016, respectively, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is 1-percentage-point lower or 1-percentage-point higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption as of December 31, 2017:

1% Decrease 6.00%	Single Discount Rate Assumption 7.00%	1% Increase 8.00%
\$ 11,944,827,526	\$ 10,332,396,270	\$ 8,978,201,794

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption as of December 31, 2016:

1% Decrease 6.07%	Single Discount Rate Assumption 7.07%	1% Increase 8.07%
\$ 11,931,816,590	\$ 10,248,072,884	\$ 8,918,000,370

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

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Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 10 DEFERRED COMPENSATION PLAN

The Fund offers its employees a deferred compensation plan created in accordance with Internal Revenue Code Section 457. The plan, available to all employees of the Fund, permits them to defer a portion of their salary until future years. Participation in the plan is optional. The deferred compensation is not available to employees until termination, retirement, death, or unforeseeable emergency. The plan is managed by a third-party administrator.

The assets of the plan were placed in trust accounts with the plan administrator for the exclusive benefit of participants and their beneficiaries and are not considered assets of the Fund.

NOTE 11 LEASE AGREEMENT

The Fund leases its office facilities under a non-cancelable agreement. The current lease commenced on July 1, 2016, and was renewed for 16 years through 2032. The new lease agreement includes an abatement clause during the term of the new lease.

Office rental expense amounted to \$259,435 and \$303,035 for the years ended December 31, 2017 and 2016, respectively.

Future minimum rental payments, net of abatement provisions under the office lease at December 31, 2017, are as follows:

<u>Year</u>	<u>Amount</u>
2018	\$ 141,122
2019	340,744
2020	347,559
2021	354,510
2022	361,600
2023 and thereafter	3,816,036

NOTE 12 RISK MANAGEMENT

The Fund is exposed to various risks of loss related to tort, theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Fund carries commercial insurance to reduce its exposure to risk of loss. There is no significant change in insurance coverage from year to year. Settled claims resulting from these risks have not exceeded commercial insurance coverage in any of the past three fiscal years.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Financial Statements

Years Ended December 31, 2017 and 2016

NOTE 13 CONTINGENCIES

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 with Circuit Court's dismissal order and held that the subsidies pursuant to the 1983 and 1985 amendments is a protected benefit under the pension protection clause of the Illinois Constitution. As such, the retirees in the Appellate Court expanded class 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. 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 and this matter remains pending for such purpose. Further, the *Underwood* plaintiffs continue to assert a position concerning the funds' obligation to contract for insurance, and the funds continue to defend that assertion citing to both the Appellate Court's decision and legislative enactments following the 1983 and 1985 legislation. The outcome is uncertain and this matter and related obligations are not reflected in the financial statements.

NOTE 14 SUBSEQUENT EVENTS

On May 23, 2018, three plaintiffs filed litigation, *De Jesus et. al., v. Policemen's Annuity & Benefit Fund of the City of Chicago* (18 CH 06195), seeking class action status, in substance alleging the fund did not properly calculate their duty disability benefits by not including duty availability allowance in their computation of salary in calculating their benefit amount. This newly filed matter is pending, the outcome of which is uncertain.

REQUIRED SUPPLEMENTARY INFORMATION

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Schedule of Changes in Net Pension Liability

As of December 31 - Last 4 Years

(Unaudited)

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
<i>Total pension liability</i>				
Service cost, including pension plan administrative expense	\$ 237,333,255	\$ 220,569,553	\$ 213,584,647	\$ 199,435,084
Interest on the total pension liability	917,720,267	851,098,457	832,972,131	791,693,017
Benefit changes	-	606,249,791	-	-
Difference between expected and actual experience	(299,923,560)	1,801,353	(105,968,891)	-
Assumption changes	238,975,508	112,585,241	-	845,070,287
Benefit payments	(737,873,928)	(696,491,103)	(668,950,080)	(645,688,934)
Refunds	(10,017,655)	(10,704,842)	(7,826,847)	(8,991,636)
Pension plan administrative expense	(4,843,012)	(4,749,762)	(4,508,519)	(4,240,625)
Net change in total pension liability	341,370,875	1,080,358,688	259,302,441	1,177,277,193
Total pension liability – beginning	<u>13,113,091,688</u>	<u>12,032,733,000</u>	<u>11,773,430,559</u>	<u>10,596,153,366</u>
Total pension liability – ending (a)	<u>13,454,462,563</u>	<u>13,113,091,688</u>	<u>12,032,733,000</u>	<u>11,773,430,559</u>
<i>Plan fiduciary net position</i>				
Employer contributions	494,483,191	272,427,716	572,836,100	177,417,827
Employee contributions	103,011,250	101,475,864	107,626,311	95,675,538
Pension plan net investment (loss) income	412,190,404	142,699,124	(5,333,795)	181,901,293
Benefit payments	(737,873,928)	(696,491,103)	(668,950,080)	(645,688,934)
Refunds	(10,017,655)	(10,704,842)	(7,826,847)	(8,991,636)
Pension plan administrative expense	(4,843,012)	(4,749,762)	(4,508,519)	(4,240,625)
Other	97,239	1,412,770	3,091,545	740,305
Net change in plan fiduciary net position	257,047,489	(193,930,233)	(3,065,285)	(203,186,232)
Plan fiduciary net position – beginning	<u>2,865,018,804</u>	<u>3,058,949,037</u>	<u>3,062,014,322</u>	<u>3,265,200,554</u>
Plan fiduciary net position – ending (b)	<u>3,122,066,293</u>	<u>2,865,018,804</u>	<u>3,058,949,037</u>	<u>3,062,014,322</u>
Net pension liability – ending (a)-(b)	<u><u>\$10,332,396,270</u></u>	<u><u>\$10,248,072,884</u></u>	<u><u>\$ 8,973,783,963</u></u>	<u><u>\$ 8,711,416,237</u></u>

The above information was required beginning in 2014. Information for the next six years will be presented in future years.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Notes to Schedule of Changes in Net Pension Liability

For the Years Ended December 31, 2017 and 2016

(Unaudited)

Beginning of year total pension liability for 2017 used a Single Discount Rate of 7.07% and the benefit provisions, actuarial assumptions and funding policy in effect as of the December 31, 2016 funding actuarial valuation. The Single Discount Rate of 7.07% was based on a long-term expected rate of return on pension plan investments of 7.25% used in the December 31, 2016, funding actuarial valuation for the years 2016 through 2068 and a long-term municipal bond rate as of December 29, 2016, of 3.78% for subsequent years.

End of year total pension liability for 2017 uses a Single Discount Rate of 7.00% and the benefit provisions, actuarial assumptions and funding policy in effect as of the December 31, 2017, funding actuarial valuation. The Single Discount Rate of 7.00% was based on a long-term expected rate of return on pension plan investments of 7.25% used in the December 31, 2017, funding actuarial valuation for the years 2017 through 2070 and a long-term municipal bond rate as of December 29, 2017, of 3.31% for subsequent years.

The increase in total pension liability for 2016 due to benefit changes is a result of the change in plan provisions pursuant to P.A. 99-0905.

The increase in the total pension liability for 2017 due to assumption changes and methods includes the impact of the change in the municipal bond rate from December 29, 2016, to December 29, 2017. Changes in actuarial assumptions and methods led to the change in the Single Discount Rate from 7.07% to 7.00% (based on the long-term expected rate of return on pension plan investments of 7.25% used in the December 31, 2016, and 2017, funding valuations and the long-term municipal bond rate of 3.78% as of December 29, 2016, and 3.31% as of December 31, 2017, respectively.) This change was measured at the end of the year using the benefit provisions in effect as of December 31, 2017.

The increase in the total pension liability for 2016 due to assumption changes and methods includes the impact of changing the funding policy, investment return assumption and inflation rate assumption used in the funding actuarial valuation, and the change in the municipal bond rate from December 30, 2015, to December 29, 2016. Changes in actuarial assumptions, methods, plan provisions and statutory funding policy led to the change in the Single Discount Rate from 7.15% to 7.07% (based on the long-term expected rate of return on pension plan investments of 7.50% used in the December 31, 2015, funding actuarial valuation and 7.25% used in the December 31, 2016, funding actuarial valuation and the long-term municipal bond rate of 3.57% as of December 30, 2015, and 3.78% as of December 29, 2016, respectively). This change was measured at the end of the year using the benefit provisions in effect as of December 31, 2016.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Schedule of Net Pension Liability

As of December 31 - Last 4 Years

(Unaudited)

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total pension liability	\$ 13,454,462,563	\$ 13,113,091,688	\$ 12,032,733,000	\$111,773,430,559
Plan fiduciary net position	<u>3,122,066,293</u>	<u>2,865,018,804</u>	<u>3,058,949,037</u>	<u>3,062,014,322</u>
Net pension liability	<u>\$ 10,332,396,270</u>	<u>\$ 10,248,072,884</u>	<u>\$ 8,973,783,963</u>	<u>\$ 8,711,416,237</u>
Plan fiduciary net position as a percentage of total pension liability	23.30%	21.85%	25.42%	26.01%
Covered employee payroll	<u>\$ 1,150,406,094</u>	<u>\$ 1,119,526,987</u>	<u>\$ 1,086,607,979</u>	<u>\$ 1,074,333,318</u>
Net pension liability as a percentage of covered employee payroll	898.15%	915.39%	825.85%	810.87%

The above information is required beginning in 2014. Information for the next six years will be presented in future years.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Schedule of Contributions—Pension

Last 10 Years

(Unaudited)

Year Ended	Actuarially Determined Contribution (a)*	Actual Contribution (b)	Contribution Deficiency (Excess) (c) = (b)-(a)	Covered Payroll (d)**	Actual Contribution as a % of Covered Payroll (e) = (b)/(d)	Statutory Contribution (f)	Statutory Contribution Deficiency/ (Excess) (g) = (f)-(b)**
12/31/08	\$ 318,234,870	\$ 172,835,805	\$ 145,399,065	\$1,023,580,667	16.89%	\$ 175,080,814	\$ 2,245,009
12/31/09	339,488,187	172,043,784	167,444,403	1,011,205,359	17.01%	177,333,569	5,289,785
12/31/10	363,624,570	174,500,507	189,124,063	1,048,084,301	16.65%	177,060,837	2,560,330
12/31/11	402,751,961	174,034,600	228,717,361	1,034,403,526	16.82%	176,068,606	2,034,006
12/31/12	431,010,173	197,885,552	233,124,621	1,015,170,686	19.49%	204,329,314	6,443,762
12/31/13	474,177,604	179,521,259	294,656,345	1,015,426,128	17.68%	182,716,690	3,195,431
12/31/14	491,651,208	178,158,132	313,493,076	1,074,333,318	16.58%	178,773,877	615,745
12/31/15	785,500,836	575,927,645	209,573,191	1,086,607,979	53.00%	410,558,466	(165,369,179)
12/31/16	785,695,084	273,840,486	511,854,598	1,119,526,987	24.46%	454,844,486	181,004,000
12/31/17	910,938,497	494,580,430	416,358,067	1,150,406,094	42.99%	500,000,000	(5,419,570)

* The Fund's Statutory Funding does not conform to Actuarial Standards of Practice; therefore, for 2015 and after, the actuarially determined contribution is equal to the normal cost plus a 30-year level dollar amortization of the unfunded actuarial liability. Prior to 2015, the actuarially determined contribution was equal to the "ARC", which was equal to the normal cost plus a 30-year open level percent amortization of the unfunded actuarial liability.

** Covered payroll shown is the amount in force as of the actuarial valuation date and likely differs from actual payroll paid during the fiscal year.

*** Excludes amount paid for health insurance supplement beginning in 2006.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Notes to Schedule of Contributions—Pension

(Unaudited)

Valuation Date: December 31, 2017

Methods and Assumptions Used to Determine Contribution Rates as of the Valuation Date:

Actuarial Cost Method: Entry-Age Normal

Amortization Method: Prior to 2015, the total City contribution was generated by a tax equal to 2.00 times the contributions by the policemen to the Fund two years prior to the year of the tax levy. For tax levy years 2015-2019, the statutory contributions are equal to \$420 million, \$464 million, \$500 million, \$557 million and \$579 million, respectively. For tax levy years on and after 2020, the statutory contributions are equal to a level percentage of pay contribution determined so that the Plan attains a 90% funded ratio by the end of 2055 on an open group basis.

Remaining Amortization Period: Not applicable. An amortization payment is not directly calculated. The amortization payment is the difference between the total statutory contribution and the employer normal cost contribution.

Asset Valuation Method: Five-year smoothed market

Inflation: 2.75% as of the December 31, 2017 and 2016 actuarial valuations

Salary Increases: Wage inflation rates of 3.75% plus service based increases consistent with bargaining contracts

Postretirement Benefit Increases: A retiree born before January 1, 1966, with at least 20 years of service or receiving a mandatory retirement minimum annuity, receives an increase of 3% of the original annuity, starting on the first of the month following the first anniversary of his retirement or the first of the month following attainment of age 55, whichever is later, and shall not be subject to a 30% maximum increase. For retirees born on or after January 1, 1966, automatic increases are 1.5% of the original annuity, commencing at age 60, or the first anniversary of retirement, if later, to a maximum of 30%. For participants that first became members on or after January 1, 2011, increases are equal to the lesser of 3% and 50% of CPI-U of the original benefit, commencing at age 60.

Investment Rate of Return: 7.25% as of the December 31, 2017 and 2016 actuarial valuations

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Notes to Schedule of Contributions—Pension (*continued*)

(Unaudited)

Methods and Assumptions Used to Determine Contribution Rates as of the Valuation Date

(*continued*):

Retirement Age: Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the December 31, 2014, actuarial valuation pursuant to an experience study for the period January 1, 2009, through December 31, 2013.

Mortality: Post-Retirement Healthy mortality rates: Sex Distinct Retirement Plans 2014 Healthy Annuitant mortality table weighted 108% for males and 97% for females.

Pre-retirement mortality rates: Sex Distinct Retirement Plans 2014 Total Employee mortality table weighted 85% for males and 115% for females.

Disabled Mortality: Sex Distinct Retirement Plans 2014 Healthy Annuitant mortality table weighted 115% for males and 115% for females.

Other: The actuarial valuation is based on the statutes in effect as of December 31, 2017.

Methods and Assumptions Used for Accounting Purposes as of the Valuation Date:

Actuarial Cost Method: Entry Age Normal

Asset Method: Market value

Discount Rate: 7.00% as of the December 31, 2017 actuarial valuation
7.07% as of the December 31, 2016 actuarial valuation

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Schedule of Money-Weighted Rate of Return—Pension

(Unaudited)

<u>Year Ended</u>	<u>Annual money-weighted rate of return, net of investment expense</u>
12/31/14	6.24%
12/31/15	(0.41)
12/31/16	6.6
12/31/17	16.7

The above information is required beginning in 2014. Information for the next six years will be presented in future years.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
(A Component Unit of the City of Chicago)
Required Supplementary Information
Schedule of Funding Progress—Health Insurance Supplement
Last 10 Years
(Unaudited)

<u>Actuarial Valuation Date</u>	<u>Actuarial Value of Assets (a)</u>	<u>Actuarial Liability (AAL) Entry Age (b)</u>	<u>Unfunded AAL (UAAL) (b-a)</u>	<u>Funded Ratio (a/b)</u>	<u>Covered Payroll (c)</u>	<u>UAAL as a Percentage of Covered Payroll ((b-a)/c)</u>
12/31/08	\$ -	\$169,972,156	\$169,972,156	0.00%	\$1,023,580,667	16.61%
12/31/09	-	164,799,819	164,799,819	0.00	1,011,205,359	16.30
12/31/10	-	164,796,449	164,796,449	0.00	1,048,084,301	15.72
12/31/11	-	165,954,869	165,954,869	0.00	1,034,403,526	16.04
12/31/12	-	165,811,118	165,811,118	0.00	1,015,170,686	16.33
12/31/13	-	28,375,681*	28,375,681	0.00	1,015,426,128	2.79
12/31/14	-	18,762,125	18,762,125	0.00	1,074,333,318	1.75
12/31/15	-	9,255,090	9,255,090	0.00	1,086,607,979	0.85
12/31/16	-	-	-	0.00	1,119,526,987	0.00
12/31/17	-	-	-	0.00	1,150,406,094	0.00

* Due to Public Act 98-0043, effective June 28, 2013, the health insurance supplement in effect prior to June 30, 2013 expired on December 31, 2016. This matter remains in the Circuit Court to determine the mechanics and specific members eligible for the requisite payments ordered by the Illinois Appellate Court on June 29, 2017.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
(A Component Unit of the City of Chicago)
Required Supplementary Information
Schedule of Employer Contributions—Health Insurance Supplement
Last 10 Years
(Unaudited)

<u>Year Ended</u>	<u>Contributions</u>			<u>Percentage Contributed</u>
	<u>Annual Required</u>	<u>Actual Employee</u>	<u>Actual Employer</u>	
12/31/08	\$ 11,348,959	\$ -	\$ 8,850,186	77.98%
12/31/09	11,810,766	-	9,266,431	78.46
12/31/10	10,659,006	-	9,354,163	87.76
12/31/11	10,538,116	-	9,591,394	91.02
12/31/12	10,473,478	-	9,765,686	93.24
12/31/13	10,429,882	-	9,847,310	94.41
12/31/14	9,723,621	-	9,657,123	99.32
12/31/15	9,632,405	-	9,441,534	98.02
12/31/16	9,468,955	-	9,155,514	96.69
12/31/17	-	-	-	-

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Schedule of Funding Progress—Staff Retiree Health Plan

Last 10 Years

(Unaudited)

<u>Actuarial Valuation Date</u>	<u>GASB Value of Assets (a)</u>	<u>Actuarial Accrued Liability (AAL) Entry Age (b)</u>	<u>Unfunded AAL (UAAL) (b-a)</u>	<u>Funded Ratio (a/b)</u>	<u>Covered Payroll (c)</u>	<u>UAAL as a Percentage of Covered Payroll ([b-a]/c)</u>
12/31/08	\$ -	\$ 3,239,700	\$ 3,239,700	0.00%	\$ 1,202,700	269.4%
12/31/09	-	3,474,800	3,474,800	0.00	1,256,800	276.5
12/31/10	-	5,588,688	5,588,688	0.00	1,486,848	375.9
12/31/11	-	5,971,137	5,971,137	0.00	1,553,756	384.3
12/31/12	-	6,376,689	6,376,689	0.00	1,623,675	392.7
12/31/13	-	5,212,127	5,212,127	0.00	1,276,471	408.3
12/31/14	-	5,538,553	5,538,553	0.00	1,304,207	424.7
12/31/15	-	5,883,114	5,883,114	0.00	1,476,561	398.4
12/31/16	-	6,221,517	6,221,517	0.00	1,620,867	383.8
12/31/17	-	6,664,275	6,664,275	0.00	1,563,272	426.3

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Required Supplementary Information

Schedule of Employer Contributions—Staff Retiree Health Plan

Last 10 Years

(Unaudited)

<u>Year Ended</u>	<u>Contributions</u>			<u>Percentage Contributed</u>
	<u>Annual Required</u>	<u>Actual Employee</u>	<u>Actual Employer</u>	
12/31/08	\$ 274,600	\$ -	\$ 104,700	38.1%
12/31/09	290,600	-	121,000	41.6
12/31/10	434,005	-	127,630	29.4
12/31/11	453,535	-	133,373	29.4
12/31/12	478,309	-	169,882	35.5
12/31/13	394,221	-	108,262	27.5
12/31/14	409,004	-	123,263	30.1
12/31/15	429,179	-	152,574	35.6
12/31/16	450,328	-	181,612	40.3
12/31/17	476,401	-	214,586	45.0

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Notes to Required Supplementary Information—Staff Retiree Health Plan

For the Years Ended December 31, 2017 and 2016

(Unaudited)

Valuation date	December 31, 2013
Actuarial cost method	Entry age normal
Actuarial value of assets	No assets (pay-as-you-go)
Amortization method	Level percent open
Remaining amortization period	30 years
<i>Actuarial assumptions</i>	
OPEB investment rate of return	4.50% per year
Wage inflation	3.75% per year
Healthcare cost trend rate	8.0% - 2016 7.5% - 2017, graded down to 5.0% per year, ultimate trend in 0.5% increments

SUPPLEMENTARY INFORMATION

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Schedule of Administrative Expenses

For the Years Ended December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
<i>Administrative expenses</i>		
Actuary services	\$ 91,000	\$ 102,337
Benefits disbursement	211,202	279,203
Equipment service and rent	146,159	190,094
External auditors	97,029	73,400
Fiduciary insurance	150,724	141,367
Legal services	567,610	481,419
Medical consultants	311,430	354,714
Miscellaneous	211,622	264,585
Pension Administration	110,000	-
Occupancy and utilities	265,833	309,459
Personnel salaries and benefits	2,106,548	2,064,125
Postage	11,000	9,650
Supplies	12,042	9,927
Trustee election	52,935	-
Total administrative expenses	<u>\$ 4,345,134</u>	<u>\$ 4,280,280</u>

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Schedule of Consulting Costs

For the Years Ended December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
<i>Payments to consultants</i>		
External auditors	\$ 97,029	\$ 73,400
Medical consultants	311,430	354,714
Legal services	567,610	481,419
Actuary service	91,000	102,337
Investment management fees	9,053,006	8,528,425
Custodial fees	255,135	312,500
Investment consulting and other fees	821,236	507,596
Total consulting costs	<u>\$ 11,196,446</u>	<u>\$ 10,360,391</u>

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

(A Component Unit of the City of Chicago)

Schedule of Investment Fees

For the Years Ended December 31, 2017 and 2016

	<u>2017</u>	<u>2016</u>
<i>Investment managers</i>		
Acadian Asset Management	\$ 1,005,529	\$ 795,017
Artisan Partners	796,259	809,829
Blueprint Capital	59,375	-
Denali Advisors	280,992	246,354
Earnest Partners	913,913	774,487
Fisher Investments	819,596	671,646
Great Lakes Advisors	330,750	309,332
HGK Asset Management	67,163	-
Holland Capital Management	247,789	334,896
ING Clarion	94,922	94,620
Invesco Capital Management	281,250	375,000
Lazard Asset Management	708,402	553,194
LM Capital Group	209,703	211,668
MacKay Shields LLC	332,243	406,077
Manulife Asset Management	436,027	436,759
Montag & Caldwell	187,163	185,437
Northern Trust Global Investments - Index Funds	7,174	30,235
UBS Global Asset Management	451,194	420,791
Wellington Management	297,243	379,999
Wells Capital Management	290,600	312,018
William Blair & Co.	1,235,719	1,181,066
Total investment manager fees	<u>9,053,006</u>	<u>8,528,425</u>
<i>Investment consultants and other</i>		
Elkins McSherry Inc.	20,000	20,000
Evercore Group	429,385	-
NEPC LLC	371,851	487,596
Total investment consultants and other fees	<u>821,236</u>	<u>507,596</u>
<i>Master custodian</i>		
The Northern Trust Company	255,135	312,500
Total investment fees	<u><u>\$ 10,129,377</u></u>	<u><u>\$ 9,348,521</u></u>



Investment Section



Investmentsⁱ

(Compiled by NEPC, LLC Investment Consultant to the Fund)

Investment Authority

Since December 16, 1987, the Policemen's Annuity & Benefit Fund of Chicago has operated in accordance with the Illinois Public Act 85-964, which is the Prudent Person rule for the Policemen's Pension Fund. The Prudent-Person rule states that fiduciariesⁱⁱ must discharge their duties with care, skill, prudence, and diligence that a prudent person acting in a like capacity and familiar with such matters would use under the prevailing conditions.

Investment Policy

In 1984, the Trustees undertook a restructuring of the Fund's investment policy to improve the Fund's investment diversification. The revised policy allows for investments in additional asset classes (e.g., international stocks and bonds, real estate and private equity investments). As a result of this policy change, the Fund was restructured. The Trustees allocated monies among new asset classes and added several new investment managers. The Trustees also allocated monies to passive investments (index funds), which provides a low-cost means of achieving market-like returns. The Trustees consistently review the investment policy and make changes when deemed appropriate. NEPC reviews the Fund's asset allocation policy annually. The most recent asset allocation policy review was presented to the Board during February 2017.

Distinction of Responsibilities

To clarify the roles and responsibilities of the Trustees and the various investment professionals engaged by the Trustees, the Trustees divided the responsibilities for the Fund as follows:

The Trustees assume the responsibility for establishing the investment policy that is to guide the investment of the Fund's assets. The investment policy describes the degree of investment risk that the Trustees deem appropriate.

Investment managers are appointed to execute the policy and invest pension assets in accordance with the policy and applicable statutes, but apply their own judgments concerning relative investment values. Investment managers are accorded full discretion, within policy limits, to (1) select individual investment, (2) make periodic adjustments to the proportions of equity and fixed income investments, and (3) diversify pension assets.

ⁱNEPC provides PABF with quarterly economic and investment market updates and performance reviews, investment manager monitoring and selection advice, and related investment services for traditional and non-traditional asset classes. Investment performance analysis and comparisons produced by NEPC have been calculated using standard performance evaluation methodologies and are consistent with industry standards. The Board's goal of achieving market rates of return, while mitigating unwarranted risk, is measured against appropriate benchmarks and comparative universes on a quarterly basis. Performance is measured on a most recent quarter, year-to-date, and accumulated trailing annual periods, as well as 3 and 5 year periods (full market cycle). This review process allows the Board to evaluate and determine whether established goals and objective are being achieved. Data on traditional assets held by the Fund is provided by the Fund's custodian to NEPC. Data on alternative investments held by the Fund is provided by the investment manager to NEPC.

ⁱⁱA fiduciary is any person who has authority or control with respect to the management or administration of plan assets.

ⁱⁱⁱIF and eVestment universe returns are presented gross of fees.



Diversification

The Fund's assets are diversified in several ways to minimize the potential for overexposure to individual investments and provide a broad opportunity set for the portfolio while trying to minimize risk. Since 1984, the Trustees have expanded the number of asset classes available for investment and expanded on the current manager line up. As of December 31, 2017, the Fund retained a total of 62 different investment strategies.

Investment Objective

The Fund's investment objective is to match or exceed its policy index return on a net of fees basis and over the long term meet or exceed the actuarial required rate of return. The Total Fund's return will also be compared to the InvestorForce total public fund universe.

2017 Asset Allocation

As of December 31, 2017, compared to the target allocation, the Fund was overweight to US equity, non-US equity, fixed income and cash. The Fund was underweighting to opportunistic credit strategies, hedge funds, private equity, private real assets, real estate and infrastructure. The Fund's asset allocation at the end of 2017 is shown below.

Asset Allocation vs. Target				
	Current	Policy	Current	Difference*
U.S. Equity	\$719,724,035	21.00%	27.46%	6.46%
Non-US Equity	\$771,174,843	21.00%	29.43%	8.43%
Fixed Income	\$611,584,459	22.00%	23.34%	1.34%
Global Asset Allocation	\$121,561,344	5.00%	4.64%	-0.36%
Opportunistic Credit*	\$131,571,755	8.00%	5.02%	-2.98%
Private Equity	\$83,625,307	7.00%	3.19%	-3.81%
Hedge Funds	\$74,308,869	5.00%	2.84%	-2.16%
Real Estate	\$73,320,136	5.00%	2.80%	-2.20%
Real Assets	–	4.00%	–	-4.00%
Infrastructure	\$26,855,768	2.00%	1.02%	-0.98%
Cash	\$6,940,679	–	0.26%	0.26%
Total	\$2,620,667,195	100.00%	100.00%	

*Income Generating allocation



Fair Value and Asset Allocation
(as of December 31, 2017)

Manager	Market Value as of 12/31/17	% of Total Fund
US Equity	719,724,635	27.4%
NTGI Russell 1000	232,088,086	8.8%
Montag & Caldwell	52,094,980	2.0%
Denali Advisors	60,862,150	2.3%
Great Lakes	123,591,648	4.7%
William Blair SMID Growth	124,558,186	4.7%
Fisher Investment	126,529,585	4.8%
Non-US Equity	771,174,843	29.3%
Artisan Partner	117,903,106	4.5%
UBS International	114,343,144	4.3%
William Blair International Growth	158,041,740	6.0%
Acadian	151,490,452	5.8%
EARNEST Partners	103,845,017	3.9%
Lazard	125,551,384	4.8%
Fixed Income	611,584,459	23.3%
GAM Unconstrained Bond Fund	98,215,811	3.7%
HGK Asset Management	474,589	0.0%
LM	92,299,495	3.5%
Mackay Shields	60,665,782	2.3%
Manulife Asset Management	124,112,288	4.7%
Wellington	99,325,179	3.8%
Wells Capital	136,491,315	5.2%
Private Equity	86,549,613	3.3%
Adams Street Partners	35,076,220	1.3%
Adams Street Partners (Co-Inv)	4,921,872	0.2%
Adams Street Partners (Direct)	1,602,504	0.1%
Chancellor	14,097	0.0%
Invesco Fund IV Int'l	-	0.0%
Invesco Fund IV U.S.	-	0.0%
Invesco Fund IV Venture	6,499,525	0.2%
Mesirow Fund III	4,917,718	0.2%
Mesirow Fund IV	9,817,945	0.4%
Muller & Monroe	1	0.0%
Muller & Monroe MEPEFF	3,060,311	0.1%
RCP Fund VI LP	20,639,420	0.8%

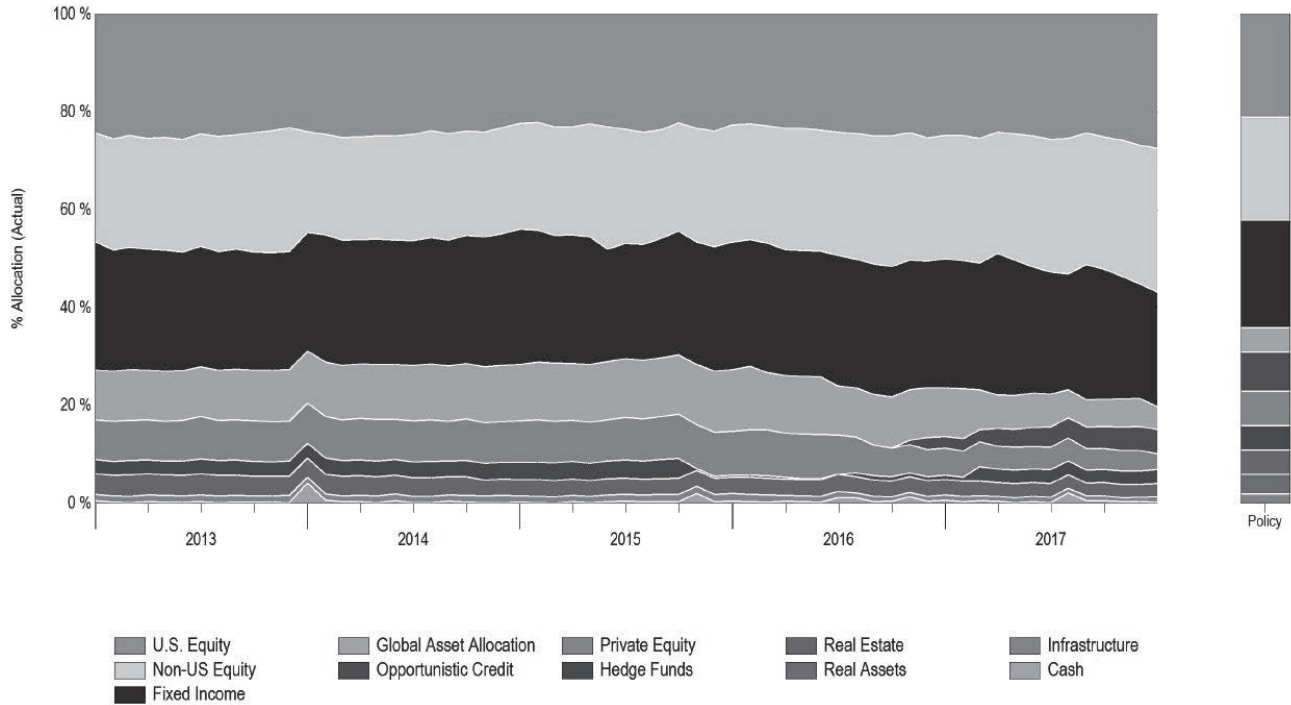


Fair Value and Asset Allocation(continued)
(as of December 31, 2017)

Manager	Market Value as of 12/31/17	% of Total Fund
Infrastructure	26,855,768	1.0%
Carlyle Group	1,537,001	0.1%
Global Infrastructure Partners III	5,423,177	0.2%
Global Infrastructure Partners	19,895,590	0.8%
Real Estate	74,044,091	2.8%
ABR Chesapeake III	1,850,565	0.1%
AG Core Plus Realty II	533,446	0.0%
Apollo Real Estate Advisors	1,185,877	0.0%
BlackRock Asia III	1	0.0%
Brookfield RE Fund V	824,997	0.0%
DRA Advisors	513,646	0.0%
CBRE Clarion	15,315,402	0.6%
Lone Star Fund VI	2,043,130	0.1%
Lone Star Global	609,221	0.0%
Lone Star X	435,915	0.0%
Mesirow RE Value	6,683,181	0.3%
M.S. Prime Property	19,929,491	0.8%
Morgan Stanley MSREF VI	402,666	0.0%
Newport Capital Partners	526,606	0.0%
Quadrant R.E. Advisors	723,955	0.0%
Shamrock Hostmark	2,784	0.0%
SoundMark Partners	3,691,886	0.1%
UBS Realty Investors	18,771,322	0.7%
Private Credit	131,787,314	5.0%
Beach Point LP	22,252,606	0.8%
BluePrint Capital	19,528,697	0.7%
Clareant Euro	16,873,340	0.6%
Crestline Opportunity Fund	7,641,520	0.3%
Dorchester Secondaries	25,775,719	1.0%
Monroe Capital	18,757,444	0.7%
Voya	20,957,988	0.8%
Hedge Funds	73,185,144	2.8%
Entrust	52,446,135	2.0%
Pluscios	20,739,009	0.8%
Global Asset Allocation	121,561,344	4.6%
GMO	13,853,401	0.5%
PIMCO	107,707,943	4.1%
Cash and Cash Equivalent	13,669,545	0.5%
Cash	11,951,883	0.5%
Tax Reclaims	1,717,662	0.1%



Historic Asset Allocation by Asset Class



Summary of 2017 Investment Activity

Investment Manager Changes

During 2017, the Board of Trustees voted to retain 2 hedge funds managers, 3 real estate managers, 1 infrastructure manager, 1 private equity manager, 2 private debt managers and 1 short duration manager.

2017 Market Environment

Like a record spinning right round, the music played on for US equities in 2017. Hitting new highs, the S&P 500 Index spent its ninth straight year in the black. The flagship US index posted 14 consecutive months of gains with only one of the last 20 quarters in the red. While non-US stocks joined the chorus only in 2017, they caught on quickly with developed market equities up 25% in 2017, according to the MSCI EAFE Index. That said, it was emerging market equities that really hit the highest notes last year, with returns of 38%. Not to be left out, high-yield debt and dollar-denominated emerging market bonds outperformed within credit. It was a banner year for global equities amid optimism around US corporate tax cuts and the continued acceleration of economic growth the world over.



Global Equities

Global equities returned 24% for the year. Global stocks saw earnings per share rise nearly 19% in 2017, according to FactSet, the fastest growth since 2011. Maintaining their lead, emerging market equities ended the year with returns of 37.3%. Information technology led in 2017, largely driven by one stock, Chinese internet giant Tencent, which was up 114.3% for the year. Among countries, South Africa, Greece and India led performance, while Malta, Mexico and Pakistan were the stragglers. Within private equity, buyout deal activity fell 2% in 2017, while the number of buyout exits dropped 11%. Fundraising totaled \$180 billion last year, up 40% from 2016; mega buyout funds dominated with 11 funds larger than \$5 billion accounting for over 60% of the capital raise. Hedged equity strategies posted strong gains through the fourth quarter with the HFRI Equity Index up 3.2%. Quantitative strategies also drove returns, along with relative-value and other trading strategies, as a result of dispersion in isolated areas of the market. Mergers and acquisitions boosted hedged equity returns, particularly in the technology, healthcare, retail and manufacturing sectors.

Global Fixed Income

US credit also fared well for the year. The Barclays US Aggregate Index was in the black, pushing returns so far this year to just over 3.0%. The S&P LSTA Leveraged Loan Index returned 3.0%. The Barclays Long Treasury Index gained 0.6%, the Barclays Long Credit Index was up 2.2%, and the Barclays Long Government/Credit Index returned 1.5%. Yields compressed 10 basis points in the fourth quarter for the Long Credit and Long Government/Credit Indices to 4.2% and 3.6%, respectively. As in public equities, emerging markets led the pack returning 8.3% for the year. Emerging-market local-sovereign debt returned over 14% for the year, helped, in large part, by currency appreciation. In private debt, fundraising has totaled \$16.5 billion so far in 2017, already surpassing the \$14.4 billion raised in 2016. Across the pond, fundraising totaled €10.4 billion in Europe, exceeding the €6.0 billion in 2016.

Real Assets

Commodities gained of 4.7% in the fourth quarter to end 2017 in the black, their second straight year of gains, helped by continuing weakness in the US dollar. However, total returns still lagged the appreciation in spot prices due to contango—when the futures price of a commodity is above the expected future spot price—in the index, resulting in negative roll yield. We remain positive on natural resources equities and midstream energy equities (MLPs) with a neutral view on long-only commodities; we believe security selection is critical in this space.

In private real assets, we remain positive on energy-focused private equity and credit opportunities. The recent strength in the underlying commodities has helped buoy asset values, but opportunities remain amid challenges for management teams of publicly-traded companies working through a prolonged recovery. We are also constructive on the mining sector over the mid-to-longer-term.



Within real estate, US core property fundamentals remain healthy but returns will likely trend below historical average as appreciation declines. Rising interest rates will place upward pressure on cap rates, but as capital flows continue to chase yield in the US, we expect positive growth, albeit at lower levels. Relative-value opportunities remain within non-core US real estate. We favor demographically-driven property sectors and managers that are attentive to duration risk in the later innings of the expansion cycle. Outside the US, there are capital market constraints and pockets of distress, for instance, non-performing loans, which are still attractive in Europe and select emerging markets. Subordinate debt opportunities may offer attractive risk-adjusted returns, while providing a hedge against declining property values.

Total Fund Fiscal Year End Performance (net of fees)

For 2017, on a net of fee basis, the Total Fund returned 17.15% which outperformed the policy index return of 12.98%. This ranked the Fund in the 10th percentile (1% being the highest, 100% being the lowest) of the IF Public DB Universe. Over the trailing three year period, the Fund's 7.56% return outperformed the policy index return of 5.78%. This ranked the Fund in the 27th percentile of the IF Public DB Universe. Over the trailing five years, the Fund's 8.65% return outperformed the policy index return of 6.55% and ranked the Fund in the 43rd percentile of the IF Public DB Universe.

Asset Class Fiscal Year End Performance (net of fees)

The US equity portfolio posted a return of 23.45% for the one year period ending December 31, 2017, outperforming the Russell 3000 index which returned 21.13%. This ranked the US equity composite in the 30th percentile of the eA All US Equity Median Universe. The non-US equity portfolio posted a return of 34.71% for the one year period ending December 31, 2017, outperforming the MSCI ACWI ex US index which returned 27.19%. This ranked the non-US equity composite in the 27th percentile of the eA All ACWI ex US Equity Universe. The fixed income portfolio posted a return of 4.18% for the one year period ending December 31, 2017, outperforming the Bloomberg Barclays US Aggregate index which returned 3.54%. This ranked the fixed income composite in the 48th percentile of the eA All US Fixed Income Median Universe.

The Income Generating/Credit Opportunities portfolio ended the year with a since inception IRR of 8.29%. Since inception, the total value to paid in capital multiple (current valuation plus cumulative distributions, divided by total capital calls) was 1.08. Chicago PABF had commitments totaling \$125.00 million to 6 credit opportunities funds. Of the 6 funds in the credit opportunities portfolio, 6 are in the investing stage. \$101.2 million of the Fund's \$125 million commitment is currently invested; 65% is invested in credit opportunities strategies, 5% is invested in distressed strategies and 30% is invested in direct lending strategies. Since inception, the credit opportunities program has gained \$7.96 million in value for the Fund. Direct Lending gained \$4.12 million, Distressed has lost \$0.18 million and Credit Opportunities has gained \$4.02 million. During the year, the Board voted to retain 2 private debt managers.



The infrastructure portfolio ended the year with a since inception IRR of 10.43%. The total value to paid in capital multiple was 1.65. The Fund had commitments totaling \$85 million to 3 infrastructure funds. Of the 3 funds in the infrastructure portfolio, 1 is in the investing stage and 2 are in the harvesting stage. Since inception, the infrastructure program has gained \$42.28 million in value for the Fund. At the end of the year, \$57.52M of the Fund's \$85M commitment had been called. During the year, the Board voted to retain 1 infrastructure manager.

The private equity portfolio ended the year with a since inception IRR of 12.87%. The total value to paid in capital multiple was 1.57. The Fund had commitments totaling \$592.24 million to 14 private equity funds. Of the 14 funds in the private equity portfolio, 2 are in the investing stage, 3 are in the harvesting stage, 4 are in the liquidating stage and 5 are complete. Since inception, the infrastructure program has gained \$311.54 million in value for the Fund. At the end of the year, \$526.53 million of the Fund's \$592.24 million commitment had been called. The Fund's private equity portfolio is well diversified, at the end of the year (based on 12/31/17 NAV) 19% was invested in venture, 29% was invested in buyout funds, 50% was invested in fund of funds and 2% was invested in co invest funds. The investment strategies adding value are: venture (+80.80 million), Buyout (+93.18 million), Fund of Funds (+124.77 million) and Co-Invest (+13.03 million). The investment strategy losing value is Secondaries (-\$229.75 million). During the year, the Board voted to retain 1 private equity manager.

The real estate portfolio posted a since inception IRR of 3.66%. Since inception, the total value to paid in capital multiple (current valuation plus cumulative distributions, divided by total capital calls) was 1.19. Since inception, the real estate program has gained \$41.31 million in value for the Fund. As of December 31, 2017, Chicago PABF had commitments totaling \$244.28 million to 21 real estate funds. Of the 21 funds in the real estate portfolio, 3 are in the investing stage, 3 are in the harvesting stage, 6 are in the liquidating stage, 6 are completed, and 3 are in open end real estate. The investment strategies adding value are: Credit Opportunities (+\$0.04 million), RE Debt (+\$8.42 million), RE Long (+\$17.02 million), RE Value Add (+\$7.68 million) and RE Core (+\$12.42 million). The investment strategy losing value is RE Opportunistic (-\$3.98 million). The Fund's real estate portfolio is well diversified, at the end of the year (by 12/31/17 NAV) 53% was invested in core real estate strategies, 12% in value add, 8% in opportunistic, 1% in real estate debt, 21% in REITs and 5% in credit opportunities. During the year, the Board voted to retain 3 real estate managers.



Annual Investment Returns (net of fees) – December 31, 2017 ⁱⁱⁱ

Below a detailed analysis of the Fund's net of fee performance has been provided both on a trailing and calendar year basis. Calculations are prepared utilizing a time weighted rate of return

Asset Class	1 Year	3 Years	5 Years	10 Years
TOTAL FUND				
Police Fund	17.15%	7.56%	8.65%	5.40%
Policy Portfolio	12.98%	5.78%	6.55%	5.65%
U.S EQUITY				
Police Fund	23.45%	11.46%	15.38%	8.66%
Russell 3000 Index	21.13%	11.12%	15.58%	8.60%
NON-U.S EQUITY				
Police Fund	34.71%	9.77%	8.79%	3.11%
Performance Benchmark	27.19%	7.83%	6.80%	1.84%
FIXED INCOME				
Police Fund	4.18%	2.46%	2.42%	4.14%
Barclays Capital Aggregate Index	3.54%	2.24%	2.10%	4.01%
REAL ESTATE				
Police Fund	5.43%	5.54%	7.14%	3.69%
NCREIF Net Property Index	6.90%	9.83%	10.35%	6.23%
INFRASTRUCUTRE				
Police Fund	38.60%	27.53%	24.89%	11.64%
NCREIF Net Property Index	7.11%	6.64%	6.44%	6.08%
PRIVATE EQUITY				
Police Fund	-6.87%	3.60%	8.97%	4.97%
Custom Index	11.75%	10.09%	12.46%	7.44%
PRIVATE CREDIT / INCOME GENERATING				
Police Fund	7.81%	---	---	---
Custom Index	4.12%	---	---	---
HEDGE FUND				
Police Fund	5.82%	---	---	---
Custom Index	7.73%	---	---	---
GLOBAL ASSET ALLOCATION				
Police Fund	14.67%	5.23%	4.83%	---
Custom Index	16.24%	6.36%	7.03%	---



ANNUAL INVESTMENT RETURNS - December 31, 2017

Asset Class	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOTAL FUND										
Police Fund	-27.8%	21.9%	12.7%	0.8%	12.4%	14.5%	6.2%	-0.4%	6.7%	17.15%
Policy Portfolio	-20.9%	16.7%	12.8%	0.2%	12.6%	13.3%	4.9%	-0.7%	5.9%	12.98%
U.S EQUITY										
Police Fund	-37.7%	33.0%	17.3%	0.3%	15.0%	34.1%	10.2%	2.1%	9.9%	23.45%
Russell 3000 Index	-37.3%	28.3%	16.9%	1.0%	16.4%	33.6%	12.6%	0.5%	12.7%	21.13%
NON-U.S EQUITY										
Police Fund	-46.3%	40.1%	11.5%	-13.5%	20.6%	17.5%	-1.9%	-4.3%	2.7%	34.71%
Performance Benchmark	-45.5%	41.5%	11.2%	-13.7%	16.8%	15.3%	-3.9%	-5.7%	4.5%	27.19%
FIXED INCOME										
Police Fund	-4.1%	11.6%	7.8%	8.0%	6.7%	-1.2%	6.0%	-1.1%	4.4%	4.18%
Barclays Capital Aggregate Index	5.2%	5.9%	6.5%	7.8%	4.2%	-2.0%	6.0%	0.6%	2.7%	3.54%
REAL ESTATE										
Police Fund	-11.2%	-9.1%	7.3%	6.5%	10.1%	6.9%	12.4%	5.0%	6.0%	5.43%
NCREIF Net Property Index	-6.5%	-16.9%	13.1%	16.1%	11.0%	8.0%	11.0%	13.5%	9.2%	6.90%
INFRASTRUCTURE										
Police Fund	-15.0%	-6.0%	15.0%	9.0%	-3.0%	19.0%	23.0%	15.9%	29.2%	38.60%
NCREIF Net Property Index	5.3%	-22.1%	5.8%	16.1%	11.0%	11.0%	11.3%	13.5%	7.1%	7.11%
PRIVATE EQUITY										
Police Fund	-6.5%	-21.3%	13.0%	16.9%	9.3%	15.1%	20.0%	10.6%	7.9%	-6.87%
Custom Index	1.5%	-26.3%	15.8%	12.0%	14.4%	16.3%	17.9%	5.9%	4.2%	11.75%
PRIVATE CREDIT/INCOME GENERATING										
Police Fund	---	---	---	---	---	---	---	---	---	7.81%
Custom Index	---	---	---	---	---	---	---	---	---	10.60%
HEDGE FUND										
Police Fund	---	---	---	---	---	---	---	---	---	5.82%
Custom Index	---	---	---	---	---	---	---	---	---	7.73%
GLOBAL ASSET ALLOCATION										
Police Fund	---	---	---	---	13.2%	7.5%	1.1%	-6.0%	8.1%	14.67%

¹All Chicago PABF performance presented net of fees. IF and eVestment universe returns are presented gross of fees

²Real Estate results are shown beginning in 2007, when the Fund's new real estate program was initiated

Largest Stock Holdings as of December 31, 2017

	Shares	Stocks	Fair Value
1	6,440	SAMSUNG ELECTRONIC KRW5000	\$ 15,327,747
2	57,120	ADR ALIBABA GROUP HOLDING LTD SPONSORED ADS	9,849,202
3	672,500	PING AN INSURANCE GROUP 'H' CNY1	6,998,308
4	907,000	TAIWAN SEMICON MAN TWD10	6,994,859
5	817,062	AIA GROUP LTD NPV	6,966,239
6	131,072	ORACLE CORP COM	6,197,084
7	27,693	UNITEDHEALTH GROUP INC. COM	6,105,199
8	22,449,570	BANK RAKYAT INDONESIA PERSER	6,022,954
9	59,174	ADR HDFC BK LTD ADR REPSTG 3 SHS	6,016,221
10	601,706	ADR ICICI BK LTD	5,854,599

Largest Bond Holdings as of December 31, 2017

	Par	Bonds	Fair Value
1	6,160,000	UNITED STATES TREAS BONDS 2.125% DUE 5-15-2025	\$ 6,065,918
2	5,500,000	FNMA SINGLE FAMILY MORTGAGE 3.5% 30 YEARS	5,646,955
3	5,500,000	UNITED STATES TREAS NTS 1.75% DUE 11-30-2019	5,486,250
4	5,244,000	UNITED STATES TREAS NTS 1.25% DUE 4-30-2019	5,202,415
5	4,600,000	UNITED STATES TREAS NTS 2.25% DUE 11-15-2024	4,576,282
6	4,541,000	UNITED STATES TREAS NTS 1.625% DUE 8-31-2022	4,428,715
7	4,220,000	UNITED STATES TREAS NTS 2.25% DUE 2-15-2027	4,164,613
8	3,912,000	UNITED STATES TREAS NTS 1.875% DUE 12-15-2020	3,900,690
9	3,911,000	US TREAS N/B US GOVT NATIONAL 1.50% DUE 7-15-2020	3,869,141
10	3,938,000	UNITED STATES TREAS NTS 1.125% DUE 2-28-2021	3,829,551

A complete list of portfolio holdings is available upon request.

Commissions Paid by Investment Managers in 2017

Manager	Total Number of Trades	Total Number of Shares	Total Commissions
Acadian Asset Management	2,833	40,993,958	\$ 57,106
Artisan Partners	2,063	7,137,965	128,423
Denali Advisors	288	1,781,984	31,805
Earnest Partners	252	10,602,498	49,064
Fisher Investments	73	934,200	19,653
Great Lakes Advisors	103	1,304,033	45,641
Holland Capital Management	1,087	3,951,161	19,386
ING Clarion	2,527	2,225,438	23,823
Lazard Asset Management	819	18,833,049	112,165
Montag & Caldwell	121	454,105	12,858
UBS Global Asset Management	550	13,801,380	80,831
William Blair & Company	3,730	13,320,912	243,254
	14,446	115,340,683	\$ 824,009

Commissions Paid to Brokers in 2017

Broker	Total Number of Shares	Total Commissions	Commissions Per Share
Barclays Capital	302,497	\$ 8,740	\$ 0.029
BNP Paribas	2,375,681	7,771	0.003
BNY Convergenx Execution Solutions	7,919,889	88,039	0.011
Citigroup Global Markets	8,889,918	33,410	0.004
CLSA Securities	3,983,817	13,524	0.003
Credit Suisse	4,060,869	35,328	0.009
Daiwa	3,307,804	14,970	0.005
Deutsche Securities	2,486,974	21,346	0.009
Drexel Hamilton LLC	575,661	20,148	0.035
Goldman Sachs & Co	4,409,494	32,781	0.007
HSBC	2,381,011	8,368	0.004
Instinet	10,660,720	45,093	0.004
J.P. Morgan Securities	4,186,118	33,847	0.008
Jefferies & Co.	3,919,678	22,636	0.006
Loop Capital Markets	4,053,938	81,229	0.020
Macquarie	1,788,800	8,462	0.005
Merrill Lynch	8,721,844	47,272	0.005
Morgan Stanley	9,305,462	52,112	0.006
Penserra Securities	487,981	16,790	0.034
Stanford C. Bernstein	3,612,555	13,447	0.004
Societe Generale	2,408,430	14,309	0.006
UBS	8,763,296	42,101	0.005
Williams Capital Group	342,589	10,171	0.030
Brokers with less than \$7,000 in commissions	16,395,657	152,117	0.009
Totals	115,340,683	\$ 824,010	\$ 0.007

**Investment Summary
as of 12/31/17**

<u>Investment Type</u>	<u>Fair Value</u>	<u>Percent of Total Fair Value</u>
<u>Fixed Income</u>		
Government Bonds	\$ 227,353,917	8.41%
Corporate Bonds	<u>285,938,802</u>	10.58%
Total Bonds	513,292,719	
 Fixed Income Funds	 <u>282,776,360</u>	 <u>10.46%</u>
Total Fixed Income	796,069,079	29.46%
<u>Equities</u>		
U.S. Equities	483,368,980	17.89%
International Equities	720,385,794	26.66%
Stock Index Funds	<u>282,163,719</u>	<u>10.44%</u>
Total Equities:	1,485,918,493	54.99%
<u>Other Investments</u>		
Hedge Fund-of-Funds	100,082,750	3.70%
Infrastructure	26,855,526	0.99%
Real Estate	72,809,905	2.69%
Swaps	434,145	0.02%
Forward Contracts	27,489,979	1.02%
Venture Capital	<u>36,607,996</u>	<u>1.35%</u>
Total Other:	264,280,301	9.78%
 Short-term funds and Cash:	 156,035,625	 5.77%
Total Assets at Fair Value:	<u>\$ 2,702,303,498</u>	<u>100.0%</u>

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Actuarial Section

May 29, 2018

Board of Trustees
Policemen's Annuity and Benefit Fund
City of Chicago
221 North LaSalle Street, Suite 1626
Chicago, Illinois 60601-1404

Subject: Actuarial Valuation Report for the Year Ending December 31, 2017

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Policemen's Annuity and Benefit Fund of Chicago ("the PABF" or "the Fund") as of December 31, 2017. This actuarial valuation has been performed to measure the funded status of the Fund as of December 31, 2017, based on the statutes in effect as of December 31, 2017. This report also provides the development of the plan year end 2018 Actuarially Determined Contribution ("ADC") as required by GASB Statement Nos. 67 and 68. Other information required under GASB Statement Nos. 67 and 68 is provided in a separate report. The actuarial assumptions and methods used were recommended by the actuary and approved by the Board.

We have prepared the supporting schedules for the actuarial section of the comprehensive annual financial report, including:

- ◆ Summary of Actuarial Valuation Methods and Assumptions;
- ◆ Schedule of Active Member Data;
- ◆ Retirements and Beneficiaries Added to and Removed from Rolls;
- ◆ Prioritized Solvency (Termination) Test;
- ◆ Development of Actuarially Determined Contributions under GASB Statement Nos. 67 and 68;
- ◆ Development of Actuarial Gains and Losses; and
- ◆ Summary of Basic Actuarial Values.

We have also provided the following schedule for the financial section of the report:

- ◆ Development of the projected Statutory Contribution Requirements based on the statutes in effect as of December 31, 2017

This actuarial valuation is based upon:

Data relative to the members of the Fund – Data for active members and persons receiving benefits from the Fund was provided by the Fund's staff. We have tested this data for reasonableness.

Asset Values – The actuarial value of assets is used in the development of the statutory contribution requirements. In each future fiscal year, gains and losses will be phased in over a five-year period.

Actuarial Method – The actuarial method utilized by the Fund, as required by statute, is the Entry-Age Normal cost method. The objective of this method is to recognize the costs of Fund benefits over the entire career of each member as a level percentage of compensation. Any Unfunded Actuarial Accrued Liability (UAAL) under this method is separately financed. All actuarial gains and losses under this method are reflected in the UAAL.

Actuarial Assumptions – All actuarial assumptions remain unchanged from the prior actuarial valuation and reflect the results of the experience study performed for the period of January 1, 2009 through December 31, 2013, approved by the Board on March 16, 2015, and the investment return and inflation assumptions first effective with the December 31, 2016, actuarial valuation. The assumptions used are set forth in Appendix 4: Actuarial Methods and Assumptions of the Valuation Report.

Plan Provisions – The actuarial valuation is based on plan provisions and statutes in effect as of December 31, 2017.

The funding objective of the Fund is to provide employer and employee contributions sufficient to provide the benefits of the Fund when due. Pursuant to Public Act ("P.A.") 99-0506, effective May 30, 2016, the funding policy was amended and requires City contributions to be equal to \$420 million in payment year 2016, \$464 million in payment year 2017, \$500 million in payment year 2018, \$557 million in payment year 2019 and \$579 million in payment year 2020. For payment years after 2020, the City is required to make level percent of pay contributions for plan years 2020 through 2055 that along with member contributions and investment earnings are expected to generate a projected funded ratio of 90% by plan year end 2055. The projections are based on an open group, level percent of pay financing and the Entry-Age Normal cost method.

This is a severely underfunded plan. The funded ratio is only 23.7% (using actuarial value of assets) and the unfunded liability is approximately \$10 billion as of December 31, 2017. The funded ratio is not projected to even reach 50% funded for another 26 years until 2043.

The funding policy defined in P.A. 99-0506 significantly defers contributions when compared to the provisions of the prior funding policy defined in P.A. 96-1495. The amount of annual contributions defined under P.A. 99-0506 does not even cover normal cost plus interest on the unfunded liability for the next 14 years. This means the unfunded liability is actually projected to increase to a high of \$11.8 billion in 2031, when contributions are finally sufficient to start reducing the unfunded liability.

We understand that P.A. 99-0506 defines the amount of City Contributions to the PABF. Nevertheless, we continue to recommend that the plan sponsor seriously consider making additional contributions (in

excess of the statutory requirement) to ensure that there are sufficient assets available in the fund in all years to pay the promised benefits.

We also recommend that the Board perform projections which include pessimistic scenarios such as investment return lower than assumed, lower contributions received than expected, higher benefit payments than expected, etc. to more fully understand the impact of less than optimal future expectations.

This actuarial valuation assumes that the City will be able to make future contributions on a timely basis. We did not perform an analysis of the ability of the City to make future contributions. Such an analysis is not within the scope of our assignment or within our analytical skill set. Failure to receive City contributions on a timely basis could jeopardize the sustainability of the Fund.

The funding actuarial valuation results contained in this report were prepared based on the statutes in effect as of December 31, 2017. The projected contributions contained in this report will be used to develop the blended discount rate under GASB Statement Nos. 67 and 68.

The actuarial valuation results set forth in this report are based on the data and actuarial techniques described above, and upon the provisions of the Fund as of the actuarial valuation date. To the best of our knowledge, this actuarial statement is complete and accurate based on the statutes in effect as of December 31, 2017, and fairly presents the actuarial position of the Fund as of December 31, 2017. Based on these items, we certify these results to be true and correct.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

Actuarial valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contribution shortfalls (the difference between the actual contributions and the annual required contributions) remain the responsibility of the Plan sponsor. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this variance, with a view to funding the plan over time.

This report should not be relied on for any purpose other than the purpose stated.

This report may be provided to parties other than the Fund only in its entirety and only with the permission of the Fund. GRS is not responsible for unauthorized use of this report.

Lance J. Weiss and Alex Rivera are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

The signing actuaries are independent of the plan sponsor.

Respectfully yours,



Lance J. Weiss, EA, MAAA, FCA
Senior Consultant



Alex Rivera, FSA, EA, MAAA, FCA
Senior Consultant

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO

ACTUARIAL METHODS AND ASSUMPTIONS AS OF DECEMBER 31, 2017

I. ACTUARIAL COST METHOD

An Actuarial Cost Method is a set of techniques used by the actuary to develop contribution levels under a retirement plan. The Actuarial Cost Method used in this valuation for statutory funding and State reporting purposes and GASB accounting purposes is the Entry-Age Normal actuarial cost method.

Under the Entry Age Normal Cost Method, each participant's projected benefit is allocated on a level percent of pay basis from entry age to assumed exit age. The Actuarial Accrued Liability is the portion of the present value associated with pay prior to the valuation date. The Normal Cost is the portion of the present value associated with pay during the current plan year.

To the extent that current assets and future Normal Costs do not support participants' expected future benefits, an Unfunded Actuarial Accrued Liability ("UAAL") develops. The UAAL is generally amortized over a fixed period of time (e.g. 30 years) from the date incurred. The total contribution developed under this method is the sum of the Normal Cost and the payment toward the UAAL.

II. CURRENT ACTUARIAL ASSUMPTIONS

The current actuarial assumptions except for the investment return and general inflation assumptions were adopted and became effective December 31, 2014, and were based on an experience study for the period January 1, 2009, to December 31, 2013. The investment return and general inflation assumptions were adopted and became effective December 31, 2016.

A. Demographic Assumptions

Mortality:

Pre-Retirement mortality rates: Sex distinct Retirement Plans 2014 Total Employee mortality table weighted 85% for males and 115% for females.

Post-Retirement Healthy mortality rates: Sex distinct Retirement Plans 2014 Healthy Annuitant mortality table weighted 108% for males and 97% for females. When compared to observed experience, the recommended rates include a 23% margin for future mortality improvements.

Disabled Mortality:

Sex distinct Retirement Plans 2014 Healthy Annuitant mortality table weighted 115% for males and 115% for females.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2017 (CONT’D)

Rate of Disability: Rates at which members are assumed to become disabled under the provisions of the Fund . Sample rates assumed are as follows:

<u>ATTAINED AGE</u>	<u>RATE</u>
22	.0003
27	.0007
32	.0007
37	.0020
42	.0030
47	.0040
52	.0050
57	.0060
62	.0060

The distribution of disability types is assumed to be as follows:

Duty Disability	55%
Occupational Disease Disability	10%
Ordinary Disability	35%

Rate of Retirement: Rates at which members are assumed to retire under the provisions of the Fund . The rates assumed are as follows:

For members hired before January 1, 2011:

<u>ATTAINED AGE</u>	<u>RATE ¹</u>
50	.05
51	.05
52	.05
53	.05
54	.05
55	.19
56	.19
57	.19
58	.25
59	.25
60	.25
61	.30
62	.30 ¹
63	.00

¹ Only for members eligible for a formula annuity.

**POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2017 (CONT’D)**

For members hired on or after January 1, 2011:

ATTAINED AGE	RATE ¹
50	.02
51	.02
52	.02
53	.02
54	.03
55	.21
56	.21
57	.21
58	.27
59	.27
60	.25
61	.30
62	.30
63	1.00

¹ Only for members eligible for a formula annuity.

Turnover Rates:

The following sample rates exemplify the table:

YEARS OF SERVICE	RATE
0	0.030
1	0.028
2	0.020
3	0.015
4-5	0.010
6-10	0.009
11	0.008
12	0.007
13-24	0.006

B. Economic Assumptions

Investment Return Rate: 7.25% per annum effective as of December 31, 2016 .

General Inflation: The 7.25% Investment Return Rate assumption is comprised of a 2.75% inflation assumption and a 4.50% real rate of return assumption for pension .

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2017 (CONT’D)

Future Salary Increases: Assumed rates of individual salary increase at 3.75% per year, plus an additional percentage based on the following service scale:

COMPLETED YEARS OF SERVICE *	SCALE
1	0.3625
2	0.0325
3	0.0325
4	0.0325
5	0.0225
6-9	0.0000
10	0.0225
11-14	0.0000
15	0.0225
16-19	0.0000
20	0.0225
21-24	0.0000
25	0.0225
26-29	0.0000
30	0.0225
Over 30	0.0000

* Includes increases at 12 and 18 months of service.

Asset Value: For Book-value of Assets, bonds are at amortized value and stocks are at cost.

For statutory funding, the actuarial value of assets is smoothed by recognizing each year’s difference between actual and expected investment return at the rate of 20% per year over a five-year period.

The actuarial value of assets was marked to the market value as of January 1, 2012, and is smoothed by using a five-year phase-in of each year’s unexpected investment gains and losses.

C. Other Assumptions

Marital Status: It is assumed that 85% of members have an eligible spouse . The male spouse is assumed to be three years older than the female spouse. No assumption is made about other dependents.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2017 (CONT’D)

Beneficiary COLA Approximation: For current retirees with eligible reversionary annuitants, liabilities are calculated for the beneficiary’s benefit by using 50 percent of the retiree’s benefit as of the valuation date plus 35 percent of the retiree’s future increase in benefit from the COLA each year after the valuation date.

D. Projection Assumptions

The projections under the provisions of P.A. 99-0506 and P.A. 99-0905 were based on the following assumptions and methods:

Active Population: Active members who terminate, retire, become disabled or die during the year are replaced by new entrants such that the number of active members remains level during the projection period based on the most recent actuarial valuation. The number of active members as of the valuation at December 31, 2017 is 12,633.

New Entrant Profile: The entry age of future new entrants, which is summarized below, is based on the profile of current active members hired over the last five years with one or more years of service as of December 31, 2017. These members were hired from January 1, 2013, through December 31, 2016.

Entry Age	Number
20 to 25	326
25 to 30	850
30 to 35	462
35 to 40	205
40 o 45	2

Approximately 80% of the new entrants are assumed to be male.

New Entrant Pay: Based on the most recent employment contract, new entrants were assumed to earn \$48,078 for the plan year ending December 31, 2017. This amount does not include duty availability pay. The new entrant pay for members hired after 2017 is assumed to increase by the wage inflation assumption of 3 .75% plus duty availability pay after 3 years, increased by CPI compounded.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL METHODS AND ASSUMPTIONS
AS OF DECEMBER 31, 2017 (CONT’D)

New Entrant Pay Increases: Pay for a specific new entrant is assumed to increase in the future by the wage inflation and the service based increases disclosed in this actuarial valuation .

The projections assume a pay cap of \$113,644.91 for plan year 2018, increasing by 1.375% per year after plan year 2018. The annual increase of 1.375% per year is based on 50% of the CPI-U increase which is assumed to be 2.75% per year.

Administrative Expenses: Statutory funding projections include an explicit administrative expense assumption of \$4,843,000 for plan year end December 31, 2017, increased by 2.75% per year.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF AVERAGE ANNUAL SALARIES

Year End	Members in Service	Increase	Current Year Salary	Increase	Average Salary	Increase	Actuarial Assumptions	CPI Chicago
1987	12,602	0.2	443,122,728	2.6	35,163	2.4	6.00	4.1
1988 ¹	12,495	(0.8)	443,669,520	0.1	35,508	1.0	6.00	3.9
1989	12,060	(3.5)	437,121,504	(1.5)	36,246	2.1	6.00	5.1
1990	12,039	(0.2)	471,544,173	7.9	39,168	8.1	6.00	5.5
1991	12,513	3.9	520,015,930	10.3	41,558	6.1	6.00	3.0
1992	12,570	0.5	538,404,098	3.5	42,832	3.1	5.80	3.3
1993	12,591	0.2	561,156,282	4.2	44,568	4.1	5.80	2.3
1994	13,095	4.0	599,073,276	6.8	45,748	2.6	5.80	2.9
1995	13,437	2.6	622,413,737	3.9	46,321	1.3	5.80	2.2
1996	13,475	0.3	654,149,310	5.1	48,545	4.8	5.80	3.8
1997	13,435	(0.3)	675,515,532	3.7	50,280	3.6	5.80	1.7
1998 ²	13,586	1.1	736,401,756	9.0	54,203	7.8	5.50	31.5
1999	13,829	1.8	755,303,667	2.6	54,617	0.8	5.50	2.6
2000	13,858	0.2	759,343,026	0.5	54,795	0.3	5.50	4.0
2001	13,889	0.2	763,352,475	0.5	54,961	0.3	5.50	0.8
2002	13,720	(1.2)	866,531,789	13.5	63,158	14.9	5.50	2.5
2003	13,746	0.2	887,555,791	2.4	64,568	2.2	5.50	1.7
2004	13,569	(1.3)	874,301,958	(1.5)	64,434	(0.2)	5.50	2.2
2005	13,462	(0.8)	948,973,732	8.5	70,493	9.4	5.50	3.6
2006	13,749	2.1	1,012,983,635	6.7	73,677	4.5	5.50	0.7
2007	13,748	0.0	1,038,957,026	2.6	75,572	2.6	5.50	4.7
2008	13,373	(2.7)	1,023,580,667	(1.5)	76,541	1.3	5.50	(0.6)
2009	13,154	(1.6)	1,011,205,359	(1.2)	76,874	0.4	5.50	2.5
2010	12,737	(3.2)	1,048,084,301	3.6	82,287	7.0	5.50	1.2
2011	12,236	(3.9)	1,034,403,526	(1.3)	84,538	2.7	5.50	2.1
2012	12,026	(1.7)	1,015,170,686	(1.9)	84,415	(0.1)	5.50	1.7
2013	12,161	1.1	1,015,426,126	0.0	83,499	(1.1)	5.50	0.5
2014	12,020	(1.2)	1,074,333,318	5.8	89,379	7.0	4.80	1.5
2015	12,061	0.3	1,086,607,979	1.1	90,093	0.8	4.80	0.0
2016	12,177	1.0	1,119,526,987	3.0	91,938	2.0	4.80	1.9
2017	12,633	3.7	1,150,406,094 ⁴	2.8	91,064	(1.0)	4.80 ³	1.7
Average Increase (Decrease) for the last 5 years:		1.0%		2.5 %		1.5 %		1.1 %

¹ Figures do not include retro raise.

² Pay definition changed to include duty availability pay.

³ See actuarial methods and assumptions as of December 31, 2017 for a complete description of the current assumptions.

⁴ Of the \$1,150,406,094 current year salary, \$38,893,500 is duty availability pay.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF CHANGES IN ACTIVE PARTICIPANTS
FOR FISCAL YEAR ENDING DECEMBER 31, 2017

	<u>Male</u>	<u>Female</u>	<u>Total</u>
Number of Participants at Beginning of Fiscal Year ²	9,432	2,745	12,177
Increases:			
Participants Added During Year	826	286	1,112
Participants Returning From Inactive or Disability Status	<u>17</u>	<u>5</u>	<u>22</u>
Totals	10,275	3,036	13,311
Decreases:			
Terminations During Year	503	175	678
Number of Participants at End of Fiscal Year	<u>9,772</u>	<u>2,861</u>	<u>12,633</u>
Total Inactive Participants			640
<u>Terminations:</u>			
Withdrawal (With Refunds) ¹	17	3	20
Withdrawal (Without Refunds)	75	16	91
Ordinary Disability Benefit	10	6	16
Occupational Disease Disability Benefit	3	0	3
Duty Disability Benefit	1	4	5
Retirements	384	140	524
Deaths (Occupational)	0	0	0
Deaths (Non-occupational)	<u>13</u>	<u>6</u>	<u>19</u>
Totals	503	175	678

¹This total differs from the total of 37 shown in Exhibit D in 2017 Actuarial Valuation due to the fact that only 20 of the refunds were paid to participants who were considered to be active as of December 31, 2016.

²Includes three active members reclassified from male to female and seven active members reclassified from female to male.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF CHANGES IN ANNUITANTS AND BENEFICIARIES
FOR FISCAL YEAR ENDING DECEMBER 31, 2017

	Number at Beginning of Year	Additions During Year	Terminations During Year	Number at End of Year
Service Retirement Annuities	9,603	581	285	9,899
Widow Annuities	3,102	158 ¹	201	3,059
Children's Annuities	186	12	13	185
Ordinary Disability Benefit (Non-Occupational)	40	19	19	40
Occupational Disease Disability Benefit	33	3	5	31
Duty Disability Benefit (Occupational)	202	17	22	197
Children's Disability Benefit	164	16	26	154
Widows' Compensation Annuities (Service Connected Death)	64	0	1	63
Totals	13,394	806	572	13,628
Annual Benefits	\$ 693,853,997	\$ 66,203,945	\$ 21,597,267	\$ 738,460,675

¹Includes two widows whose benefit was previously classified as suspended annuities.

**POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
TOTAL ANNUITANTS AND BENEFICIARIES (LAST SEVEN YEARS)**

	Annuitants & Beneficiaries Beginning of Year	Additions During The Year	Terminations During The Year	Annuitants & Beneficiaries at Year-end	Average Annuitants & Beneficiaries
2011	12,381	741	459	12,663	12,522
2012	12,663	811	508	12,966	12,830
2013	12,966	683	490	13,159	13,078
2014	13,159	596	525	13,230	13,195
2015	13,230	588	608	13,210	13,220
2016	13,210	697	513	13,394	13,302
2017	13,394	806	572	13,628	13,511

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
HISTORY OF RETIREES AND BENEFICIARIES
ADDED TO AND REMOVED FROM BENEFIT PAYROLL

Yr.	Added to Payroll		Removed from Payroll		Payroll End of Year		Average Annual Benefits	Increase to Avg. Benefits
	No.	Annual Benefits.	No.	Annual Benefits	No.	Annual Benefits		
Employee Annuitants (Male and Female)								
2010	551	44,873,260	283	12,055,142	8,495	450,742,884	53,060	4.5%
2011	500	42,603,517	232	10,471,101	8,763	482,875,300	55,104	3.9%
2012	539	43,830,960	267	12,652,422	9,035	514,053,838	56,896	3.3%
2013	401	36,004,890	242	11,690,500	9,194	538,368,228	58,556	2.9%
2014	392	34,915,092	275	13,594,175	9,311	559,689,145	60,111	2.7%
2015	363	34,830,781	289	15,450,195	9,385	579,069,731	61,702	2.6%
2016	494	44,891,597	276	15,314,830	9,603	608,646,498	63,381	2.7%
2017	581	56,599,441	285	15,718,884	9,899	649,527,055	65,615	3.5%
Widow/Widower Annuitants (Not Including Compensation) ¹								
2010	145	2,838,113	177	2,598,598	3,079	53,621,501	17,415	1.5%
2011	144	3,709,829	132	2,007,664	3,091	55,323,666	17,898	2.8%
2012	174	4,436,964	143	2,110,153	3,122	57,650,477	18,466	3.2%
2013	157	3,969,877	149	2,259,835	3,130	59,360,519	18,965	2.7%
2014	128	3,403,918	149	2,515,975	3,109	60,248,462	19,379	2.2%
2015	147	4,022,206	178	2,831,532	3,078	61,439,136	19,961	3.0%
2016	140	4,231,504	116	1,939,517	3,102	63,731,123	20,545	2.9%
2017	158	7,074,268	201	3,335,935	3,059	67,469,456	22,056	7.4%

¹Not including Compensation Annuitants.

All Other Annuitants								
2014	76	\$2,340,324	101	\$2,527,422	810	\$24,273,438	29,967	—%
2015	78	3,041,776	141	4,152,044	747	23,163,170	31,008	3.5%
2016	63	2,264,097	121	3,950,891	689	21,476,376	31,170	0.5%
2017	67	2,530,236	86	2,542,448	670	21,464,164	32,036	2.8%

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
ACTUARIAL ACCRUED LIABILITY PRIORITIZED SOLVENCY TEST –
(FOR FUNDING PURPOSES)

Valuation Date 12/31	(1)	(2)	(3)	Actuarial Value of Assets	Portion(%)of Present Value Covered By Assets		
	Active and Inactive Member Contribution	Retirees and Beneficiaries	Active and Inactive Members (ER Financed Portion)		(1)	(2)	(3)
2002	846,622,627	3,769,125,439	1,769,097,893	4,124,579,960	100.00%	86.97%	0.00%
2003 ^{1,2}	893,425,839	3,856,262,804	1,831,744,607	4,039,695,590	100.00%	81.59%	0.00%
2004 ²	910,480,098	4,313,531,046	1,810,260,330	3,933,031,342	100.00%	70.07%	0.00%
2005 ^{1,2}	950,764,942	4,677,632,909	2,094,339,296	3,914,431,654	100.00%	63.36%	0.00%
2006	1,016,217,810	4,858,554,051	2,241,771,313	3,997,990,919	100.00%	61.37%	0.00%
2007	1,082,742,927	5,006,931,293	2,309,718,259	4,231,681,817	100.00%	62.89%	0.00%
2008	1,144,380,257	5,208,199,833	2,299,966,099	4,093,719,894	100.00%	56.63%	0.00%
2009 ¹	1,217,645,647	5,391,373,730	2,291,882,108	3,884,978,241	100.00%	49.47%	0.00%
2010	1,251,147,487	5,717,654,520	2,406,050,870	3,718,954,539	100.00%	43.16%	0.00%
2011	1,286,345,939	6,041,684,411	2,360,319,555	3,444,690,362	100.00%	35.72%	0.00%
2012 ¹	1,309,825,828	6,475,282,318	2,435,530,363	3,148,929,770	100.00%	28.40%	0.00%
2013 ²	1,358,193,244	6,594,792,197	2,127,620,103	3,053,881,777	100.00%	25.71%	0.00%
2014 ¹	1,410,544,951	7,159,705,456	2,477,941,780	2,954,318,954	100.00%	21.56%	0.00%
2015	1,484,316,625	7,279,289,531	2,524,630,892	3,186,423,762	100.00%	23.38%	0.00%
2016 ^{1,2}	1,518,846,208	8,018,211,337	3,319,492,854	3,052,056,555	100.00%	19.12%	0.00%
2017	1,532,514,218	8,344,902,504	3,216,465,846	3,103,989,602	100.00%	18.83%	0.00%

¹Change in actuarial assumptions.

²Change in benefits.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF STATUTORY CONTRIBUTION ¹

	Total
<u>(1) Total Normal Cost for 2018</u>	\$ 226,080,806
<u>(2) Actuarial Accrued Liability (AAL) at 12/31/2017 ¹</u>	\$ 13,278,023,032
<u>(3) Unfunded AAL (UAAL)</u>	
(a) Actuarial Value of Assets at 12/31/2017	\$ 3,066,596,885
(b) UAAL (2-3(a))	10,211,426,147
<u>(4) Estimated Member Contributions during 2018</u>	\$ 113,583,000
<u>(5) Estimated City Contribution for Tax Levy Year 2018</u>	\$ 557,000,000

¹ Pension liabilities were discounted at 7.25% per year.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
DEVELOPMENT OF ACTUARIAL GAINS AND LOSSES FOR 2017 –
(FOR FUNDING PURPOSES)

UNFUNDED ACTUARIAL ACCRUED LIABILITY - BEGINNING OF 2017

(1) Actuarial Accrued Liability - 12/31/2016	\$12,856,550,399
(2) Actuarial Value of Assets - 12/31/2016	<u>3,052,056,555</u>
(3) Unfunded Accrued Actuarial Liability - 12/31/2016	\$9,804,493,844

EXPECTED UNFUNDED ACTUARIAL ACCRUED LIABILITY - END OF 2017

(4) Normal Cost for 2017	\$ 222,550,241
(5) Total Contributions for 2017	597,591,680
(6) Interest on (3), (4), & (5) at Valuation Rates	<u>705,677,015</u>
(7) Expected Unfunded Actuarial Accrued Liability - 12/31/2017	\$10,135,129,420
((3)+(4)-(5)+(6))	

DEVIATIONS FROM EXPECTED

(8) (Gain)/Loss on Investment Return (Smoothed (Actuarial) Value)	\$ 13,688,105
(9) (Gain)/Loss from Salary Changes	(91,757,062)
(10) (Gain)/Loss from Retirement	26,129,948
(11) (Gain)/Loss from Turnover	495,409
(12) (Gain)/Loss from Mortality	(29,431,371)
(13) (Gain)/Loss from Disability	(11,432,824)
(14) (Gain)/Loss from New Entrants and Rehired Members	2,809,568
(15) (Gain)/Loss from All Other Sources	<u>(55,738,227)</u>
(16) Composite Actuarial (Gain)/Loss	\$(145,236,454)
(17) (Gain)/Loss as a percentage of Expected UAAL (16)/(7)	(1.4%)
(18) (Gain)/Loss from Actuarial Cost Method Change	\$0
(19) (Gain)/Loss from Provision Changes	\$0
(20) (Gain)/Loss from Assumption Changes	\$0

UNFUNDED ACTUARIAL ACCRUED LIABILITY - END OF 2017

(21) Unfunded Accrued Actuarial Liability - 12/31/2017	\$9,989,892,966
((7)+(16)+(18)+(19)+(20))	

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF BASIC ACTUARIAL VALUES –
(FOR FUNDING PURPOSES)

	APV of Projected Benefits <u>As of 12/31/2017</u>	Actuarial Accrued Liability (AAL) <u>As of 12/31/2017</u>
<u>(1) Values for Active Members</u>		
(a) Retirement	\$6,228,485,149	\$4,486,405,419
(b) Termination	95,437,499	13,992,469
(c) Disability	468,401,865	184,119,061
(d) Death	64,695,264	29,327,510
Total for Actives	\$6,857,019,777	\$4,713,844,459
<u>(2) Values for Inactive Members</u>		
(a) Retired	7,452,219,126	7,452,219,126
(b) Survivor	612,502,601	612,502,601
(c) Disability	271,205,470	271,205,470
(d) Inactive (Deferred Vested)	35,135,605	35,135,605
(e) Children	8,975,307	8,975,307
Total for Inactives	8,380,038,109	8,380,038,109
<u>(3) Grand Totals</u>	\$15,237,057,886	\$13,093,882,568
<u>(4) Normal Cost for Active Members</u>	\$ 224,238,368	
<u>(5) Actuarial Present Value of Future Compensation</u>	\$12,411,705,639	

**POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SCHEDULE OF RETIRED MEMBERS BY TYPES OF BENEFIT
AND MONTHLY BENEFIT LEVELS**

Monthly Benefit	Retirement		Disability		Widow ¹		Child		Totals	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Under \$100	5							1	5	1
\$100 to under \$250	9	3					95	76	104	79
\$250 to under \$500	21	9					28	20	49	29
\$500 to under \$750	20	5					47	41	67	46
\$750 to under \$1,000	7	4					14	5	21	9
\$1,000 to under \$2,000	59	38			41	1,966	8	4	108	2,008
\$2,000 to under \$3,000	217	22			18	857			235	879
\$3,000 to under \$4,000	782	239	18	22	2	148			802	409
\$4,000 to under \$5,000	1,644	511	73	44		38			1,717	593
\$5,000 to under \$6,000	2,274	408	61	26	3	30			2,338	464
\$6,000 to under \$7,000	2,120	299	11	10		13			2,131	322
\$7,000 to under \$8,000	679	91	3			3			682	94
\$8,000 to under \$9,000	197	25				1			197	26
\$9,000 to under \$10,000	78	9				1			78	10
\$10,000 and over	109	15				1			109	16
Totals:	8,221	1,678	166	102	64	3,058	192	147	8,643	4,985

¹Includes reversionary.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SCHEDULE OF AVERAGE BENEFIT PAYMENTS FOR NEW ANNUITIES GRANTED
DURING 2010-2017

Years of Service:		0-9	10-14	15-19	20-24	25-29	30-34	>= 35	Total
	Number of Retired Members	0	1	13	105	161	140	131	551
2010	Average annual salary used	\$0	\$81,122	\$70,339	\$80,639	\$88,735	\$91,739	\$92,194	\$88,330
	Average Monthly Benefit	\$0	\$2,535	\$2,667	\$3,837	\$5,385	\$5,734	\$5,762	\$5,199
	Number of Retired Members	1	8	16	95	175	103	102	500
2011	Average annual salary used	\$18,730	\$76,848	\$70,140	\$82,778	\$92,829	\$93,780	\$98,280	\$91,097
	Average Monthly Benefit	\$390	\$2,158	\$2,728	\$3,949	\$5,497	\$5,861	\$6,142	\$5,257
	Number of Retired Members	0	9	22	123	217	88	80	539
2012	Average annual salary used	\$0	\$72,245	\$65,305	\$85,175	\$92,825	\$94,854	\$98,415	\$90,773
	Average Monthly Benefit	\$0	\$2,066	\$2,511	\$4,002	\$5,408	\$5,928	\$6,151	\$5,108
	Number of Retired Members	0	6	20	118	161	62	34	401
2013	Average annual salary used	\$0	\$62,730	\$75,088	\$86,979	\$94,193	\$99,759	\$102,980	\$92,252
	Average Monthly Benefit	\$0	\$1,809	\$2,857	\$4,164	\$5,427	\$6,235	\$6,436	\$5,084
	Number of Retired Members	0	4	18	122	180	44	24	392
2014	Average annual salary used	\$0	\$64,795	\$72,985	\$87,586	\$95,372	\$94,991	\$104,035	\$92,097
	Average Monthly Benefit	\$0	\$1,907	\$2,815	\$4,230	\$5,746	\$6,052	\$6,634	\$5,189
	Number of Retired Members	0	7	14	105	184	42	11	363
2015	Average annual salary used	\$0	\$34,263	\$85,670	\$90,037	\$100,124	\$104,876	\$102,529	\$96,001
	Average Monthly Benefit	\$0	\$951	\$3,334	\$4,271	\$6,005	\$6,555	\$6,408	\$5,379
	Number of Retired Members ¹	1	5	14	124	257	80	12	493
2016	Average annual salary used	\$50,400	\$23,820	\$78,131	\$91,293	\$101,855	\$108,887	\$109,058	\$98,945
	Average Monthly Benefit	\$1,050	\$622	\$2,966	\$4,292	\$6,123	\$6,805	\$6,816	\$5,634
	Number of Retired Members	1	2	21	166	258	118	15	581
2017	Average annual salary used	\$94,501	\$19,905	\$74,798	\$93,477	\$98,445	\$103,641	\$104,267	\$97,099
	Average Monthly Benefit	\$5,709	\$630	\$2,904	\$4,456	\$5,735	\$6,478	\$6,517	\$5,421

1 Excludes data correction for one retiree previously valued as deceased.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017

PARTICIPANTS

An employee in the police department of the City of Chicago appointed and sworn or designated by law as a peace officer with the title of policeman, policewoman, chief surgeon, police surgeon, police dog catcher, police kennelman, police matron and members of the police force of the police department.

SERVICE

In computing service rendered by a police officer, the following periods shall be counted, in addition to all periods during which he performed the duties of his position, as periods of service for annuity purposes only: All periods of (a) vacation; (b) leave of absence with pay; (c) military service; (d) disability for which the police officer receives disability benefit. The calculation of service is based on a day- to-day basis for most purposes. For the purpose of calculating benefits under the Dominant Formula, one year of Service is credited for a year in any portion of which a police officer is compensated.

RETIREMENT

Eligibility

Attainment of age 50 with at least 10 years of service .

For participants that first became members on or after January 1, 2011, attainment of age 55 with at least 10 years of service. Participants may retire at attainment of age 50 with 10 years of service with a reduced benefit.

Mandatory

Effective in plan year 2003, retirement is mandatory for a participant who has attained age 63.

Accumulation Annuity

At age 50 or more, with 10 or more years of service, the employee is entitled to an annuity based on the sums accumulated for age and service annuity plus 1/10 of the sum accumulated from the contributions by the City for the age and service annuity for each completed year of service after the first 10 years. At age 50 or more with 20 or more years, the employee is entitled to an annuity based on all sums accumulated.

Formula Minimum Annuity

While there are several alternative formulas available with 20 or more years of service, the Dominant Formula is 50% of highest average salary (including duty availability pay) in 48 consecutive months within the last 10 years of service plus 2.5% for each year or fraction of service over 20 years, limited to 75% of average salary.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT'D)

***Mandatory Retirement
Minimum Annuity***

A police officer who is required to withdraw from service due to attainment of mandatory retirement age who has less than 20 years of service credit may elect to receive an annuity equal to 30% of average salary for the first 10 years of service, plus 2% of average salary for each completed year of service in excess of 10, to a maximum of 48% of average salary. This benefit qualifies for post retirement increases.

Post-Retirement Increase

A retiree born before January 1, 1966, with at least 20 years of service or receiving a mandatory retirement minimum annuity, receives an increase of 3% of the original annuity, starting on the first of the month following the first anniversary of his retirement or the first of the month following attainment of age 55, whichever is later, and shall not be subject to a 30% maximum increase. For retirees born on and after January 1, 1966, automatic increases are 1.5% of the original annuity, commencing at age 60, or the first anniversary of retirement, if later, to a maximum of 30%.

For participants that first became members on or after January 1, 2011, increases are equal to the lesser of 3.00% and 50% of CPI-U of the original benefit, commencing at age 60.

Minimum Annuity

Beginning with the monthly annuity payment due on January 1, 2016, the benefit of any retiree who retired at age 50 or over with at least 20 years of service, or due to termination of disability is not less than 125% of the Federal Poverty Level.

For participants that first became members on or after January 1, 2011, the member is entitled to an annuity based on an accrual rate of 2.5% of the final average salary for each fraction of service. Maximum is 75% of the final average salary. Final average salary is calculated using salary from the eight highest 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% and 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 that the new amount will be calculated and made available to the pension funds.

For participants that first became members on or after January 1, 2011, who retire after age 50 but before age 55 is attained, the member is entitled to an annuity based on an accrual rate of 2.5% of the final average salary for each fraction of service, reduced by one half of one percent per month for retirement prior to age 55, subject to a maximum benefit of 75%.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT'D)

Reversionary Annuity A member, prior to retirement, may elect to reduce his own annuity, and provide a reversionary annuity, to begin upon the officer's death, for the officer's spouse.

SURVIVOR INCOME BENEFITS PAYABLE ON DEATH

Death in Service (Non-Duty): Generally, a money-purchase benefit is provided, based on total salary deductions and City contributions. However, if a policeman dies in service after December 31, 1985, with at least 1.5 years of service, the widow's annuity is the greater of (a) 30% of the annual maximum salary attached to the classified civil service position of a first class patrolman at the time of his death (without dollar limit) or (b) 50% of the benefit accrued by the policeman at date of death.

The lifetime benefit is payable until death.

Death in Service (Duty Related):

Compensation Annuity 75% of the member's salary attached to the civil service position that would ordinarily have been paid to such member as though in active discharge of his duties at the time of death payable until the date the policeman would have attained age 63.

Supplemental Annuity Payable for life and is equal to the difference between the money purchase annuity for the spouse and an amount equal to 75% of the annual salary (including all salary increases and longevity raises) the police officer would have been receiving when he attained age 63 if the police officer had continued in service at the same rank last held in the department.

Death after Retirement If a police officer retires on or after January 1, 1986, and subsequently dies, the widow's annuity is 40% before 1988 and 50% on and after January 1, 1988 of the retired policeman's annuity at the time of death (without dollar limit).

Maximum Annuity \$500 a month (after discount for age difference) under both the accumulation method and the old formula method. There is no dollar limit on the 30%, 40% or 50% benefit.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT'D)

Minimum Annuity The minimum widow's annuity shall be no less than 125% of the Federal Poverty Level.

For participants that first became members on or after January 1, 2011, widow benefits are equal to 66-2/3% of the officer's earned annuity at the date of death. Automatic increases to the annuity are equal to the lesser of 3.00% and 50% of CPI-U, commencing when the survivor reaches age 60, and applied to the original granted retirement annuity.

CHILDREN'S ANNUITIES

Eligibility Payable at death of the policeman to all unmarried children less than 18 years of age.

Benefit 10% of the annual maximum salary of a first class patrolman during widow (widower) life, 15% otherwise.

Payable Until Age 18 . If the child is disabled, benefit is payable for life or as long as such disablement exists.

Family Maximum 60% (non-duty death) or 100% (duty death) of the salary that would ordinarily been paid to the policeman, if he had been in the active discharge of his duties.

Parent's Annuities

Eligibility

Payable to a dependent parent at the death of a policeman who is in either active service, or receiving a disability benefit, or on leave of absence, or in receipt of an annuity granted after 20 years of service, or waiting to start receiving an annuity granted for 20 years of service. The benefit is only payable if there are no surviving spouses or children eligible for benefits.

Benefit 18% of the current salary attached to the rank at separation from service.

Payable until Death of the dependent parent.

DUTY DISABILITY BENEFIT

Eligibility Disabling condition incurred in the performance of duty.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT'D)

Benefit 75% of salary at the time the disability is allowed plus \$100.00 per month for each unmarried child less than age 18, (total amount of child's benefits shall not exceed 25% of salary). Beginning January 1, 2000, after 7 years of payment, the benefit shall not be less than 60% of the current salary attached to the rank held by the policemen at the time of disability. Payable to employee's age 63 or by operation of law, whichever is later. Salary deductions are contributed by the City.

OCCUPATIONAL DISEASE DISABILITY BENEFIT

Eligibility Heart attack or any disability heart disease after 10 years of service.

Benefit 65% of salary attached to the rank held by the police officer at the time of his or her removal from the police department payroll with a minimum after 10 years of 50% of the current salary attached to the rank. Each natural or legally adopted unmarried child of the officer under the age of 18 is entitled to a benefit of \$100 per month. This benefit is not terminated at age 18 if the child is then dependent by reason of physical or mental disability. Salary deductions are contributed by the City.

ORDINARY DISABILITY BENEFIT

Eligibility Disabling condition other than duty or occupational related.

Benefit 50% of salary at the time of injury, payable for a period not more than 25% of service (excluding any previous disability time) rendered prior to injury, nor more than five years. Disability shall cease at age 63. Salary deductions are contributed by the City.

DEATH BENEFIT

Eligibility Payable upon the death of a police officer whose death occurs while in active service; on authorized leave of absence; within 60 days of receipt of salary; while receiving duty or ordinary disability benefit; occurring within 60 days of termination of such benefit; or occurring on retirement while in receipt of annuity and separation was effective after 20 years of service. This benefit is payable to beneficiaries or, if none, to estate.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT'D)

Benefit

Death in Service:

AGE AT DEATH	BENEFIT
49 and under	\$12,000
50-62	\$12,000 less \$400 for each year by which age at death exceeds 49

Death after Retirement:

AGE AT DEATH	BENEFIT
50 and over	\$6,000

If death results from injury incurred in performance of duty before retirement on annuity, the benefit payable is \$12,000 regardless of the attained age.

REFUNDS

Policemen

Without regard to service and under age 50, or with less than 10 years of service and under age 57 at withdrawal: a refund of all salary deductions together with 1.5% simple interest until the date of withdrawal.

For Spouse's Annuity

Upon retirement an unmarried policeman will receive a refund of contributions for spouse's annuity, accumulated at 3% compounded annually.

Of Remaining Amounts

If at death of a retired policeman the total member contributions paid while active exceed the total retirement benefits paid to date of death, the difference is payable.

CONTRIBUTIONS

Salary Deductions

Employee	7 %
Spouse	1½%
Annuity Increase	½%
	9 %

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT'D)

<i>City Contributions</i> ¹	Employee	9-5/7%	
	Spouse	2%	
	Annuity Increase	1/2%	Unallocated
		12-3/14%	

¹ Credited to Participant's Accumulation Annuity and Widow's Annuity Account

In addition to the above contributions, a contribution is made to support the Death Benefit. Policemen contribute \$2.50 per month. City contributes a total of \$224,000 for all policemen.

Prior to 2015, the total City contribution is generated by a tax equal to double the contributions by the policemen to the Fund two years prior to the year of the tax levy.

Under P. A. 99-0506, City contributions are equal to \$420 million in payment year 2016, \$464 million in payment year 2017, \$500 million in payment year 2018, \$557 million in payment year 2019 and \$579 million in payment year 2020. For payment years after 2020, the City is required to make level percent of pay contributions for plan years 2020 through 2055 that along with member contributions and investment earnings are expected to generate a projected funded ratio of 90% by plan year end 2055.

***"PICK UP" OF
EMPLOYEE SALARY
DEDUCTIONS***

Beginning January 1, 1982, the employee contributions were "picked up" by the employer. The W-2 salary is therefore reduced by the amount of contribution. For pension purposes the salary remains unchanged. Income tax will be paid when a refund or annuity is received. For the purpose of benefits, refunds or contributions, these contributions will be treated as employee contributions.

POLICEMEN’S ANNUITY AND BENEFIT FUND OF CHICAGO
SUMMARY OF PRINCIPAL ELIGIBILITY AND BENEFIT PROVISIONS
AS OF DECEMBER 31, 2017 (CONT’D)

SALARY CAP AND COLA DEVELOPMENT FOR MEMBERS HIRED ON OR AFTER JANUARY 1, 2011

Year Ending	CPI-U	½ CPI-U	COLA	Maximum Annual Pensionable Earnings
2011			3.00%	\$106,800.00
2012	3.90%	1.95%	1.95%	\$108,882.60
2013	2.00%	1.00%	1.00%	\$109,971.43
2014	1.20%	0.60%	0.60%	\$110,631.26
2015	1.70%	0.85%	0.85%	\$111,571.63
2016	0.00%	0.00%	0.00%	\$111,571.63
2017	1.50%	0.75%	0.75%	\$112,408.42
2018	2.20%	1.10%	1.10%	\$113,644.91



Statistical Section

SUPPLEMENTAL INFORMATION

The following section contains special schedules designed to supplement benefit payment data contained elsewhere in this Comprehensive Annual Financial Report.

- **Revenues by Source and Expenses by Type** details the specific sources and uses of funds: Employee contributions obtained from participants through payroll deductions, employer contributions from the City of Chicago's real estate tax levy and finally, net investment income derived from the Fund's portfolio of assets . On the expense side, the largest component is benefit payments to participants, followed by refunds of contributions to participants and finally, the Fund's administrative expenses.
- **Schedule of Benefit Expenses by Type (Last 10 Years)** further details the total annual benefit expense by breaking it down into payments to annuitants, survivors, disability payments, death benefits, and health insurance supplements.
- **Average Employee Retirement Benefits Payable** provides some key demographics of the annuitant population including average annual benefit paid, average current age, average age at retirement, and average years of service prior to retirement.
- **Retirees and Beneficiaries by Type of Benefit** provides totals for each type of benefit payment including those to annuitants and their survivors as well as to employees receiving disability benefits from the Fund.

**REVENUES BY SOURCE AND
EXPENSES BY TYPE**

Year	Employee Contributions(1)	Employer Contributions(2)	Net Investment Income (3)	Total	Employer Cont. as a percent of Current Year Payroll
2008	93,207,408	181,685,991	(1,104,909,466)	(830,016,067)	17.75%
2009	95,614,390	180,510,851	567,314,823	844,239,428	17.85%
2010	108,402,353	183,834,639	369,558,055	661,815,078	17.54%
2011	98,222,258	183,521,528	33,656,109	315,504,361	17.51%
2012	95,892,052	207,228,022	353,176,346	656,719,636	20.41%
2013	93,328,944	188,889,240	415,293,612	697,991,124	18.60%
2014	95,675,538	187,074,950	181,901,293	465,392,086	17.41%
2015	107,626,311	582,277,634	(5,333,795)	687,661,695	53.59%
2016	101,475,864	282,996,000	142,699,124	527,170,988	25.15%
2017	103,011,250	494,580,430	412,190,404	1,009,782,084	42.99%

Year	Benefits Expenses	Administrative Expenses	Refunds	Total	Income Less Payouts
2008	491,602,860	4,153,570	6,118,449	501,874,879	(1,331,890,946)
2009	508,515,984	4,303,599	6,193,872	519,013,455	325,225,973
2010	536,244,720	3,924,928	7,587,436	548,197,135	113,617,943
2011	567,968,186	3,895,731	7,337,234	579,664,377	(264,160,016)
2012	602,756,032	4,396,638	11,150,565	618,795,083	37,924,553
2013	633,839,274	3,891,329	8,087,018	646,223,804	51,767,320
2014	655,346,057	3,817,256	8,991,636	668,578,318	(203,186,232)
2015	678,391,614	4,062,553	7,826,847	690,726,980	(3,065,285)
2016	705,646,617	4,280,280	10,704,842	721,101,221	(193,930,233)
2017	737,873,928	4,843,012	10,017,655	752,734,595	257,047,489

(1) Includes deductions in lieu for disability.

(2) Net tax levy and miscellaneous income.

(3) Includes realized net gain or loss on sale and exchange of assets, and net of investment expense.

**SCHEDULE OF BENEFIT EXPENSES
BY TYPE (LAST 10 YEARS)**

Year	Employee	Spouse	Dependent	Ordinary, Duty and Children Disability	Death	Hospitalization	Total
2008	401,472,930	56,142,862	1,351,770	22,005,912	1,779,200	8,850,186	491,602,860
2009	417,879,734	56,616,500	1,326,895	21,803,624	1,622,800	9,266,431	508,515,984
2010	442,653,907	57,739,825	1,344,265	23,370,160	1,782,400	9,354,163	536,244,720
2011	472,856,232	59,935,287	1,340,422	22,184,051	1,510,800	9,591,394	567,968,186
2012	506,760,531	61,250,640	1,416,014	21,427,161	1,543,000	9,756,686	602,756,032
2013	538,536,309	63,523,734	1,315,842	18,981,479	1,634,600	9,847,310	633,839,274
2014	559,600,101	64,434,631	1,293,297	18,793,972	1,566,933	9,657,123	655,346,057
2015	582,438,574	65,651,185	1,355,124	17,595,977	1,909,200	9,441,534	678,391,614
2016	609,713,604	67,839,603	1,266,204	16,101,692	1,570,000	9,155,514	705,646,617
2017	645,040,385	70,591,423	1,562,416	18,832,104	1,847,600	0	737,873,928

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
AVERAGE EMPLOYEE RETIREMENT BENEFITS PAYABLE

Years Ended	Average Annual Benefit	Average Current Age of Retirees	Average Age at Retirement Current Year*	Average Years of Benefit Service at Retirement Current Year*
1987	16,257	67	58.1	30.1
1988	17,855	67	58.8	30.9
1989	19,315	67	58.6	30.7
1990	21,120	68	58.9	30.2
1991	21,782	68	58.4	30.8
1992	23,128	68	57.7	30.3
1993	24,724	68	56.9	29.6
1994	25,636	68	55.7	29.5
1995	26,996	67	55.3	29.2
1996	28,412	67	55.5	29.8
1997	29,867	67	55.0	29.3
1998	31,682	66	54.6	30.0
1999	33,220	66	54.8	29.9
2000	34,880	66	56.3	31.6
2001	36,428	66	56.4	29.8
2002	38,199	66	55.6	29.4
2003	38,998	66	57.1	30.2
2004	41,914	66	57.5	30.4
2005	43,930	67	57.3	30.6
2006	45,680	67	58.0	29.6
2007	47,392	67	58.1	29.3
2008	49,239	68	58.3	29.4
2009	50,799	68	59.2	28.6
2010	53,060	68	59.1	28.1
2011	55,104	68	59.5	27.4
2012	56,896	69	58.7	26.7
2013	58,556	69	58.2	26.1
2014	60,111	69	57.6	26.2
2015	61,702	69	57.5	26.5
2016	63,381	69	57.5	26.9
2017	65,615	69	57.5	26.6

* Averages for new annuitants in 2017.

POLICEMEN'S ANNUITY AND BENEFIT FUND OF CHICAGO
RETIREES AND BENEFICIARIES BY TYPE OF BENEFIT

Years	ANNUITANTS			DISABILITY				Widow Comp.	Total
	Employee	Spouse ¹	Child	Ordinary	Duty	Occup.	Child ²		
1987	4,467	3,100	354	66	156			75	8,218
1988	4,595	3,184	350	63	167			78	8,437
1989	4,772	3,202	335	58	179			71	8,617
1990	4,936	3,214	335	51	187			66	8,789
1991	5,033	3,137	329	75	192			68	8,834
1992	5,109	3,129	310	83	204			66	8,901
1993	5,195	3,151	294	59	211		160	66	9,136
1994	5,309	3,123	281	51	221		159	64	9,208
1995	5,510	3,133	254	51	231	1	144	60	9,384
1996	5,714	3,120	252	67	256	12	158	59	9,638
1997	5,945	3,104	240	59	270	36	130	59	9,843
1998	6,241	3,093	228	56	279	57	150	57	10,161
1999	6,520	3,118	249	57	291	76	150	58	10,519
2000	6,876	3,107	267	48	274	87	149	59	10,867
2001	7,192	3,114	255	52	265	95	143	59	11,175
2002	7,392	3,092	235	38	289	103	150	59	11,358
2003	7,498	3,083	247	29	285	97	139	63	11,441
2004	7,815	3,133	249	44	287	85	130	65	11,808
2005	8,026	3,107	247	35	298	82	139	65	11,999
2006	8,083	3,093	255	39	291	69	132	64	12,026
2007	8,155	3,137	242	52	284	65	136	64	12,135
2008	8,210	3,148	237	39	286	58	139	66	12,183
2009	8,227	3,111	232	44	284	52	138	66	12,154
2010	8,495	3,079	222	37	284	40	155	69	12,381
2011	8,763	3,091	214	43	270	36	176	70	12,663
2012	9,035	3,122	214	47	263	36	180	69	12,966
2013	9,194	3,130	206	46	269	35	213	66	13,159
2014	9,311	3,109	197	48	259	36	204	66	13,230
2015	9,385	3,078	198	41	230	35	178	65	13,210
2016	9,603	3,102	186	40	202	33	164	64	13,394
2017	9,899	3,059	185	40	197	31	154	63	13,628

¹ Includes reversionary.

² Children's Disability Benefit not tracked before 1993.

Schedule of Active Member Data - Last 10 Years

Year	Number of Members at Year End	Annual Average Salary	% Increase in Average Salary
2008	13,373	76,541	--%
2009	13,154	76,874	0.4%
2010	12,737	82,287	7.0%
2011	12,236	84,538	2.7%
2012	12,026	84,414	(0.1)%
2013	12,161	83,499	(1.1)%
2014	12,020	89,379	7.0%
2015	12,061	90,093	0.8%
2016	12,177	91,938	2.0%
2017	12,633	91,064	(1.0)%

Schedule of Retired Member Data - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	Average Monthly Benefit	Average Age at Retirement	Average Age of Current Retirees	Average Years of Service at Retirement
2008	8,210	49,239	4,103	58.3	68	29.4
2009	8,227	50,799	4,233	59.2	68	28.6
2010	8,495	53,060	4,422	59.1	68	28.1
2011	8,763	55,104	4,592	59.5	68	27.4
2012	9,035	56,896	4,741	58.7	69	26.7
2013	9,194	58,556	4,880	58.2	69	26.1
2014	9,311	60,111	5,009	57.6	69	26.2
2015	9,385	61,702	5,142	57.5	69	26.5
2016	9,603	63,381	5,282	57.5	69	26.9
2017	9,899	65,615	5,468	57.5	69	26.6

Schedule of Widow Annuitants - Last 10 Years

Year	Number at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	3,148	16,992	--%
2009	3,111	17,159	1.0%
2010	3,079	17,415	1.5%
2011	3,091	17,898	2.8%
2012	3,122	18,466	3.2%
2013	3,130	18,965	2.7%
2014	3,109	19,379	2.2%
2015	3,078	19,961	3.0%
2016	3,102	20,545	2.9%
2017	3,059	22,056	7.4%

Schedule of Children's Annuities - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	237	5,615	--%
2009	232	5,749	2.4%
2010	222	5,683	(1.1)%
2011	214	5,992	5.4%
2012	214	6,365	6.2%
2013	206	6,388	0.4%
2014	197	6,565	2.8%
2015	198	6,844	4.2%
2016	186	6,808	(0.5)%
2017	185	6,947	2.0%

Schedule of Ordinary Disability Recipients Data - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	39	37,407	--%
2009	44	38,081	1.8%
2010	37	40,665	6.8%
2011	43	41,864	2.9%
2012	47	42,164	0.7%
2013	46	41,958	-0.5%
2014	48	41,917	-0.1%
2015	41	44,184	5.4%
2016	40	45,373	2.7%
2017	40	47,255	4.1%

Schedule of Duty Disability Recipients Data - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	286	48,682	--%
2009	284	49,842	2.4%
2010	284	52,822	6.0%
2011	270	54,703	3.6%
2012	263	54,910	0.4%
2013	269	55,587	1.2%
2014	259	56,301	1.3%
2015	230	59,057	4.9%
2016	202	60,244	2.0%
2017	197	61,411	1.9%

Schedule of Occupational Disease Disability Recipients Data - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	58	45,548	--%
2009	52	46,427	1.9%
2010	40	48,439	4.3%
2011	36	49,341	1.9%
2012	36	50,375	2.1%
2013	35	52,191	3.6%
2014	36	53,579	2.7%
2015	35	56,287	5.1%
2016	33	57,573	2.3%
2017	31	58,140	1.0%

Schedule of Children's Disability Recipients Data - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	139	1,200	--%
2009	138	1,200	0%
2010	155	1,200	0%
2011	176	1,200	0%
2012	180	1,200	0%
2013	213	1,200	0%
2014	204	1,200	0%
2015	178	1,200	0%
2016	164	1,200	0%
2017	154	1,200	0%

NOTE: Child disability benefits are \$100 per month .

Schedule of Widow's Compensation Annuities - Last 10 Years

Year	Number of Annuitants at Year End	Average Annual Benefit	% Increase in Average Benefit
2008	66	55,386	--%
2009	66	56,596	2.2%
2010	69	57,529	1.6%
2011	70	61,122	6.2%
2012	69	61,566	0.7%
2013	66	63,079	2.5%
2014	66	63,427	0.6%
2015	65	64,801	2.2%
2016	64	64,195	-0.9%
2017	63	66,654	3.8%

Schedule of Health Insurance Supplement Data – Last 8 Years

Year	Number of Members at Year End	Annual Average Benefit Subsidy	% Increase in Average Benefit Subsidy
2010	10,118	\$925	--%
2011	10,368	\$925	0.0%
2012	10,738	\$909	-1.7%
2013	10,809	\$911	0.2%
2014	10,676	\$905	-0.7%
2015	10,405	\$907	0.2%
2016	10,268	\$892	-1.7%
2017	0	0	0

Note: Health Insurance Supplement benefits were \$95 per month for each annuitant that was not qualified to receive Medicare benefits or \$65 per month for each annuitant that was qualified to receive Medicare benefits. Health insurance supplement benefits were not based upon final average salary or credited service year. The benefit amount was exclusively determined by Medicare eligibility. Health Insurance Supplement benefits expired December 31, 2016.

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