

Comprehensive Annual Financial Report

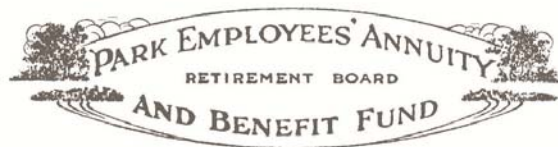
of the

Park Employees' and
Retirement Board Employees'
Annuity and Benefit Fund

Component Unit of the Chicago Park District
State of Illinois

For the years ended December 31, 2019 and 2018

Prepared by the Administrative Staff of the Retirement Board



Park Employees' Annuity and Benefit Fund
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Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**Park Employees' and Retirement Board
Employees' Annuity and Benefit Fund
Illinois**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

December 31, 2018

Christopher P. Morill

Executive Director/CEO

INTRODUCTION

Transmittal Letter

TRUSTEES

Edward L. Affolter, President
Brian Biggane, Vice President
Frank Hodorowicz, Secretary
Matthew Duggan
Steven J. Lux
Pamela A. Munizzi
Cecilia Prado

Retirement Board of the PARK EMPLOYEES' ANNUITY AND BENEFIT FUND

55 East Monroe Street
Suite 2720
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Dean J. Niedospial
Executive Director

Jaime L. McCabe
Comptroller

June 30, 2020

To the Retirement Board of the Park Employees' and
Retirement Board Employees' Annuity and Benefit Fund

Dear Members of the Retirement Board:

The Park Employees' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Fund) presents its Comprehensive Annual Financial Report (CAFR) for the year ended December 31, 2019. The accuracy of the information contained in the report, including all disclosures, is the sole responsibility of the Fund. The intent of the CAFR is to present fairly the financial condition of the Fund and its related results of operations. The statements and disclosures contained in the CAFR are necessary to assist the Fund's participants, taxpayers and other interested parties in fully understanding the Fund's financial condition. Readers of the CAFR are directed to review the Management Discussion and Analysis (MD&A) narrative of the Financial Section for important overview and analysis.

Fund Background

The Fund is a single employer, defined benefit plan covering the eligible public employees of the Chicago Park District. The Fund was created by an act of the Legislature of the State of Illinois, approved June 21, 1919 and effective July 1, 1919, covering the three major park systems of Chicago. With the statutory consolidation of the separate park districts of Chicago on May 1, 1934, the Chicago Park District was created authorizing the Fund to cover its employees. The Fund is administered in accordance with Chapter 40 of the Illinois Compiled Statutes, Act 5, Articles 1 and 12.

Responsibilities of the Board of Trustees

The Board of Trustees is composed of seven members. Four members are elected by the active participants for four-year terms and the Chicago Park District Board of Commissioners appoints three members for three-year terms. Elected members' terms are staggered so that one member is elected each year. All Trustees serve the Fund without compensation. The Board of Trustees elects a President, Vice President and Secretary from within its ranks at its annual meeting in July. These elected office holders each have a prescribed set of duties. The Board of Trustees has various duties and responsibilities which include: invest funds in accordance with state law and its internal investment policy; approve the appointments of all necessary consultants and advisors; develop and approve all rules, regulations, and policies governing the operation of the Fund; review and approve all applications for disability, annuities, and other benefits; and monitor the financial and operational activities of the Fund. The day-to-day operations of the Fund are the responsibility of the Executive Director.

Overview

At December 31, 2019, total Fund membership, including active, inactive, disability, retired members and beneficiaries is 10,878. The Fund's fiduciary net position increased by \$12.3 million during 2019 resulting in a net position restricted for pension benefits of \$354.6 million. The additions to the Fund, which include employer and employee contributions and net investment income, totaled \$92.4 million. During 2019, the Chicago Park District contributed the required tax levy contribution equal to 1.1 times the total employee contributions received two years prior. The total Fund deductions for 2019 were \$80.1 million, which is more in comparison to the total deductions from prior year. Fund deductions include annuity payments, disability and death benefits, refund of employee contributions, and administrative expenses. For a full

INTRODUCTION

Overview (Continued)

understanding of the Fund's financial condition, we encourage the reader to review the Financial Section as well as the Actuarial Section of this report.

Accounting Method and Internal Controls

The CAFR was prepared to conform with the principles of governmental accounting and reporting as pronounced by the Governmental Accounting Standards Board (GASB) and the American Institute of Certified Public Accountants (AICPA). In recording assets and liabilities, revenues and expenses, the accrual basis of accounting is used. All revenues including contributions are recognized when earned and expenses are recorded when incurred.

The Fund employs a system of internal controls to adequately safeguard its assets and assure the reliability of its financial records which includes the financial statements, supporting schedules and statistical tables. The internal control structure is designed to provide reasonable, but not absolute assurance that these objectives are met. The concept of reasonable assurance recognizes that the cost of control should not exceed the benefits likely to be derived, and that the valuation costs and benefits require estimates and judgments by management. An evaluation of the internal control structure during the Fund's annual independent audit disclosed no material weaknesses. Management, with the assistance of its outside auditors, continually reviews the system of internal control to insure its adequacy and effectiveness.

Actuarial Status

The Fund's independent actuary, Segal Consulting, conducts an actuarial valuation of the Fund annually. Each actuarial valuation involves a projection of the benefits expected to be paid in the future to all members of the Fund. The projection is based on the characteristics of members at the valuation date, the benefit provisions in effect on that date, and assumptions of future events and conditions. Segal Consulting also conducts an actuarial experience review every five years. These studies serve as the basis for recommended changes in actuarial assumptions and methods adopted by the Fund.

The funded ratio is the Fund's actuarial value of assets divided by the Fund's actuarial accrued liability. At December 31, 2019, the actuarial value of assets is \$349,960,428 and the actuarial accrued liability is \$1,170,602,980. The Fund's funded ratio at December 31, 2019 is 29.9% compared to 32.1% for the year ended December 31, 2018. The unfunded actuarial accrued liability at December 31, 2019 amounted to \$820,642,552. Since Public Act 098-0622 was found unconstitutional by the courts, the Fund's actuarial accrued liability increased during the current year, which resulted in a decrease in the Fund's funded ratio. The calculations of these figures are discussed further within the note disclosures of the Financial Section and within the Actuarial Section of this report.

Investment Policy and Performance

The Fund's investment policy was developed to insure the long-term financing of its funding requirements. Utilizing the services of Marquette Associates, Inc., the Trustees review the investment policy on an on-going basis making amendments as needed. The Fund's current investment policy, which details investment authority, asset allocation, diversification, liquidity, performance measurement, and objectives, is provided in the Investment Section of this report. The policy is designed to obtain the highest expected return on investments consistent with the level of risk for a public pension fund with the funded status described above.

As of December 31, 2019, the fair value of investments was \$334,338,923, which compares to \$323,404,925 as of December 31, 2018. As of December 31, 2019, the Fund's annual investment rate of return was 17.0% compared to -5.1% for December 31, 2018. The Fund's 17.0% rate of return outperformed its performance benchmark by approximately 40 basis points and underperformed the peer median by approximately 100 basis points. A more enhanced discussion about the Fund's performance history can be found in the Investment Section of this report.

Technology

The Fund is constantly reviewing and upgrading its information systems. The Fund recently launched a new website that is mobile compatible, allows for easy navigation and improves overall security of the website. The website allows visitors to access Board meeting minutes, Comprehensive Annual Financial Reports, investment information, benefit forms, as well as keeping visitors apprised of the latest Pension Fund news. As part of the Fund's disaster readiness plan, all user workstations have been upgraded with new laptops and dual monitors giving the Fund the ability to continue normal operations remotely

INTRODUCTION

Technology (Continued)

in the event of a crisis. The Fund has also migrated to Microsoft's Office 365 platform to further enhance email and connectivity capabilities. Any remaining Windows 7 machines have been upgraded to Windows 10 in order to stay current with security updates.

Supplemental Employer Contributions

In 2019, in addition to the contributions required by 40 ILCS 5/12-149, the employer made a supplemental contribution of \$13.0 million to the Fund, for total employer contributions of \$27.7 million. In 2018, in addition to the contributions required by 40 ILCS 5/12-149, the employer made a supplemental contribution of \$14.4 million to the Fund, for total employer contributions of \$27.6 million. For 2020, in addition to the contributions required by 40 ILCS 5/12-149, the employer has budgeted a supplemental contribution of \$20.6 million to the Fund, for total employer contributions of \$33.8 million.

GFOA Award

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Park Employees' and Retirement Board Employees' Annuity and Benefit Fund for its comprehensive annual financial report for the year ended December 31, 2018. In order to be awarded a Certificate of Achievement, a public pension fund must publish an easily readable and efficiently organized comprehensive annual financial report. This 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.

Governmental Accounting Standards Board

The Fund is currently in full compliance with all pronouncements from the Governmental Accounting Standards Board.

Retirement Board

The annual election for an employee representative to the Retirement Board was to be held on Friday, June 26, 2020. Due to the COVID-19 crisis, the Fund's annual election for Trustee has been moved to Friday, July 24, 2020. Election results will be posted on the Fund's website.

Acknowledgments

All the statistical and financial information compiled and presented in this CAFR is due to the combined efforts of the administrative staff of the Fund under the direction of the Executive Director, Dean J. Niedospial, and the Comptroller, Jaime L. McCabe. Their efforts are hereby acknowledged with thanks and appreciation.

On behalf of the Retirement Board,



Edward L. Affolter, President

**PARK EMPLOYEES' ANNUITY AND BENEFIT FUND
MEMBERS**

as of December 31, 2019

Elected by the Employees

Brian Biggane
Term expires June 30, 2020

Edward L. Affolter
Term expires June 30, 2021

Matthew Duggan
Term expires June 30, 2022

Frank Hodorowicz
Term expires June 30, 2023

Appointed by the Chicago Park District Board of Commissioners

Steven J. Lux
Term expires June 30, 2023

Pamela A. Munizzi
Term expires June 30, 2021

Cecilia Prado
Term expires June 30, 2021

OFFICERS

Edward L. Affolter, President

Brian Biggane, Vice President

Frank Hodorowicz, Secretary

ADMINISTRATIVE STAFF

Dean J. Niedospial, Executive Director

Jaime L. McCabe, Comptroller

CONSULTANTS

Jacobs, Burns, Orlove & Hernandez, Attorney

Baker Tilly, LLP, Auditor

The Segal Company, Consulting Actuary

Marquette Associates, Inc., Investment Consultant

CUSTODIAN

The Northern Trust Company of Chicago

INVESTMENT ADVISORS

Ariel Investments - *Chicago*

Ativo Capital – *Chicago*

Chicago Equity Partners - *Chicago*

Denali Advisors – *San Diego*

Great Lakes Advisors, LLC - *Chicago*

HarbourVest Partners, LLC – *Boston*

Industry Funds Managements (IFM) – *New York*

LM Capital Group, LLC – *San Diego*

MacKay Shields – LLC – *New York*

Mesirow Financial Capital Partners – *Chicago*

GoldPoint Partners, LLC – *New York*

Northern Trust Asset Management - *Chicago*

Parametric – *Washington*

PineBridge Investments – *New York*

Principal Global Investors – *Des Moines*

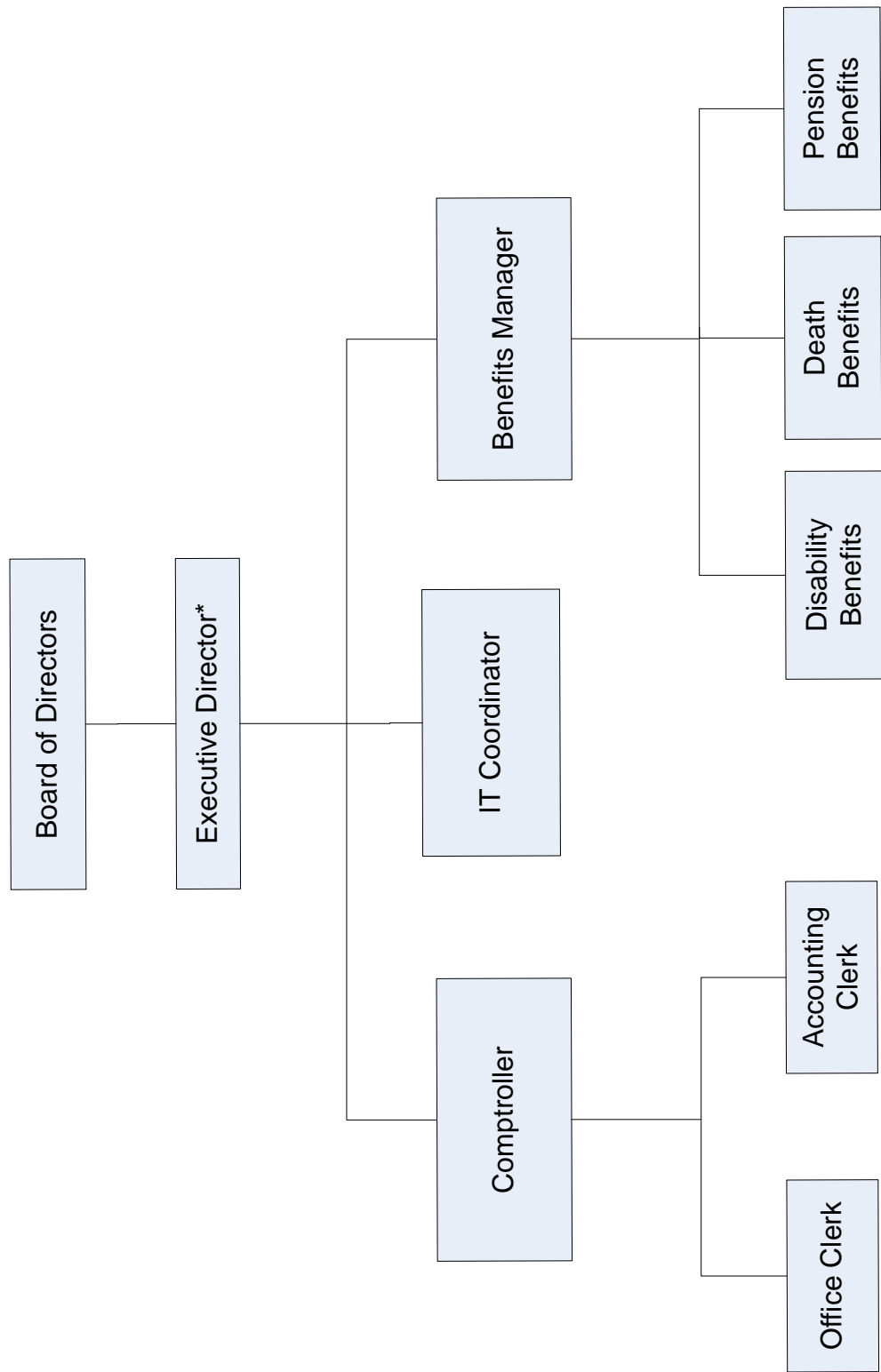
UBS Realty Investors – LLC – *Hartford*

ULLICO Investment Company – *Washington D.C.*

William Blair & Company - *Chicago*

PARK EMPLOYEES’ AND RETIREMENT BOARD EMPLOYEES’
ANNUITY AND BENEFIT FUND

ORGANIZATION CHART



*The Executive Director is responsible for the handling of all investment matters. The Fund does not internally manage any investments. For a listing of the Fund's investment managers and associated investment fees, see page 44. For a listing of the Fund's brokers and associated commissions, see page 52.

Independent Auditor's Report

The Retirement Board
Park Employees' and Retirement Board Employees'
Annuity and Benefit Fund of Chicago
Chicago, Illinois

Report on the Financial Statements

We have audited the accompanying statements of fiduciary net position of the Park Employees' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (the "Fund"), a component unit of the Chicago Park District, as of December 31, 2019, the statement of changes in fiduciary net position for the year then ended, 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

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 audit. We conducted our audit 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 auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Fund'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 Fund's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Fund, as of December 31, 2019 and the changes in the fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Prior Period Financial Statements

The financial statements of the Fund, as of and for the year ended December 31, 2018, were audited by other auditors whose report dated June 3, 2019, expressed an unmodified opinion on those statements.

Independent Auditor's Report (Continued)

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the 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 inquires of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit for the year ended December 31, 2019 was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Fund's basic financial statements. The supplementary information for the year ended December 31, 2019 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 is the responsibility of management and was derived from relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements for the year ended December 31, 2019, 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 for the year ended December 31, 2019.

The basic financial statements of the Fund as of and for the year ended December 31, 2018 were audited by other auditors whose report dated June 3, 2019, expressed an unmodified opinion on the basic financial statements. The report of the other auditors, dated June 3, 2019, stated that the supplementary information for the year ended December 31, 2018 was subjected to the auditing procedures applied in the audit of the 2018 basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare those financial statements or to those financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America and, in their opinion, were fairly stated in all material respects in relation to the basic financial statements as a whole for the year ended December 31, 2018.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Fund's basic financial statements. The introductory section, investment section, actuarial section, and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.



Chicago, Illinois
June 23, 2020

Management's Discussion and Analysis

Management Discussion and Analysis for the Year Ended December 31, 2019

The Management Discussion and Analysis (MD&A) of the Park Employees' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (Fund) financial performance provides an overview and analysis of the Fund's financial activities for the years ended December 31, 2019 and 2018. Please read the MD&A in conjunction with the basic financial statements and the accompanying note disclosures to have a better understanding of the financial condition and performance of the Fund. Information provided for the year ended December 31, 2017 is presented for comparative purposes only.

Using this Report

The Management Discussion and Analysis introduces the Fund's basic financial statements. The basic financial statements include the Statements of Fiduciary Net Position and the Statements of Changes in Fiduciary Net Position, which are prepared on an accrual basis of accounting in accordance with Government Accounting Standards Board (GASB) pronouncements and reflect the Fund's overall financial condition.

The Statements of Fiduciary Net Position reports the Fund's assets at fair value and liabilities as amounts owed as of the statement date, resulting in the net position restricted for pension benefits.

The Statements of Changes in Fiduciary Net Position illustrate the additions and deductions made to the Fund during the statement date. These additions include employee and employer contributions, as well as net investment income. The deductions consist of benefit payments, refunds of contributions and administrative and general expenses. The net result indicates an increase or decrease in Fund net position restricted for pension benefits.

The accompanying notes are an integral part of the financial statements. They provide information essential to achieve full understanding of the Fund's financial statements.

The required supplementary information, presented following the notes to the financial statements, is required by GASB. These schedules offer the reader additional details, which may be useful in evaluating the financial condition and performance of the Fund. The schedules include the Schedule of Changes in Employer's Net Pension Liability, the Schedule of Employer Contributions, the Schedule of Investment Returns, as well as related disclosures. Other supplementary information consists of schedules of Tax Levies Receivable, Administrative and General Expenses, Professional Expenses, and Investment Expenses.

Financial Highlights

- a) The Fund's fiduciary net position increased during the year by \$12.3 million or 3.6% compared to a decrease of \$55.4 million or -13.9% for the year ended December 31, 2018.
- b) The Fund's annual investment return of 17.0% outperformed the portfolio benchmark return of 16.6%.
- c) The Fund's three-year rate of return of 8.3% underperformed the portfolio benchmark return of 8.9%.
- d) The Fund's five-year rate of return of 7.0% was in line with the portfolio benchmark return of 7.0%.
- e) The Fund's ten-year rate of return of 8.6% outperformed the portfolio benchmark return of 7.9%.
- f) For the year ended December 31, 2019, the additions to the Fund's fiduciary net position of \$92.4 million is \$69.7 million more than the year ended December 31, 2018 additions.
- g) For the year ended December 31, 2019, the deductions to the Fund's fiduciary net position of \$80.1 million is \$2.1 million more when compared to the deductions for the year ended December 31, 2018.
- h) The Fund's actuarially computed funded ratio is 29.9% at December 31, 2019, which is 2.2% less than at December 31, 2018.

See independent auditors' report.

Management's Discussion and Analysis (Continued)

Net Position Restricted for Pension Benefits

The Fund's net position restricted for pension benefits at December 31, 2019 is \$354,556,288. This is \$12,300,415 more than the December 31, 2018 net position restricted for pension benefits of \$342,255,873. This compares to a decrease of \$55,392,885 for the year ended December 31, 2018. The tax multipliers for 2019 and 2018 were 1.1 times the amount of employee contributions from two years prior. In the previous year, on March 1, 2018, Public Act 098-0622 was ruled unconstitutional by the courts. Pursuant to the court order, the 2018 tax levy reverted to a tax multiplier of 1.1 times the amount of employee contributions, which resulted in a large decrease in receivables in 2018. The tax multiplier in 2017 was 1.7 times the amount of employee contributions from two years prior. The Fund's investment portfolio increases and decreases from year to year. This fluctuation is directly related to the strength of the financial markets at the financial statement date. The Fund is also still experiencing a cash flow shortage and continues to liquidate portfolio assets to supplement benefit payments made. The following tables are comparative summaries of fiduciary net position restricted for pension benefits:

Statements of Fiduciary Net Position – Current Year

	<u>December 31, 2019</u>	<u>December 31, 2018</u>	<u>Increase (Decrease)</u>
ASSETS			
Receivables and other current assets	\$ 21,293,351	\$ 21,269,050	\$ 24,301
Property and equipment	145,461	138,555	6,906
Investments, at fair value	334,338,923	323,404,925	10,933,998
Invested securities lending collateral	<u>19,769,592</u>	<u>24,113,674</u>	<u>(4,344,082)</u>
Total assets	<u>\$375,547,327</u>	<u>\$368,926,204</u>	<u>\$ 6,621,123</u>
LIABILITIES			
Accrued expense and other liabilities	\$ 1,221,447	\$ 2,556,657	\$ (1,335,210)
Securities lending collateral	<u>19,769,592</u>	<u>24,113,674</u>	<u>(4,344,082)</u>
Total liabilities	<u>\$ 20,991,039</u>	<u>\$ 26,670,331</u>	<u>\$ (5,679,292)</u>
Fiduciary net position restricted for pension benefits	<u>\$354,556,288</u>	<u>\$342,255,873</u>	<u>\$ 12,300,415</u>

Statements of Fiduciary Net Position – Prior Period

	<u>December 31, 2018</u>	<u>December 31, 2017</u>	<u>Increase (Decrease)</u>
ASSETS			
Receivables and other current assets	\$ 21,269,050	\$ 28,121,222	\$ (6,852,172)
Property and equipment	138,555	110,539	28,016
Investments, at fair value	323,404,925	376,303,293	(52,898,368)
Invested securities lending collateral	<u>24,113,674</u>	<u>33,992,926</u>	<u>(9,879,252)</u>
Total assets	<u>\$368,926,204</u>	<u>\$438,527,980</u>	<u>\$(69,601,776)</u>
LIABILITIES			
Accrued expense and other liabilities	\$ 2,556,657	\$ 6,886,296	\$ (4,329,639)
Securities lending collateral	<u>24,113,674</u>	<u>33,992,926</u>	<u>(9,879,252)</u>
Total liabilities	<u>\$ 26,670,331</u>	<u>\$ 40,879,222</u>	<u>\$(14,208,891)</u>
Fiduciary net position restricted for pension benefits	<u>\$342,255,873</u>	<u>\$397,648,758</u>	<u>\$ (55,392,885)</u>

See independent auditors' report.

Management's Discussion and Analysis (Continued)

Changes in Fiduciary Net Position

The Fund's total additions during the year ended December 31, 2019 increased by \$69,744,751 as compared to a decrease of \$63,135,025 for the year ended December 31, 2018. The Fund recorded a net investment gain during the year of \$52,032,781 as compared to net investment loss of \$17,128,885 in 2018 and a net investment gain of \$51,174,093 in 2017. The large increase is due to outstanding investment returns primarily in the international and U.S. equity portfolios. Additions from employer contributions increased from \$27,638,402 in 2018 to \$27,682,089 in 2019. Pursuant to Public Act 098-0622 being ruled unconstitutional, the tax levy multiplier for 2018 was decreased from 1.7 times the employee contributions from two years prior to 1.1 times the employee contributions from two years prior. In 2019 and 2018, the Fund received a portion of PPRT (personal property replacement taxes) revenues collected in addition to the tax levy from the employer of approximately \$13.0 million and \$14.4 million, respectively. In 2017, the Fund did not receive any supplemental contributions from the employer. The employee contributions increased slightly during the year from \$12,125,457 in 2018 to \$12,664,855 in 2019. Effective March 7, 2018, the employee contributions decreased from 10% to 9% in accordance with the court order. Consequently, employee contributions decreased to \$12,125,457 in 2018 from \$13,675,292 in 2017. The Fund also experienced a decrease in active members during 2018 of about 350 members.

The number of retirees has not fluctuated much over the recent years. The Fund's total benefit payments in 2019 increased in comparison to 2018 mainly due to annual increases. On March 1, 2018, the court issued an opinion finding Public Act 098-0622 unconstitutional. As a result, the additional 1% in employee contributions paid to the Fund since January 1, 2015, were refunded to employees with pre-judgment interest in July 2018. These amounts were accrued for in 2017. The Fund refunded \$3.9 million in employee contributions plus pre-judgment interest. The following tables are comparative summaries of changes in fiduciary net position restricted for pension benefits:

Statements of Changes in Fiduciary Net Position – Current Year

	<u>December 31, 2019</u>	<u>December 31, 2018</u>	<u>Increase (Decrease)</u>
ADDITIONS			
Employer contributions	\$ 27,682,089	\$ 27,638,402	\$ 43,687
Employee contributions	12,664,855	12,125,457	539,398
Net investment (loss) income (includes security lending activities)	<u>52,032,781</u>	<u>(17,128,885)</u>	<u>69,161,666</u>
Total additions	<u>\$ 92,379,725</u>	<u>\$ 22,634,974</u>	<u>\$ 69,744,751</u>
DEDUCTIONS			
Retirement benefits	\$ 63,644,273	\$ 61,178,336	\$ 2,465,937
Spousal benefits	12,187,742	12,108,228	79,514
Child benefits	18,450	16,900	1,550
Disability benefits	387,046	268,389	118,657
Death benefits	<u>228,500</u>	<u>229,000</u>	<u>(500)</u>
Total benefits	76,466,011	73,800,853	2,665,158
Refund of contributions	2,084,438	2,725,967	(641,529)
Administrative and general expenses	<u>1,528,861</u>	<u>1,501,039</u>	<u>27,822</u>
Total deductions	<u>\$ 80,079,310</u>	<u>\$ 78,027,859</u>	<u>\$ 2,051,451</u>
Net increase (decrease)	12,300,415	(55,392,885)	67,693,300
Beginning of year net position	<u>342,255,873</u>	<u>397,648,758</u>	<u>(55,392,885)</u>
End of year net position	<u>\$354,556,288</u>	<u>\$342,255,873</u>	<u>\$ 12,300,415</u>

See independent auditors' report.

Management's Discussion and Analysis (Continued)

Changes in Fiduciary Net Position (Continued)

Statements of Changes in Fiduciary Net Position – Prior Period

	<u>December 31, 2018</u>	<u>December 31, 2017</u>	<u>Increase (Decrease)</u>
ADDITIONS			
Employer contributions	\$ 27,638,402	\$ 20,920,614	\$ 6,717,788
Employee contributions	12,125,457	13,675,292	(1,549,835)
Net investment (loss) income (includes security lending activities)	<u>(17,128,885)</u>	<u>51,174,093</u>	<u>(68,302,978)</u>
Total additions	<u>\$ 22,634,974</u>	<u>\$ 85,769,999</u>	<u>\$ (63,135,025)</u>
DEDUCTIONS			
Retirement benefits	\$ 61,178,336	\$ 59,488,303	\$ 1,690,033
Spousal benefits	12,108,228	12,252,673	(144,445)
Child benefits	16,900	15,900	1,000
Disability benefits	268,389	190,464	77,925
Death benefits	<u>229,000</u>	<u>305,000</u>	<u>(76,000)</u>
Total benefits	73,800,853	72,252,340	1,548,513
Refund of contributions	2,725,967	2,025,805	700,162
Refund of excess contributions	-	3,859,882	(3,859,882)
Administrative and general expenses	<u>1,501,039</u>	<u>1,682,136</u>	<u>(181,097)</u>
Total deductions	<u>\$ 78,027,859</u>	<u>\$ 79,820,163</u>	<u>\$ (1,792,304)</u>
Net increase (decrease)	(55,392,885)	5,949,836	(61,342,721)
Beginning of year net position	<u>397,648,758</u>	<u>391,698,922</u>	<u>5,949,836</u>
End of year net position	<u>\$342,255,873</u>	<u>\$397,648,758</u>	<u>\$ (55,392,885)</u>

Actuarial Update

The actuarial valuation for the year ended December 31, 2019 includes the changes in actuarial assumptions adopted by the Board in 2018 and projects that the Fund will run out of money by the year 2027, unless new legislation is enacted. The valuations for 2019 and 2018 also reflect GASB 67 requirements that improve financial reporting for local governmental pension plans. The notes to the financial statements include information about the individual components of the Fund's net pension liability. The net pension liability is equal to the difference between the total pension liability and the Fund's fiduciary net position. The Fund's required supplementary information provides the reader with a more enhanced look on how the total pension liability, the fiduciary net position and net pension liability is measured.

The Fund's actuarially computed funded ratio is 29.9% at December 31, 2019, which is 2.2% less than at December 31, 2018. The funded ratio is based on the actuarial value of assets over the actuarial accrued liability.

See independent auditors' report.

Management's Discussion and Analysis (Continued)

Investment Performance

The Fund's annual investment return for the year ended December 31, 2019 was 17.0%, which is higher than the -5.1% return reported for the year ended December 31, 2018 and higher than the 14.2% return for the year ended December 31, 2017. In 2019, every assets class in the investment portfolio generated positive returns for the year. The Fund's U.S. equity portfolio, which returned 28.8% and International equity portfolio, which returned 24.2% were the primary drivers of the Fund's return in 2019. Performance in 2019 was also helped by strong returns in the Fund's hedge fund portfolio, which returned 16.3%, the Fund's infrastructure portfolio, which returned 14.1%, and the Fund's fixed income portfolio, which returned 7.7%. The Fund's 17.0% return for 2019 outperformed its performance benchmark by approximately 40 basis points and underperformed the peer median by approximately 100 basis points. The Fund's outperformance vs. its' benchmark in 2019 was driven by active management outperformance within the hedge fund and infrastructure portfolios. The Fund's portfolio performance for the past five years ranked in the upper 47th percentile as measured against its peers. Over the trailing three-year period, the Fund underperformed its' performance benchmark by approximately 60 basis points. Over the trailing five-year period, the Fund performed in line with the performance benchmark. Over the trailing ten-year period, the Fund returned 8.6%, outperforming the performance benchmark by 70 basis points and ranked in the upper 28th percentile as measured against its peers, and outperforming the 7.5% actuarial rate of return.

Supplemental Employer Contributions

In 2019, in addition to the contributions required by 40 ILCS 5/12-149, the employer made a supplemental contribution of \$13.0 million to the Fund, for total employer contributions of \$27.7 million. In 2018, in addition to the contributions required by 40 ILCS 5/12-149, the employer made a supplemental contribution of \$14.4 million to the Fund, for total employer contributions of \$27.6 million. For 2020, in addition to the contributions required by 40 ILCS 5/12-149, the employer has budgeted a supplemental contribution of \$20.6 million to the Fund, for total employer contributions of \$33.8 million.

Contacting the Fund's Financial Management

This report is intended to provide a general overview of the Park Employees' and Retirement Board Employees' Annuity and Benefit Fund of Chicago for its employees and other interested parties. If you have questions, requests, or need additional information, please visit the Fund's website at www.chicagoparkpension.org or contact the Fund at 55 East Monroe Street, Suite 2720, Chicago, Illinois 60603.

See independent auditors' report.

Financial Statements

Statement of Fiduciary Net Position

As of December 31, 2019 and 2018

Assets	2019	2018
Receivables		
Contributions from employer	\$ 14,572,731	\$ 14,464,069
Employee contributions	633,376	595,560
Workers' compensation offset of duty disability benefits, net of allowance for loss of \$16,615 in 2019 and 2018	69,872	75,844
Due from broker	109,379	321,604
Accrued investment income	360,215	411,061
Miscellaneous receivables	<u>241,876</u>	<u>258,954</u>
Total receivables	<u>15,987,449</u>	<u>16,127,092</u>
Investments, at fair value		
Common stocks	43,787,794	45,332,504
Fixed income	59,247,177	61,043,992
Collective investment funds	81,295,724	72,315,985
Mutual funds	19,208,421	15,420,085
Hedged equity	24,807,129	24,437,510
International equity	21,776,682	18,093,650
Risk parity	-	1,348,182
Private equity	18,031,007	19,232,200
Real estate	37,047,140	37,225,201
Infrastructure	24,353,479	22,774,008
Short-term investments	<u>4,784,370</u>	<u>6,181,608</u>
Total investments, at fair value	<u>334,338,923</u>	<u>323,404,925</u>
Invested securities lending collateral	19,769,592	24,113,674
Property and equipment – net	145,461	138,555
Prepaid annuity benefits	5,252,036	5,061,599
Other prepaid expenses	<u>53,866</u>	<u>80,359</u>
	<u>5,305,902</u>	<u>5,141,958</u>
Total assets	<u>\$ 375,547,327</u>	<u>\$ 368,926,204</u>

See Notes to Financial Statements

Financial Statements

Statement of Fiduciary Net Position

December 31, 2019 and 2018

	<u>2019</u>	<u>2018</u>
Liabilities		
Accounts Payable	\$ 320,002	\$ 396,639
Accrued benefits payable	568,215	588,867
Accrued payroll liabilities	28,271	21,726
Unamortized rent abatement	47,165	55,136
Securities lending collateral	19,769,592	24,113,674
Due to broker	<u>257,794</u>	<u>1,494,289</u>
Total liabilities	<u>20,991,039</u>	<u>26,670,331</u>
 Net Position		
Net position restricted for pension benefits	<u>\$ 354,556,288</u>	<u>\$ 342,255,873</u>

See Notes to Financial Statements

Financial Statements

Statement of Changes in Fiduciary Net Position

For the Years Ended December 31, 2019 and 2018

	2019	2018
Additions		
Contributions		
Employer contributions	\$ 27,682,089	\$ 27,638,402
Employee contributions	<u>12,664,855</u>	<u>12,125,457</u>
Total contributions	<u>40,346,944</u>	<u>39,763,859</u>
Investment income		
Net appreciation (depreciation) in fair value of investments	46,929,814	(27,559,554)
Interest	1,937,813	2,203,951
Dividends	906,148	925,828
Partnership and real estate income	<u>3,941,161</u>	<u>9,064,682</u>
	53,714,936	(15,365,093)
Less investment expenses	<u>1,732,391</u>	<u>1,831,719</u>
Net income (loss) from investing activities	<u>51,982,545</u>	<u>(17,196,812)</u>
Security lending activities		
Securities lending income	723,855	721,122
Borrower rebates	(631,714)	(596,824)
Bank fees	<u>(42,030)</u>	<u>(56,538)</u>
Net Income from securities lending activities	<u>50,111</u>	<u>67,760</u>
Other income	<u>125</u>	<u>167</u>
Total additions	<u>\$ 92,379,725</u>	<u>\$ 22,634,974</u>

See Notes to Financial Statements

Financial Statements

Statement of Changes in Fiduciary Net Position

For the Years Ended December 31, 2019 and 2018

	2019	2018
Deductions		
Benefits		
Annuity payments	\$ 75,850,465	\$ 73,303,464
Disability and death benefits	<u>615,546</u>	<u>497,389</u>
Total benefits	<u>76,466,011</u>	<u>73,800,853</u>
Refunds of contributions	2,084,438	2,725,967
Administrative and general expenses	<u>1,528,861</u>	<u>1,501,039</u>
Total deductions	<u>80,079,310</u>	<u>78,027,859</u>
Net increase (decrease)	12,300,415	(55,392,885)
Net position restricted for pension benefits		
Beginning of year	<u>342,255,873</u>	<u>397,648,758</u>
End of year	<u>\$ 354,556,288</u>	<u>\$ 342,255,873</u>

See Notes to Financial Statements

Notes to Financial Statements

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Park Employees' and Retirement Board Employees' Annuity and Benefit Fund of Chicago (the "Fund") is the administrator of a single employer defined benefit plan (PERS) established by the State of Illinois to provide annuities and benefits for substantially all employees of the Chicago Park District.

The accounting policies of the Fund conform to accounting principles generally accepted in the United States of America as applicable to governmental units. The accepted standard-setting body for establishing governmental accounting and financial reporting principles is the Governmental Accounting Standards Board (GASB).

A. Reporting Entity

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

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

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

B. Fund Accounting

The Fund uses a fund to report on its fiduciary net position and the changes in its fiduciary net position. Fund accounting is designed to demonstrate legal compliance and to aid financial management by segregating transactions related to certain government functions or activities. A fund is a separate accounting entity with a self-balancing set of accounts. The Fund is classified in this report in the fiduciary category.

C. Measurement Focus and Basis of Accounting

The accounting and financial reporting treatment applied to a fund is determined by its measurement focus. The Fund is accounted for on a flow of economic resources measurement focus. With this measurement focus, all assets, deferred outflows of resources, liabilities and deferred inflows of resources associated with the operation of these funds are included on the balance sheet.

The Pension Fund is accounted for using the accrual basis of accounting. Consequently, its additions are recognized when they are earned and its deductions are recognized when they are incurred. The financial statements are prepared using the accrual basis of accounting.

Notes to Financial Statements (Continued)

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

D. Investments

Income on all investments is recognized on the accrual basis. Gains and losses on sales and exchanges of investments are recognized on the transaction date of such sale or exchange. Dividend income is recognized based on the dividends declared.

Investments are reported at fair value. Short-term investments are reported at cost, which approximates fair value. Fair values for bonds, stocks and mutual funds are determined by quoted market prices. Investments for which market quotations are not readily available are valued at their fair values as determined by the bank administrator under the direction of the Board of Trustees, with the assistance of a valuation service.

E. Prepaid Items

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items in both government-wide and fund financial statements using the consumption method.

E. Capital Assets

Capital assets, which include property and equipment are defined by the government as the cost of any major outlays for additions and improvements. Depreciation has been provided using the straight-line method over periods ranging from 3-7 years. Leasehold improvements are amortized using the straight-line method over the remaining term of the lease.

F. Use of Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Actual results may differ from those estimates.

G. Risk and Uncertainties

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

H. Administrative Expenses

Administrative expenses are budgeted and approved by the Fund's Board of Trustees. Funding for these expenses is included in the employer contributions as determined by the annual actuarial valuation.

Notes to Financial Statements (Continued)

2. PLAN DESCRIPTION

A. Plan Administration

The Fund is a defined benefit single-employer pension plan. Although this is a single-employer pension plan, the defined benefits and employee and minimum employer contributions are governed by Illinois Compiled Statutes (40 ILCS 5/12-1) and may be amended only by the Illinois legislature.

The Plan is governed by a seven-member board. Three members are appointed by the park commissioner's and four members of the board are elected from among the employees.

B. Plan Membership

At December 31, 2019 and 2018, membership of the Fund was as follows:

	<u>2019</u>	<u>2018</u>
Retirees and beneficiaries currently receiving benefits	2,843	2,854
Vested terminated members entitled to benefits	147	145
Current employees	3,132	3,187

C. Benefits Provided

As provided for in the Illinois Compiled Statutes, the Fund provides retirement benefits as well as death and disability benefits to employees grouped into two tiers. Tier 1 is for employees that contributed prior to January 1, 2011 and Tier 2 is for employees that contributed after that date. The following is a summary of the Fund as provided for in Illinois Compiled Statutes.

Tier 1 - Covered employees attaining the age of 50 or more with ten or more years of creditable service are entitled to receive a service retirement pension. The retirement pension is based upon the average of the four highest consecutive years of salary within the last ten years of service. If the employee retires prior to the attainment of age 60, the rate associated with the service is reduced by one-quarter percent for each full month the employee is under age 60. There is no reduction if the participant has 30 years of service. Employees with four years of service at age 60 may receive a retirement benefit.

Tier 2 - Covered employees attaining the age of 62 or more with ten or more years of creditable service are entitled to receive discounted service retirement pension. Employees attaining the age 67 or more, with at least 10 years of service are entitled to receive a non-discounted annuity benefit. The annuity is discounted one-half percent for each full month the employee is under age 67. The retirement pension is based upon the average of the eight highest consecutive years of salary within the last ten years of service prior to retirement. Pensionable salary is limited to \$114,952 in 2019 and \$113,645 in 2018.

Post-Retirement Increase

Tier 1: An employee annuitant under Tier 1 who retires at age 50 or older with at least 30 years of service is eligible to receive an increase of three percent, based on the annuity granted at retirement, payable following the first 12 months of benefits on either the next January or July. If the employee annuitant retires before the age of 60 with less than 30 years of service, then the increases begin on the January or July following the later of the attainment of age 60 or 12 months of benefits received.

Notes to Financial Statements (Continued)

2. PLAN DESCRIPTION (continued)

C. Benefits Provided (continued)

Tier 2: An employee annuitant under Tier 2 that is eligible to receive an increase in the annuity benefit, shall receive an annual increase equal to the lesser of three percent or one-half the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12 month period ending with the September preceding the increase. The increase is based on the amount of the originally granted benefit (simple). This increase begins after age 67 on the first January following one full year of benefits received.

Surviving Spouse Pension

Tier 1: Upon the death of an employee annuitant under Tier 1, the surviving spouse, meeting certain eligibility requirements, is entitled to a spousal annuity. The surviving spouse is entitled to the lesser of a money purchase calculation, 50% of the highest salary or 75% of the granted annuity. With 20 years of service, the entitlement becomes the higher of the eligible money purchase calculation or 50% of retiree's annuity at the time of death. The surviving spouse is also eligible to receive an increase of three percent compounded, on the January following one full year after the date of death of the employee or annuitant.

Tier 2: The annuity payable to the surviving spouse of an employee annuitant under Tier 2 is equal to 66 2/3% of the participant's earned retirement annuity at the time of death without reduction due to age. The surviving spouse is also eligible to receive an increase equal to the lesser of three percent or one-half of the annual unadjusted percentage increase in the Consumer Price Index-U (but not less than zero) as measured in the preceding 12 month period ending with the September preceding the increase, on the January following one full year after the date of death of the employee or annuitant.

Child Annuity

Under Tier 1 and Tier 2, unmarried children under the age of 18 of a deceased employee or annuitant having at least two years of service are entitled to a benefit. The child's annuity is an amount equal to \$100 a month when there is a surviving spouse or \$150 when there is no surviving spouse, subject to maximum limitations.

Ordinary Disability Benefit

Under Tier 1 and Tier 2, an employee who becomes disabled as the result of any cause other than an accidental injury incurred while in the performance of an act of duty is entitled to an ordinary disability benefit at the amount equal to 45% of the employee's annual salary at the time of disablement. An employee can receive ordinary disability for a period equal to one fourth of his/her service credits up to a maximum of five years, exclusive of the disability period. Tier 2 participants have salary limitations similar to employee contributions.

Duty Disability Benefit

Under Tier 1 and Tier 2, an employee who becomes disabled as the result of a work related injury incurred while in the performance of an act of duty is entitled to a duty disability benefit in the amount equal to 75% of the employee's annual salary at the time of injury, reduced by any benefits received by the employee under the provisions of the Workers' Compensation Act. Tier 2 participants have salary limitations similar to employee contributions.

Notes to Financial Statements (Continued)

2. PLAN DESCRIPTION (continued)

D. Contributions

Participants are required by Illinois Compiled Statutes (ILCS) to contribute 9.0 percent of their salary to the Fund. If a participant leaves covered employment before the age of 55, accumulated participant contributions are refundable without interest. The District is required by state statute to contribute the remaining amounts necessary to finance the requirements of the Fund on an actuarially funded basis. It is required to levy a tax at a rate not more than an amount equal to the total amount of contributions by the employees to the Fund made in the fiscal year two years prior to the year for which the annual applicable tax is levied, multiplied by a factor of 1.1 annually. The District had no legal obligations to fund pension costs above that allowed by statute. The District's contributions to the Fund were \$27,682,089 and \$27,638,402 for the years ended December 31, 2019 and 2018, respectively.

3. DEPOSITS AND INVESTMENTS

A. Investment Policy

Illinois Compiled Statutes authorize the Fund to make deposits/investments in insured commercial banks, savings and loan institutions, obligations of the U.S. Treasury and U.S. Agencies, corporate and municipal debentures and obligations, insured mortgage notes and loans, mutual funds meeting certain requirements, common and preferred stocks, stock options, real estate, collective investment funds, and private equity partnerships. The Fund allows funds to be invested in any type of security authorized by the Illinois Pension Code.

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

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2019 and 2018 are summarized below in the following table:

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

A. Investment Policy (continued)

Asset Class	2019		2018	
	Target	Long-Term Expected Real Rate of Return	Target	Long-Term Expected Real Rate of Return
Fixed income	20.5%	1.15%	20.5%	1.65%
Domestic equity	28.5%	6.40%	28.5%	6.45%
International equity	18.0%	7.05%	18.0%	6.95%
Emerging market	2.0%	9.00%	2.0%	9.25%
Risk parity	0.0%	3.32%	3.0%	4.55%
Hedge equity	7.0%	3.32%	7.0%	4.55%
Private equity	7.0%	10.40%	7.0%	11.55%
Real assets	17.0%	4.50%	14.0%	4.25%

B. Fair Value of Investments

The Fund's investments are reported at fair value in the accompanying statement of fiduciary net position. The methods used to measure fair value may produce an amount that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Fund believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The Fund categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

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

Following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at December 31, 2019 and 2018.

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

Equity securities and short-term investment securities classified in Level 1 are valued using prices quoted in active markets for those securities.

Debt securities classified in Level 2 or Level 3 are valued using matrix pricing techniques maintained by the various pricing vendors. Matrix pricing is used to value securities based on the securities relationship to a benchmark's quoted price. Equity securities classified in Level 2 are securities with a theoretical price calculated by applying a standardized formula to derive a price from a related security.

Equity securities classified in Level 2 are valued with last trade data having limited trading volume.

Financial Statements

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

B. Fair Value of Investments (continued)

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

The following table summarizes the valuation of the Fund's investments by the fair value hierarchy levels as of December 31, 2019:

Investment Type	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Investments Measured at Fair Value				
Equity securities				
Common stock	\$ 43,787,794	\$ 51,745,614	\$ -	\$ 95,533,408
Common stock - foreign	19,208,421	29,550,110	-	48,758,531
Total equity securities	62,996,215	81,295,724	-	144,291,939
Debt securities				
Government bonds	-	19,208,547	-	19,208,547
Government agencies	-	1,574,019	-	1,574,019
Corporate bonds	-	13,821,245	1,853	13,823,098
Municipal bonds	-	24,915	-	24,915
Government mortgage-backed securities	-	14,050,683	87,425	14,138,108
Commercial mortgage-backed securities	-	9,304,603	86,067	9,390,670
Asset backed securities	-	382,277	27,884	410,161
Non-government backed CMO's	-	74,338	-	74,338
Index linked government bonds	-	603,321	-	603,321
Total debt securities	-	59,043,948	203,229	59,247,177
Short-term investment securities				
Funds-short-term investment	4,784,370	-	-	4,784,370
Total short-term investment securities	4,784,370	-	-	4,784,370
Total investments measured by fair value level	\$ 67,780,585	\$ 140,339,672	\$ 203,229	208,323,486
Investments measured at Net Asset Value (NAV)				
Hedged equity				24,807,129
International equity				21,776,682
Private equity				18,031,007
Real estate				37,047,140
Infrastructure				24,353,479
Total investments measured at NAV				126,015,437
Total investments measured at fair value				\$ 334,338,923
Collateral from securities lending		\$ 19,769,592		\$ 19,769,592

Financial Statements

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

B. Fair Value of Investments (continued)

The following table summarizes the valuation of the Fund's investments by the fair value hierarchy levels as of December 31, 2018:

Investment Type	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Investments Measured at Fair Value				
Equity securities				
Common stock	\$ 45,332,504	\$ 42,340,684	\$ -	\$ 87,673,188
Common stock - foreign	<u>15,420,085</u>	<u>29,975,301</u>	-	<u>45,395,386</u>
Total equity securities	<u>60,752,589</u>	<u>72,315,985</u>	-	<u>133,068,574</u>
Debt securities				
Government bonds	-	15,953,011	-	15,953,011
Government agencies	-	1,370,216	-	1,370,216
Corporate bonds	-	16,820,247	2,307	16,822,554
Government mortgage-backed securities	-	15,780,728	95,751	15,876,479
Commercial mortgage-backed securities	-	9,943,558	-	9,943,558
Asset backed securities	-	234,346	54,967	289,313
Non-government backed CMO's	-	108,325	-	108,325
Index linked government bonds	-	<u>680,536</u>	-	<u>680,536</u>
Total debt securities	-	<u>60,890,967</u>	<u>153,025</u>	<u>61,043,992</u>
Short-term investment securities				
Short-term bills & notes	-	224,887	-	224,887
Funds-short-term investment	<u>5,956,721</u>	-	-	<u>5,956,721</u>
Total short-term investment securities	<u>5,956,721</u>	<u>224,887</u>	-	<u>6,181,608</u>
Total investments measured by fair value level	<u>\$ 66,709,310</u>	<u>\$ 133,431,839</u>	<u>\$ 153,025</u>	<u>200,294,174</u>
Investments measured at Net Asset Value (NAV)				
Hedged equity				24,437,510
International equity				18,093,650
Risk parity				1,348,182
Private equity				19,232,200
Real estate				37,225,201
Infrastructure				<u>22,774,008</u>
Total investments measured at NAV				<u>123,110,751</u>
Total investments measured at fair value				<u>\$ 323,404,925</u>
Collateral from securities lending		<u>\$ 24,113,674</u>		<u>\$ 24,113,674</u>

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

B. Fair Value of Investments (continued)

Investments measured at NAV for fair value are not subject to level classification. The valuation methods for investments measured at the NAV per share (or its equivalent) is presented on the following table:

December 31, 2019				
Investments Measured at Net Asset Value (NAV)	Fair Value	Underfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Hedged equity	\$ 24,807,129	\$ -	Monthly	5 days
International equity	21,776,682	-	Daily/Quarterly	5-30 days
Private equity	18,031,007	11,332,500	n/a	n/a
Real estate	37,047,140	-	Quarterly	60-90 days
Infrastructure	24,353,479	-	Quarterly	90 days

December 31, 2018				
Investments Measured at Net Asset Value (NAV)	Fair Value	Underfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Hedged equity	\$ 24,437,510	\$ -	Monthly	5 days
International equity	18,093,650	-	Daily/Quarterly	5-30 days
Risk parity	1,348,182	-	Daily	1 days
Private equity	19,232,200	13,395,000	n/a	n/a
Real estate	37,225,201	-	Quarterly	60-90 days
Infrastructure	22,774,008	-	Quarterly	90 days

Hedged Equity

The hedged equity investment consists of one open-end long/short equity hedge fund of funds portfolio that primarily invests both long and short in publicly traded US equities.

International Equity

The international equity investment consists of two fund's portfolio that primarily invests both long and short in publicly traded international equities.

Risk Parity

The risk parity investment consists of one open-end fund that primarily invests in global equities, global government bonds and commodities.

Private Equity Partnerships

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

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

B. Fair Value of Investments (continued)

Real Estate

The real estate investments consists of two core open-end estate funds and one value-added open-end real estate fund that primarily invest in U.S. commercial real estate.

Infrastructure

The infrastructure investments consist of two core open-end infrastructure funds that primarily invest in global infrastructure assets.

The Fund shall apply the prudent investor rule in investing for funds under its supervision. The “prudent investor rule” means that in making investments, the fiduciaries shall exercise the judgment and care, under the circumstances then prevailing, that an institutional investor of ordinary prudence, discretion, and intelligence exercises in the management of large investments entrusted to it, with regards to preservation of capital and income and not speculation. The funds belonging to the Fund must be invested exclusively for the benefit of their members and in accordance with the respective Fund’s investment goals and objectives.

C. Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the value of an investment. The Fund does not maintain a policy relative to interest rate risk. The Board of Trustees recognized that its investments are subject to short-term volatility. However, their goal is to maximize total return within prudent risk parameters.

As of December 31, 2019, the Fund’s investments were as follows (expressed in thousands):

Investment Type	Fair Value	Maturity (in Years)			
		Less than 1	1-5	6-10	More than 10
Commercial mortgage backed	\$ 9,391	\$ -	\$ -	\$ 225	\$ 9,166
Corporate bonds	13,823	171	4,943	6,106	2,603
Municipal bonds	25	-	-	-	25
Government agencies	1,574	-	688	886	-
Government bonds	19,209	-	7,711	6,505	4,993
Asset backed securities	410	-	136	139	135
Index linked government bonds	603	-	-	603	-
Government mortgage backed	14,138	-	24	397	13,717
Non-government backed CMO’s	74	-	-	-	74
Total	\$ 59,247	\$ 171	\$ 13,502	\$ 14,861	\$ 30,713

Financial Statements

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

C. Interest Rate Risk (Continued)

As of December 31, 2018, the Fund's investments were as follows (expressed in thousands):

Investment Type	Fair Value	Maturity (in Years)			
		Less than 1	1-5	6-10	More than 10
Commercial mortgage backed	\$ 9,944	\$ -	\$ -	\$ 307	\$ 9,637
Corporate bonds	16,823	1,316	7,891	4,929	2,687
Government agencies	1,370	195	832	343	-
Government bonds	15,953	198	8,823	3,193	3,739
Asset backed securities	289	-	-	99	190
Index linked government bonds	681	-	-	681	-
Government mortgage backed	15,876	-	33	352	15,491
Non-government backed CMO's	108	-	-	-	108
Total	\$ <u>61,044</u>	\$ <u>1,709</u>	\$ <u>17,579</u>	\$ <u>9,904</u>	\$ <u>31,852</u>

Some investments are more sensitive to interest rate changes than others. Variable and floating rate collateralized mortgage obligations (CMOs), asset-backed securities (ABS), interest-only and principal-only securities are examples of investments whose fair values may be highly sensitive to interest rate changes.

D. Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. The Fund's investment policy requires diversification of the investment portfolio to minimize risk of loss resulting from over-concentration in a particular type of security, risk factor, issuer, or maturity.

Investments that represent five percent or more of the Fund's net position (except those issued or guaranteed by the U.S. Government) are separately identified as follows:

	<u>2019</u>	<u>2018</u>
Collective investment funds – common stock		
NTGI QM Collective Daily US Market cap Equity	\$43,096,645	\$35,491,812
NTGI QM Collective Daily All Country World Index	\$22,215,836	\$22,881,641
Hedged Equity - Parametric Defensive Equity Fund	\$24,807,129	\$24,437,510
Mutual Funds – William Blair	\$19,208,421	\$15,420,085*

*Does not represent five percent or more of the Fund's net position.

E. Custodial Credit Risk - Deposits

With respect to deposits, custodial credit risk refers to the risk that, in the event of a bank failure, the government's deposits may not be returned to it. As of December 31, 2019 and 2018, the Fund's bank deposits were covered by FDIC insurance.

Financial Statements

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

F. Custodial Credit Risk - Investments

With respect to investments, custodial credit risk refers to the risk that, in the event of the failure of the counterparty to the investment, the Fund will not be able to recover the value of its investments that are in possession of an outside party. As of December 31, 2019 and 2018, no investments were exposed to custodial credit risk.

G. Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Fund maintains a highly diversified portfolio of debt securities encompassing a wide range of credit ratings. Each fixed income manager is given a specific set of guidelines to invest within, based on the mandate for which it was hired. The guidelines specify which range of credit the manager may invest. These ranges include investment grade and high yield categories.

The Fund's investment policy authorizes investments in any type of security allowed for in Illinois statutes regarding the investment of public funds. The following tables present the Fund's ratings as of December 31, 2019 and 2018 (expressed in thousands).

December 31, 2019

S & P Credit Rating	Fair Value	Comm'l Mortgage Backed	Corp. Bonds	Gov't Agencies	Muni. bonds	Asset Backed	Gov't Mortgage Backed	Non Gov't Backed CMO
AAA	\$ 900	\$ 407	\$ 83	\$ -	\$ -	\$ 410	\$ -	\$ -
AA	1,981	199	641	1,141	-	-	-	-
A	4,582	-	4,557	-	25	-	-	-
BBB	7,750	-	7,750	-	-	-	-	-
BB	315	-	315	-	-	-	-	-
B	389	-	389	-	-	-	-	-
NR	8,947	8,785	88	-	-	-	-	74
US Gov't Agency	14,571	-	-	433	-	-	14,138	-
Totals	\$ 39,435	\$ 9,391	\$ 13,823	\$ 1,574	\$ 25	\$ 410	\$ 14,138	\$ 74

December 31, 2018

S & P Credit Rating	Fair Value	Comm'l Mortgage Backed	Corp. Bonds	Gov't Agencies	Asset Backed	Gov't Mortgage Backed	Non Gov't Backed CMO
AAA	\$ 803	\$ 207	\$ 247	\$ 195	\$ 154	\$ -	\$ -
AA	2,219	-	1,333	778	-	-	108
A	4,594	-	4,508	-	86	-	-
BBB	9,324	-	9,125	199	-	-	-
BB	1,016	-	1,016	-	-	-	-
B	592	-	592	-	-	-	-
NR	9,886	9,637	2	198	49	-	-
US Gov't Agency	15,976	100	-	-	-	15,876	-
Totals	\$ 44,410	\$ 9,944	\$ 16,823	\$ 1,370	\$ 289	\$ 15,876	\$ 108

Notes to Financial Statements (Continued)

3. DEPOSITS AND INVESTMENTS (continued)

H. Foreign Currency Risk

Foreign currency risk is the risk that changes in currency exchange rates will adversely affect the fair value of an investment or a deposit. Forward currency contracts may be used to manage exposure to foreign currencies. The Fund has not adopted a formal policy related to foreign currency risk. At December 31, 2019 and 2018, the Fund had \$48.8 and \$45.4 million, respectively, in foreign investments, all of which was in mutual funds that were held in U.S. dollars. At December 31, 2019 and 2018, the Fund had \$21.8 million and \$18.1 million in foreign investments in two international equity hedge funds all of which were held in U.S. dollars.

I. Rate of Return

For the years ended December 31, 2019 and 2018, the annual money-weighted rate of return on plan investments, net of investment expense, was 17.0% and -5.1%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

4. SECURITIES LENDING

Under the provisions of state statutes, the Fund lends securities (both equity and fixed income) to qualified and Fund approved brokerage firms for collateral that will be returned for the same securities in the future. The Fund's custodian, the Northern Trust Co., manages the securities lending program, which includes the securities of the Fund as well as other lenders, and receives cash, U.S. Treasury securities or letters of credit as collateral. The collateral received cannot be pledged or sold by the Fund unless the borrower defaults. However, the Fund does have the right to close the loan at any time. All security loan agreements are initially collateralized at 102% of the loaned securities. Whenever adjustments are needed to reflect changes in the fair value of the securities loaned, the collateral is adjusted accordingly. Cash collateral is invested in the lending agent's short-term investment pool, which at year end has a weighted average maturity of 80 days. As December 31, 2019 and 2018, the Fund had loaned to borrowers securities with a fair value of \$19,304,111 and \$23,681,541 respectively. As of December 31, 2019, the fair value of the collateral received by the Fund was \$19,769,592 and the collateral invested by the Fund was \$19,773,079. As of December 31, 2018, the fair value of the collateral received by the Fund was \$24,113,674 and the collateral invested by the Fund was \$24,113,674.

At year end, the Fund has no credit risk exposure to the borrowers because the amounts the Fund owes the borrowers exceed the amounts the borrowers owe the Fund.

Financial Statements

Notes to Financial Statements (Continued)

5. CAPITAL ASSETS

Capital asset activity for the years ended December 31, 2019 and 2018 were as follows:

	<u>2019</u>	<u>2018</u>
Furniture and equipment	\$ 76,842	\$ 73,865
Computer software	225,892	199,050
Leasehold improvements	<u>2,271</u>	<u>2,271</u>
	305,005	275,186
Less accumulated depreciation and amortization	<u>159,544</u>	<u>136,631</u>
Net property and equipment	<u>\$ 145,461</u>	<u>\$ 138,555</u>

Depreciation and amortization expense was \$22,913 and \$1,054 for 2019 and 2018, respectively.

6. OPERATING LEASES

The Fund has entered into an operating lease for office space through April 30, 2026. The lease provides that the lessee pay monthly base rent subject to annual increases, plus an escalation rent computed on costs incurred by the lessor. Upon executing the amendment, the Fund received rent abatements in the amount of \$115,587 which are being amortized over the life of the lease. The unamortized portion was \$47,165 and \$55,136 at December 31, 2019 and 2018, respectively. The total rental expense was \$194,084 and \$192,269 for 2019 and 2018, respectively.

Following is a schedule of minimum future rental payments for each of the next five years and in the aggregate under the non-cancelable operating lease at December 31, 2019:

<u>Year ended December 31</u>	<u>Amount</u>
2020	\$ 99,349
2021	101,678
2022	104,006
2023	106,335
2024	108,663
2025-2026	<u>148,248</u>
	<u>\$668,279</u>

The Fund leases office equipment under non-cancelable operating leases that expire at various dates through January, 2024. Total rent expense incurred under these operating leases was \$27,728 and \$27,059 for 2019 and 2018, respectively.

Notes to Financial Statements (Continued)

6. OPERATING LEASES (continued)

Minimum future rental payments under non-cancelable operating leases having remaining terms in excess of one year as of December 31, 2019 for each of the next five years are as follows:

<u>Year ended December 31</u>	<u>Amount</u>
2020	\$19,912
2021	19,912
2022	19,912
2023	7,941
2024	519
	<u>\$68,196</u>

7. COMMITMENTS

The Fund has committed to purchase \$90,000,000 interests in private equity partnerships. At December 31, 2019 and 2018, the Fund had a remaining contractual obligation of \$11,332,500 and \$13,395,000, respectively, to purchase additional interests in the private equity partnerships.

8. DEFERRED COMPENSATION PLAN

The Fund is a governmental eligible employer as defined by Code Section 457(e)(1)(A) and has established a deferred compensation plan (457(b)) for eligible employees. Individual contributions to the plan are equal to the amount of salary reductions elected by each participant for the year up to a maximum allowable by Internal Revenue Service regulations. Total employee contributions were \$40,550 and \$36,200 for 2019 and 2018, respectively. Employer contributions are not allowed.

Notes to Financial Statements (Continued)

9. PENSION LIABILITY OF THE PARTICIPATING EMPLOYER

A. Net Pension Liability

The components of the net pension liability as of December 31, 2019 and 2018 were as follows:

	<u>2019</u>
Total pension liability	\$2,046,085,330
Plan fiduciary net position	354,556,288
Plan net pension liability	1,691,529,042
Plan fiduciary net position as a percentage of the total pension liability	17.33%
	<u>2018</u>
Total pension liability	\$1,646,968,021
Plan fiduciary net position	342,255,873
Plan net pension liability	1,304,712,148
Plan fiduciary net position as a percentage of the total pension liability	20.78%

The schedule of changes in the employer's net pension liability and related ratios, presented as required supplementary information following the notes to the financial statements, presents multi-year trend information related to the funded status of the Fund.

B. Actuarial Assumptions

The total pension liability above was determined by an actuarial valuation performed as of December 31, 2019 and 2018 using the following actuarial methods and assumptions applied to all periods included in the measurement:

Actuarial valuation date	December 31, 2019
Actuarial cost method	Entry-age normal
Actuarial assumptions:	
Projected salary increases	20% to 2.75%
Inflation	2.50%
Investment rate of return	2.84%, net of investment expense
Cost-of-living adjustments	Retirees – 3% of the original benefit for employees who first became a participant before January 1, 2011. Retirees – lesser of 3% and ½ CPI of the original benefit for employees who first become a participant on or after January 1, 2011. Beneficiary – 3% compounded for beneficiaries of employees who first became a participant by January 1, 2011.
Asset valuation method	Market

Notes to Financial Statements (Continued)

9. PENSION LIABILITY OF THE PARTICIPATING EMPLOYER (continued)

B. Actuarial Assumptions (continued)

Actuarial valuation date	December 31, 2018
Actuarial cost method	Entry-age normal
Actuarial assumptions:	
Projected salary increases	20% to 2.75%
Inflation	2.50%
Investment rate of return	4.21%, net of investment expense
Cost-of-living adjustments	Retirees – 3% of the original benefit for employees who first became a participant before January 1, 2011. Retirees – lesser of 3% and ½ CPI of the original benefit for employees who first become a participant on or after January 1, 2011. Beneficiary – 3% compounded for beneficiaries of employees who first became a participant by January 1, 2011.
Asset valuation method	Market

Post-retirement mortality rates for 2018 were based on the RP-2000 Mortality Table with mortality improvements projected generationally from 2003 using a Scale AA to 110% of PubG-2010 with mortality improvements projected generationally using MP-2017.

Post-retirement mortality rates relating to 2019, for healthy annuitants were based on 110% of PubG-2010 Healthy Annuitant Table, with mortality improvements projected generationally using scale MP-2017. For active participants, mortality rates were based on 110% of PubG-2010 Healthy Employee Table, with mortality improvements projected generationally using scale MP-2017.

The actuarial assumptions used in the December 31, 2019 and December 31, 2018 valuations were based on the results of actuarial experience studies for a five-year period ending December 31, 2018 and December 31, 2017, respectively.

C. Discount Rate

The discount rate used to measure the total pension liability was 2.84%, for December 31, 2019. The projection of cash flows used to determine the discount rate assumed that member contributions will be made at the 9% contribution rate for 2020 and thereafter. Employer contributions will be made at the 1.1 multiple of member contributions from two years prior to 2020 and thereafter. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the Fund's fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members. The projected benefit payments through 2025 were discounted at the expected long-term rate of returns (7.25%). Starting in 2026, the projected benefit payments were discounted at the municipal bond index (2.74%, based on the Bond Buyer 20-GO Municipal Bond Index as of December 26, 2019). Therefore, a single equivalent blended discount rate of 2.84% was calculated using the long-term expected rate of return and municipal bond index.

Notes to Financial Statements (Continued)

9. PENSION LIABILITY OF THE PARTICIPATING EMPLOYER (continued)

C. Discount Rate (continued)

The discount rate used to measure the total pension liability was 4.21%, for December 31, 2018. The projection of cash flows used to determine the discount rate assumed that member contributions will be made at the 9% contribution rate for 2019 and thereafter. Employer contributions will be made at the 1.1 multiple of member contributions from two years prior to 2019 and thereafter. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the Fund's fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members. The projected benefit payments through 2024 were discounted at the expected long-term rate of returns (7.25%). Starting in 2025, the projected benefit payments were discounted at the municipal bond index (4.10%). Therefore, a single equivalent blended discount rate of 4.21% was calculated using the long-term expected rate of return and municipal bond index.

D. Discount Rate Sensitivity

The following is a sensitivity analysis of the net pension liability to changes in the discount rate as of December 31, 2019. The table below presents the pension liability of the Fund calculated using the discount rate of 2.84% as well as what the net pension liability would be if it were to be calculated using a discount rate that is 1 percentage point lower (1.84%) or 1 percentage point higher (3.84%) than the current rate:

	1% Decrease (1.84%)	Current Discount Rate	1% Increase (3.84%)
Net pension liability	\$2,031,154,003	\$1,691,529,042	\$1,418,852,853

For comparison purposes, the net pension liability as of December 31, 2018, calculated using the discount rate of 4.21%, as well as what the net pension liability would be if it were to be calculated using a discount rate that is 1 percentage point lower (3.21%) or 1 percentage point higher (5.21%) than the current rate:

	1% Decrease (3.21%)	Current Discount Rate	1% Increase (4.21%)
Net pension liability	\$1,551,957,537	\$1,304,712,148	\$1,104,251,891

10. SUBSEQUENT EVENT

In December 2019, a novel strain of coronavirus was reported in Wuhan, Hubei province, China. In the first several of months of 2020, the virus, SARS-CoV-2, and resulting disease, COVID-19, spread to the United States, including to the area impacting the Fund. As of date of report issuance, the Fund's evaluation of the effects of these events is ongoing; however, this situation negatively impacted the fair market value of investments and decreased investment income.

The extent of the impact of COVID-19 on the Fund's operational and financial performance will depend on future developments, including the duration and spread of the outbreak and related governmental or other regulatory actions.

Notes to Financial Statements (Continued)

11. EFFECT OF NEW ACCOUNTING STANDARDS ON CURRENT-PERIOD FINANCIAL STATEMENTS

The Governmental Account Standards Board (GASB) has approved the following:

- Statement No. 87, *Leases*
- Statement No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period*
- Statement No. 91, *Conduit Debt Obligations*
- Statement No. 92, *Omnibus 2020*
- Statement No. 93, *Replacement of Interbank Offered Rates*
- Statement No. 94, *Public-Private and Public-Public Partnerships and Availability Payment Arrangements*
- Statement No. 95, *Postponement of the Effective Dates of Certain Authoritative Guidance*

When they become effective, application of these standards may restate portions of these financial statements.

Financial Statements

Required Supplementary Information

SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS

Last Six Fiscal Years

	2014	2015	2016	2017
Total pension liability				
Service Cost	\$ 12,975,774	\$ 13,417,795	\$ 13,763,768	\$ 20,115,813
Interest	64,929,834	65,921,805	66,523,889	68,982,467
Change of benefit terms	-	-	93,579,710	36,183,940
Differences between expected and actual experience	5,447,687	682,159	(4,556,757)	2,785,815
Change of assumptions	-	-	198,725,863	370,422,560
Benefit payments, including refunds of employee contributions	<u>(70,536,042)</u>	<u>(70,602,016)</u>	<u>(74,077,877)</u>	<u>(78,138,027)</u>
Net change in total pension liability	12,817,253	9,419,743	293,958,596	420,352,568
Total pension liability – beginning	<u>888,023,364</u>	<u>900,840,617</u>	<u>910,260,360</u>	<u>1,204,218,956</u>
Total pension liability – ending (a)	<u>\$ 900,840,617</u>	<u>\$ 910,260,360</u>	<u>\$ 1,204,218,956</u>	<u>\$ 1,624,571,524</u>
Plan fiduciary net position				
Employer contributions	\$ 11,225,438	\$ 30,588,976	\$ 30,890,241	\$ 20,920,614
Employee contributions	10,831,434	12,368,636	12,246,115	13,675,292
Net investment income (loss)	27,490,520	8,823,613	30,920,231	51,082,314
Benefit payments, including refunds of employee contributions	(70,536,042)	(70,602,016)	(74,077,877)	(78,138,027)
Administrative expenses	(1,458,831)	(1,533,700)	(1,537,698)	(1,682,136)
Other	<u>100,518</u>	<u>88,113</u>	<u>102,572</u>	<u>91,779</u>
Net change in plan fiduciary net position	(22,346,963)	(20,266,378)	(1,456,416)	5,949,836
Plan fiduciary net position – beginning	<u>435,768,679</u>	<u>413,421,716</u>	<u>393,155,338</u>	<u>391,698,922</u>
Plan fiduciary net position – ending (b)	<u>\$ 413,421,716</u>	<u>\$ 393,155,338</u>	<u>\$ 391,698,922</u>	<u>\$ 397,648,758</u>
Employer's net pension liability - ending (a)-(b)	<u>\$ 487,418,901</u>	<u>\$ 517,105,022</u>	<u>\$ 812,520,034</u>	<u>\$ 1,226,922,766</u>
Plan fiduciary net position as a percentage of the total pension liability	45.89%	43.19%	32.53%	24.48%
Covered payroll	\$ 118,987,507	\$ 122,382,584	\$ 121,126,918	\$ 135,315,008
Employer's net pension liability as a percentage of covered payroll	409.64%	422.53%	670.80%	906.72%

Notes to Schedule:

The Fund implemented GASB Statement No. 67 in fiscal year 2014. Information prior to fiscal year 2014 is not available.

See independent auditors' report.

Financial Statements

Required Supplementary Information (Continued)

SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS (Continued) Last Six Fiscal Years (Continued)

	2018	2019
Total pension liability		
Service Cost	\$ 38,102,341	\$ 33,317,058
Interest	59,290,982	69,086,515
Change of benefit terms	-	-
Differences between expected and actual experience	5,001,084	15,529,818
Change of assumptions	(3,471,090)	359,734,367
Benefit payments, including refunds of employee contributions	<u>(76,526,820)</u>	<u>(78,550,449)</u>
Net change in total pension liability	22,396,497	399,117,309
Total pension liability – beginning	<u>1,624,571,524</u>	<u>1,646,968,021</u>
Total pension liability – ending (a)	<u>\$ 1,646,968,021</u>	<u>\$ 2,046,085,330</u>
Plan fiduciary net position		
Employer contributions	\$ 27,638,402	\$ 27,682,089
Employee contributions	12,125,457	12,664,855
Net investment income (loss)	(17,196,812)	51,982,545
Benefit payments, including refunds of employee contributions	(76,526,820)	(78,550,449)
Administrative expenses	(1,501,039)	(1,528,861)
Other	<u>67,927</u>	<u>50,236</u>
Net change in plan fiduciary net position	(55,392,885)	12,300,415
Plan fiduciary net position – beginning	<u>397,648,758</u>	<u>342,255,873</u>
Plan fiduciary net position – ending (b)	<u>\$ 342,255,873</u>	<u>\$ 354,556,288</u>
Employer's net pension liability - ending (a)-(b)	<u>\$ 1,304,712,148</u>	<u>\$ 1,691,529,042</u>
Plan fiduciary net position as a percentage of the total pension liability	20.78%	17.33%
Covered payroll	\$ 133,112,100	\$ 139,204,051
Employer's net pension liability as a percentage of covered payroll	980.16%	1215.14%

Notes to Schedule:

The Fund implemented GASB Statement No. 67 in fiscal year 2014. Information prior to fiscal year 2014 is not available.

See independent auditors' report.

Required Supplementary Information (Continued)

SCHEDULE OF EMPLOYER CONTRIBUTIONS Last Ten Fiscal Years

	Actuarially determined contribution	Contributions in relation to the actuarially determined contributions	Contribution deficiency	Covered payroll	Contributions as a percentage of covered payroll
2011	\$25,319,145	\$10,981,419	\$14,337,726	\$107,686,693	10.20%
2012	28,051,528	10,868,361	17,183,167	114,223,909	9.51
2012**	16,786,671	5,268,363	11,518,308	58,231,511	9.05
2013	41,834,857	15,707,814	26,127,043	117,781,596	13.34
2014	35,307,186	11,225,438	24,081,748	118,987,507	9.43
2015	36,273,994	30,588,976	5,685,018	122,382,584	24.99
2016	37,130,268	30,890,241	6,240,027	121,126,918	25.50
2017	45,253,238	20,920,614	24,332,624	135,315,008	15.46
2018	50,929,734	27,638,402	23,291,332	133,112,100	20.76
2019	61,887,790	27,682,089	34,205,701	139,204,051	19.89

** For the six months ended December 31, 2012, as a result of Public Act 097-0973, the Fund's year end was changed from June 30th to December 31st.

Notes to Schedule:

Methods and assumptions used to determine contribution rates.

Valuation Date	12/31/2019
Actual Cost Method	Entry Age
Amortization Method	Level Dollar
Amortization Period	23 years (closed period)
Asset Valuation Method	5-year Smoothed Market
Actuarial Assumption:	
Investment rate of return	7.25%, net of investment expense
Projected salary increases	20% to 2.75% based on service
Inflation rate	2.50%

See independent auditors' report.

Required Supplementary Information (Continued)

SCHEDULE OF INVESTMENT RETURNS
Last Six Fiscal Years

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
Annual money-weighted rate of return, net of investment expense	5.60%	5.61%	5.77%	5.58%	-5.10%	17.00%

Notes to Schedule:

The Fund implemented GASB Statement No. 67 in fiscal year 2014. Information prior to fiscal year 2014 is not available.

See independent auditors' report.

Supplementary Information

TAX LEVIES RECEIVABLE
For the Years Ended December 31, 2019 and 2018

Levy Year (Calendar)	Tax Levy	Collections	Tax Levies Receivable	Allowance for Uncollectible Taxes	Allowance for Uncollectible Write-offs as a Percentage of Tax Levy	Net Tax Levies Receivable
At December 31, 2019:						
2019	\$14,572,731	\$ -	\$14,572,731	\$ -	0.00%	\$14,572,731*
At December 31, 2018:						
2018	\$13,194,114	\$ -	\$13,194,114	\$ -	0.00%	\$13,194,114

* Collected in April 2020

Supplementary Information (Continued)

SCHEDULE OF ADMINISTRATIVE AND GENERAL EXPENSES
For the Years Ended December 31, 2019 and 2018

	<u>2019</u>	<u>2018</u>
Actuary expense	\$ 50,638	\$ 70,750
Auditing	28,000	28,000
IT consultant	36,629	27,360
Conference and convention expense	24,679	16,503
Contributions for annuities of Retirement Board employees	89,655	65,588
Depreciation	22,913	1,054
Equipment rental	27,728	27,059
Filing fee – State of Illinois	8,000	8,000
File storage expense	7,614	6,977
Hospitalization	91,590	100,505
Legal	47,627	80,156
Legislative consultant	36,000	36,000
Office supplies and expenses	25,252	22,240
Postage	9,318	10,094
Insurance - surety bond and other	14,171	13,603
Rent expense	194,084	192,269
Salaries	750,540	737,688
Payroll tax	10,299	10,463
Bank fees	19,646	21,018
Telephone	8,790	8,394
Transportation	3,651	3,699
Prejudgment interest expense	-	1,035
Trustees' election expense	22,037	12,584
	<u>\$ 1,528,861</u>	<u>\$ 1,501,039</u>

Supplementary Information (Continued)

SCHEDULE OF PROFESSIONAL EXPENSES
For the Years Ended December 31, 2019 and 2018

	2019	2018
Legal	\$ 47,627	\$ 80,156
Actuary expense	50,638	70,750
Auditing	28,000	28,000
IT consultant	36,629	27,360
Legislative consultant	<u>36,000</u>	<u>36,000</u>
	<u>\$198,894</u>	<u>\$242,266</u>

Supplementary Information (Continued)

SCHEDULE OF INVESTMENT EXPENSES		
For the Years Ended December 31, 2019 and 2018		
	2019	2018
<u>U.S. EQUITY</u>		
Great Lakes Advisors, LLC	\$ 64,283	\$ 64,387
Ariel Investments	151,949	154,234
RBC Global Asset Management	28,779	99,453
Northern Trust Quantitative Advisors	<u>9,221</u>	<u>9,436</u>
	<u>254,232</u>	<u>327,510</u>
<u>NON - U.S. EQUITY</u>		
Ativo Capital	89,804	35,076
Northern Trust Quantitative Advisors	<u>14,730</u>	<u>22,391</u>
	<u>104,534</u>	<u>57,467</u>
<u>FIXED INCOME</u>		
LM Capital Group, LLC	27,419	28,734
MacKay Shields, LLC	66,161	74,053
Chicago Equity Partners	42,337	39,510
ULLICO Investment Company	<u>65,754</u>	<u>63,327</u>
	<u>201,671</u>	<u>205,624</u>
<u>HEDGED EQUITY</u>		
Parametric	<u>83,988</u>	<u>85,972</u>
	<u>83,988</u>	<u>85,972</u>
<u>RISK PARITY</u>		
Invesco	<u>655</u>	<u>43,786</u>
	<u>655</u>	<u>43,786</u>
<u>REAL ESTATE</u>		
Principal Global Investors	155,754	151,337
UBS Realty Investors, LLC	<u>212,824</u>	<u>213,153</u>
	<u>368,578</u>	<u>364,490</u>
<u>PRIVATE EQUITY</u>		
HarbourVest Partners, LLC	69,349	101,480
Mesirow Financial Capital Partners	159,026	157,837
GoldPoint Partners, LLC	<u>25,000</u>	<u>27,677</u>
	<u>253,375</u>	<u>286,994</u>
<u>INFRASTRUCTURE</u>		
ULLICO Infrastructure	214,985	209,505
IFM Global Infra (US) L.P.	<u>85,373</u>	<u>85,371</u>
	<u>300,358</u>	<u>294,876</u>
<u>OTHER</u>		
Custody – Northern Trust Co.	70,000	70,000
Investment consultant – Marquette Associates	<u>95,000</u>	<u>95,000</u>
	<u>165,000</u>	<u>165,000</u>
Total	<u>\$1,732,391</u>	<u>\$1,831,719</u>

INVESTMENT

INTRODUCTION

The Fund is authorized to invest in bonds, notes, and other obligations of the U.S. Government; corporate debentures and obligations; insured mortgage notes and loans; common and preferred stocks; stock options; real estate; collective investment funds; and private equity partnerships as set forth in the Illinois Compiled Statutes. Income on all investments is recognized on the accrual basis. Gains and losses on sales and exchanges of investments are recognized on the transaction date of such sale or exchange. Dividend income is recognized based on dividends declared. Investments are reported at fair value. Short term investments are reported at cost, which approximates fair value. Fair value for bonds and stocks are determined by quoted market prices and for investments for which market quotations are not readily available are valued at their fair values as determined by a bank administrator under the direction of the Board of Trustees, with the assistance of a valuation service.

The Investment Section was prepared by staff with assistance from Marquette Associates, Inc., the Fund's investment consultant and Northern Trust Company, the Fund's custodian. Return calculations were prepared using a time-weighted rate of return methodology in accordance with the performance presentation standards of the CFA Institute.

Investment Recap

Market Environment

The U.S. stock market increased by 30.9% during the year ended December 31, 2019, as measured by the Dow Jones U.S. Total Stock Market Index. Within the U.S. stock market, there was some differentiation in returns between large-cap, mid-cap, and small-cap stocks over the year, with returns of 31.4%, 30.5%, and 25.2% for the Russell 1000, Russell Mid-Cap and Russell 2000, respectively. In addition, value stocks significantly underperformed growth stocks, with returns of 26.3% and 35.9% for the Russell 3000 Value and Russell 3000 Growth, respectively.

The non-U.S. equity markets, as measured by the MSCI ACWI ex US Index, significantly underperformed their U.S. counterparts, posting a return of 21.5% during the year. Emerging markets, as measured by the MSCI Emerging Markets Index, moderately underperformed non-U.S. developed markets, as measured by the MSCI EAFE Index, over the year with returns of 18.4% and 22.0%, respectively.

The broad bond market, as measured by the Barclays Aggregate Index, returned 8.7% during the year. The credit sector, as measured by the Barclays U.S. Credit Index, outperformed the government sector, as measured by the Barclays U.S. Government Index, over the year with returns of 13.8% and 6.8%, respectively.

The Federal Reserve lowered the Fed Funds rate three times in 2019. The Fed lowered rates by 0.25% each in August, September and October. Real GDP increased at a 2.1% annualized rate in the fourth quarter of 2019. This was in line with the 2.2% annualized rate in the fourth quarter of 2018 and below with the 2.9% annualized rate in the fourth quarter of 2017. Inflation, as measured by the Core Consumer Price Index, posted an increase of 2.3% for the year ended December 31, 2019. The unemployment rate was 3.5% on December 31, 2019, an improvement from the 3.9% rate on December 31, 2018.

Performance Commentary

The Pension Fund posted a calendar year return of 17.0%, net of fees, outperforming the custom benchmark by 0.4%. The best performing asset class for the year was US Equities, which returned 28.8%, net of fees. The worst performing asset class for the year was Real Estate, which returned 3.1%, net of fees.

The Fund posted a three-year annualized return of 8.3%, net of fees, underperforming the custom benchmark by 0.6%. On a five-year basis, the Fund returned 7.0%, net of fees, in line with the custom benchmark.

The fixed income market, as measured by the Barclays Capital Aggregate Index, returned 0.2% during the year. The Fund's fixed income portfolio returned 0.1%, net of fees, over that period, performing in line with the benchmark. At the end of the year, the Fund's fixed income assets comprised 18.0% of the total Fund's assets.

INVESTMENT

Investment Recap (Continued)

Performance Commentary (Continued)

The broad U.S. stock market, as measured by the Dow Jones Total US Stock Index, returned 30.9% during the year. The Fund's U.S. Equity portfolio returned 28.8%, net of fees, over that period, underperforming the benchmark by 1.1%. The underperformance of the U.S. Equity portfolio was primarily the result of an overweight to both small-cap stocks and value stocks, which underperformed large-cap stocks and growth stocks respectively. Outperformance from actively managed funds within the US Equity portfolio helped to offset the drag from the small-cap and value tilts in the portfolio. The U.S. Equity portfolio was led by the NTGI Wilshire 5000 Index portfolio, which returned 31.0%, net of fees, for the year, in line with its benchmark. At the end of the year, the Fund's U.S. stock market assets comprised 29.1% of the total Fund's assets.

The international stock market, as measured by the MSCI ACWI ex US Index, returned 21.5% during the year. The Fund's International Equity portfolio returned 24.2%, net of fees, over that period, outperforming the benchmark by 2.7%. The International portfolio was led by the William Blair non-US Small-Cap portfolio, which returned 34.3%, net of fees, for the year, slightly above its benchmark. At the end of the year, the Fund's international stock market assets comprised 21.1% of the total Fund's assets.

The real estate market, as measured by the NCREIF Fund Index, returned 4.4% during the year. The Fund's real estate portfolio returned 3.1%, net of fees, over that period, underperforming the benchmark by 1.3%. At the end of the year, the Fund's real estate assets comprised 11.0% of the total Fund's assets.

INVESTMENT

Summary of Investments

Years ended December 31, 2019 and December 31, 2018

Type of Investment	December 31, 2019				December 31, 2018			
	<u>Fair Value</u>	<u>%</u>	<u>Book Value</u>	<u>%</u>	<u>Fair Value</u>	<u>%</u>	<u>Book Value</u>	<u>%</u>
Fixed income	\$ 59,247,177	18	\$ 55,405,843	20	\$ 61,043,992	19	\$ 59,651,165	20
Domestic equities	95,533,408	29	62,487,923	23	87,673,188	27	69,122,974	23
International equities	70,535,213	21	58,498,857	21	63,489,036	20	64,703,099	22
Risk parity	-	-	-	-	1,348,182	-	1,164,991	-
Hedged equity	24,807,129	7	19,700,000	7	24,437,510	8	23,200,000	8
Private equity	18,031,007	5	32,209,684	12	19,232,200	6	32,032,010	11
Real estate	37,047,140	11	24,572,358	9	37,225,201	11	24,595,797	9
Infrastructure	24,353,479	7	15,088,998	6	22,774,008	7	15,768,986	5
Short-term	<u>4,784,370</u>	<u>2</u>	<u>4,784,370</u>	<u>2</u>	<u>6,181,608</u>	<u>2</u>	<u>6,181,608</u>	<u>2</u>
Total Assets	<u>\$334,338,923</u>	<u>100</u>	<u>\$272,748,033</u>	<u>100</u>	<u>\$323,404,925</u>	<u>100</u>	<u>\$296,420,630</u>	<u>100</u>

* Investment assets do not reflect the amounts due to or from brokers at year end. Net due to broker is \$148,415 and \$1,172,685 at December 31, 2019 and 2018, respectively.

INVESTMENT

Statement of Investment Policy for the Park Employees' Annuity and Benefit Fund of Chicago

ADOPTED 10/94

REVISED 8/1/98; 5/19/99; 2/16/00; 5/20/03; 2/29/08; 4/21/11; 7/16/15, 2/21/19

The purpose of this statement is to establish the investment policy for the management of the assets of the Park Employees' Annuity and Benefit Fund.

Distinction of Responsibilities

The Trustees are responsible for establishing the investment policy that is to guide the investment of Fund assets. The target allocation that the Trustees deem appropriate for the Fund is displayed below. The Fund's investments are distributed to a number of asset classes to minimize investment risk through diversification and simultaneously provide enhanced investment performance. The Trustees review the investment policy every three to five years.

Investment managers appointed by the Trustees to execute the policy will invest Fund assets in accordance with established guidelines but will apply their own judgments concerning relative investment values. In particular, the investment managers are accorded full discretion, within established guidelines and policy limits, to select individual investments and diversify their portfolios.

Allocation of Assets

It is the Trustees' policy to invest the Fund's assets in the following proportions:

Asset Category	Board Approved Policy		
	Target (%)	Range (%)	
U.S. Equity	28.5%	18.5%	38.5%
Non-U.S. Equity	20.0	10.0	30.0
Private Equity	7.0	0.0	14.0
Long-Short Equity	7.0	0.0	15.0
Risk Parity	3.0	0.0	6.0
Real Estate	9.0	4.0	14.0
Infrastructure	5.0	0.0	10.0
U.S. Bonds	<u>20.5</u>	15.5	25.5
	<u>100.0%</u>		

Normal cash flows (contributions and benefit payments) will be used to maintain the allocation as close as practical to the target allocation. If normal cash flows are insufficient to maintain the allocation within the permissible range as of any calendar quarter-end, the Trustees shall transfer balances as necessary between the asset types to bring the allocation back within the permissible ranges.

Active and Passive Investments

The Board of Trustees has directed that a prescribed percentage of specific asset classes be invested passively through the use of index funds. The Board of Trustees has approved the following passive investment percentages:

Asset Category	% Indexed
U.S. Equity	54.4%
Non-U.S. Equity	45.0%
U.S. Bonds	0.0%

INVESTMENT

Statement of Investment Policy for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

Diversification

The portfolio is to be diversified within each asset class to reduce the impact of large losses in individual investments in a manner that is consistent with Retirement Board policy, and otherwise at the discretion of each investment manager.

Liquidity

The cash flow needs of the Fund are approximately 15% of the total Fund assets annually.

Individual Investment Management Performance Benchmark

Individual performance benchmarks will be established by the Board of Trustees and used to evaluate individual manager's performance.

Investment Objective

The investment objective of the Fund is to equal or exceed the rate of return of a benchmark comprised of 28.5% Wilshire 5000 Stock Index, 20.0% MSCI All Country World Ex-US Index, 20.5% BarCap Aggregate Index, 7% Cambridge All Private Equity Index, 7% HFRX Hedged Equity Index, 10.0% NCREIF ODCE Index, and 7% CPI+4% on a net-of-fee basis. As a secondary benchmark, the Fund is to achieve an above-median ranking in a universe of other public funds over a reasonable measurement period.

INVESTMENT

Schedule of Investment Performance

	Years ended December 31, 2019 - 2014						Year ended December 31, 2019		
	<u>12/31/19</u>	<u>12/31/18</u>	<u>12/31/17</u>	<u>12/31/16</u>	<u>12/31/15</u>	<u>12/31/14</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>
Total Fund	17.0%	-5.1%	14.2%	8.4%	1.9%	6.9%	8.3%	7.0%	8.6%
Benchmark Portfolio	16.6	-3.0	13.8	6.7	1.4	6.7	8.9	7.0	7.9
Public Funds Median Return	19.5	-4.4	14.7	7.4	-0.4	5.5	9.5	7.0	8.2
Actuarial Assumed Rate of Return	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Consumer Price Index	2.3	1.9	2.2	2.1	0.8	0.8	4.2	1.9	1.8
Fixed Income	7.7%	0.0%	3.4%	2.5%	0.9%	5.5%	3.7%	2.9%	3.8%
BarCap Aggregate	8.7	0.0	3.5	2.6	0.6	6.0	4.0	3.0	3.7
Universe Median	8.9	-0.2	5.2	4.3	0.0	3.6	4.3	3.2	4.3
U.S. Equities	28.8%	-11.5%	18.1%	14.0%	-0.4%	11.6%	10.4%	8.9%	12.5%
Dow Jones Total US Stock Index	30.9	-5.3	21.2	12.6	0.4	12.5	14.5	11.2	13.4
Universe Median	29.9	-6.1	20.2	12.7	-0.1	11.0	13.6	10.6	12.9
Non-U.S. Equities	24.2%	-16.5%	28.4%	9.7%	-4.9%	-4.9%	10.0%	6.8%	5.9%
MSCI ACWI Ex US	21.5	-14.2	27.2	4.5	-5.3	-3.4	9.9	5.5	5.0
Universe Median	22.8	-15.1	28.3	4.3	-3.8	-3.7	10.0	5.9	5.7
Long-Short Equities	16.3	-2.9%	10.1%	2.9%	-4.4%	4.9%	7.5%	4.1%	5.3%
HFRX Hedged Equity	10.7	-9.4	10.0	0.1	-2.3	1.4	3.3	1.5	1.2
Universe Median	7.7	-2.1	5.8	2.0	-0.5	4.2	4.7	3.1	3.8
Risk Parity	n/a	-6.0%	10.4%	12.6%	-3.2%	n/a	n/a	n/a	n/a
60% MSCI World/40% BarCap Agg	n/a	-5.1	14.5	5.7	-0.1	n/a	n/a	n/a	n/a
Real Estate	3.3%	7.5%	6.4%	9.1%	14.3%	11.5%	5.6%	8.0%	10.3%
NCREIF-ODCE	4.4%	7.4	6.7	7.8	13.9	11.5	6.1	8.0	10.4
Universe Median	5.0	7.3	6.4	7.1	13.3	12.2	6.5	8.1	10.1
Infrastructure	11.2%	15.3%	10.9%	9.2%	n/a	n/a	12.5%	n/a	n/a
CPI+4%	6.4%	6.0	6.2	6.2	n/a	n/a	6.2	n/a	n/a
Private Equity	7.4%	7.0%	11.2%	5.9%	8.9%	11.1%	9.3%	9.0%	11.4%
Cambridge All Private Equity	8.9	11.5	13.1	6.9	5.4	11.0	12.8	11.0	12.7

NOTE: The basis for the calculations is a time-weighted rate of return based on the market rate of return.

As of February 21, 2019, the Policy Benchmark consists of 28.5% Wilshire 5000 Stock Index, 20.0% MSCI All Country World Ex-US Index, 20.5% BarCap Aggregate Index, 7% Cambridge All Private Equity Index, 7% HFRX Hedged Equity Index, 10.0% NCREIF ODCE Index, and 7% CPI+4%. Prior to February 21, 2019, the Policy Benchmark consisted of 28.5% Wilshire 5000 Stock Index, 20.0% MSCI All Country World Ex-US Index, 25.5% BarCap Aggregate Index, 7% Venture Economics All Private Equity Index, 10% HFRX Hedged Equity Index, and 9.0% NCREIF ODCE Index. Prior to August 1, 2016, the Policy Benchmark consisted of 32.5% Wilshire 5000 Stock Index, 16.0% MSCI All Country World Ex-US Index, 25.5% BarCap Aggregate Index, 7% Venture Economics All Private Equity Index, 10% HFRX Hedged Equity Index, and 9.0% NCREIF ODCE Index. Prior to December 1, 2013, the Policy Benchmark consisted of 27% BarCap Aggregate, 27% Wilshire 5000, 17% MSCI ACWI ex U.S., 12% NCREIF ODCE, 10% HFRX Hedged Equity, and 7% Venture Economics All Private Equity Index. Prior to April 1, 2011, the Policy Benchmark consists of 35% BarCap Aggregate, 38% Wilshire 5000, 12% MSCI ACWI ex U.S., 10% NCREIF Property Index, and 5% Venture Economics All Private Equity Index. Prior to February 29, 2008, the Policy Benchmark consisted of 35% BarCap Aggregate, 38% Wilshire 5000, 12% MSCI EAFE, 10% NCREIF Property Index, and 5% Venture Economics All Private Equity Index.

INVESTMENT

Schedule of Ten Largest Stock and Bond Holdings

For the year ended

December 31, 2019

U.S. Stocks*

Shares	Holdings	Fair Value
50,600	KKR & Co Inc	\$ 1,476,002
96,400	Mattel Inc	1,306,220
20,200	Stericycle Inc	1,288,962
29,500	Lazard Ltd	1,178,820
4,200	Zebra Technologies Corp	1,072,848
25,315	Viacom Inc	1,062,481
63,400	Tegna Inc	1,058,146
7,800	Royal Caribbean Cruises	1,041,378
26,100	Kennametal Inc	962,829
39,000	Interpublic Group Companies Inc	900,900

International Stocks*

Shares	Holdings	Fair Value
3,577	ADR Alibaba Group Holding Ltd	\$ 758,700
12,116	Tencent Holdings Ltd	584,004
51,311	Taiwan Semicon Man	569,936
9,990	Samsung Electronic	483,907
2,881	Nestle S.A.	320,070
680	Roche Holdings Ltd	226,891
2,081	Novartis	203,767
2,212	Toyota Motor Corp	155,718
19,576	HSBC Holdings	153,482
952	SAP	129,825

Bonds*

Holdings	Fair Value
United States Treasury Bond 1.5% due 10/31/2021	\$1,627,771
United States Treasury Bond 2.375% due 11/15/2049	699,645
United States Treasury Bond 2.25% due 8/15/2049	608,008
United States Treasury Note 2.25% due 11/15/2025	575,247
United States Treasury Bond 2.375% due 5/15/2029	572,064
United States Treasury Bond 4.5% due 2/15/2036	531,031
United States Treasury Bond 3.0% due 2/15/2047	506,848
United States Treasury Note 2.0% due 2/15/2025	456,504
United States Treasury Note 2.75% due 2/15/2028	437,114
United States Treasury Bond 3.0% due 2/15/2048	422,637

* A complete listing of all individual securities held is available for review upon request.

INVESTMENT

Schedule of Investment Brokerage Commissions

Broker Name	Shares*	Commission
Loop Capital Markets LLC	186,108	\$ 6,229
Cabrera Capital Markets LLC	143,605	4,275
Williams Capital Group LP	57,800	922
Mischler financial Group Inc	44,000	880
Academy Securities Inc	36,460	729
Siebert Cisneros Shank & Co	30,700	614
Broker commissions under \$500	<u>51,740</u>	<u>1,116</u>
 Total Broker Commissions	 <u>550,413</u>	 <u>\$14,765</u>

** Total shares traded at an average cost of \$0.03 per share.*



101 North Wacker Drive, Suite 500 Chicago, IL 60606
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April 30, 2020

Board of Trustees
Park Employees' Annuity and Benefit Fund of Chicago
55 East Monroe Street, Suite 2720
Chicago, Illinois 60603

Dear Board Members:

We are pleased to submit this annual Actuarial Valuation and Review as of December 31, 2019. It summarizes the actuarial data used in the valuation, establishes the net pension liability under Governmental Accounting Standards Board (GASB) Statement No. 67 and the funding requirements for the fiscal year ending December 31, 2020, and analyzes the preceding year's experience.

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

Asset and Membership Data

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

Plan Changes

The plan provisions are unchanged since the last actuarial valuation.

Actuarial Assumptions and Methods

The actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Fund's actuary. The assumptions and methods used for the December 31, 2019 actuarial valuation were based on an experience analysis covering the five-year period ending December 31, 2017 and were adopted by the Board, effective for the December 31, 2018 valuation. These actuarial assumptions and methods comply with the parameters set by the Actuarial Standards of Practice and the parameters for disclosure in GASB Statement No. 67. The investment return assumption is based on the Fund being invested according to the target asset allocation in the Investment Policy Statement. To the extent that the liquidation of assets to pay benefit payments and expenses requires a shift in investment allocation to more liquid, lower return asset classes, a lower discount rate may be required in the future.

Funding Adequacy

The funding policy of the Fund, adopted by the Board, is to have contributions sufficient to amortize the unfunded liability over the 30-year period ending December 31, 2042. However, the actual amount of employer contributions each year is set by statute. For Fiscal 2020, actual employer contributions come from a property tax levied by the Chicago Park District equal to the total amount of contributions made by employees in the calendar year two years prior to the year of the levy, multiplied by 1.1. The 1.1 factor is known as the tax multiple.

ACTUARIAL

The employer contributions mandated by the Illinois Pension Code are insufficient to avoid insolvency, and without a change, the Fund is in imminent danger of insolvency and the assets are projected to be depleted in the next eight years (during 2027). Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. If the Fund becomes insolvent, the employer will be required to make contributions on a “pay as you go” basis, which means the employer would have to pay all benefits as they become due.

Financial Results and Membership Data

This report includes the following schedules for the financial section of the Comprehensive Annual Financial Report, which were prepared by Segal:

- Actuarial
 - Active Member Valuation Data
 - Retirees and Beneficiaries Added to and Removed from Rolls
 - Solvency Test
 - Analysis of Financial Experience
- Financial
 - Schedule of Changes in Employer’s Net Pension Liability
 - Schedule of Employer’s Net Pension Liability
 - Schedule of Employer Contributions

Limitation of Actuarial Measurements

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

Qualifications

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

Sincerely,

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

By:



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



Kim Nicholl, FSA, MAAA, EA, FCA
Senior Vice President and Actuary

ACTUARIAL

SECTION 1: Valuation Summary for the Park Employees' Annuity and Benefit Fund of Chicago

Purpose

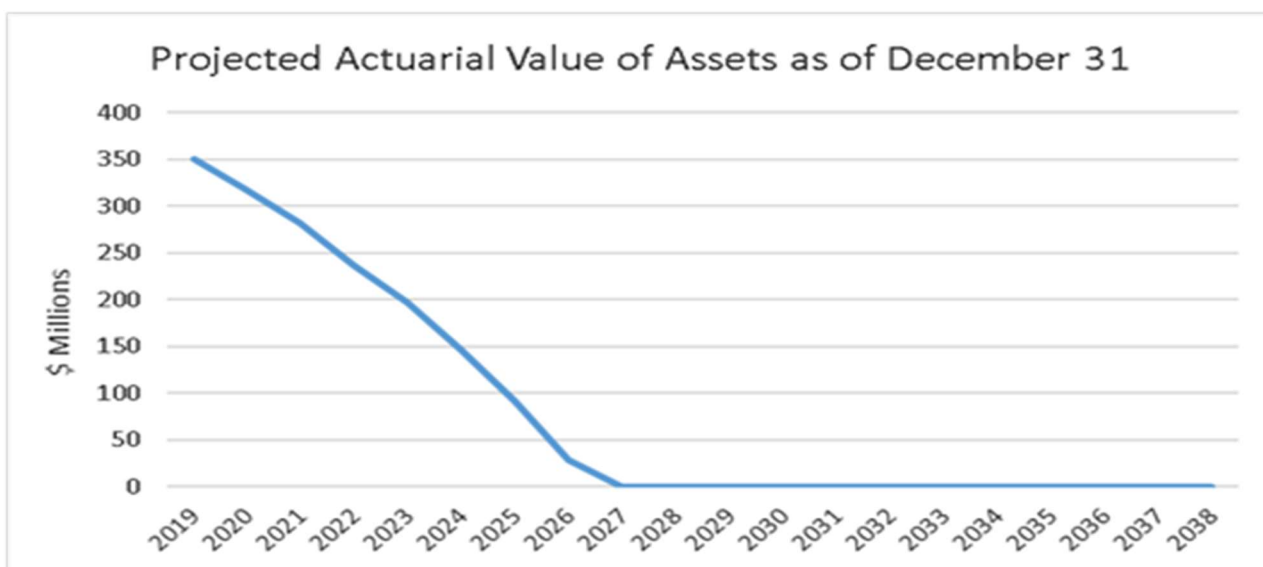
This report has been prepared by Segal to present a valuation of the Park Employees' Annuity and Benefit Fund of Chicago (the Fund) as of December 31, 2019. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as outlined in 40 ILCS 5/12 and administered by the Board;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of December 31, 2019, provided by Fund staff;
- The assets of the Fund as of December 31, 2019, provided by Fund staff;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Valuation Highlights

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

1. **The Fund is now projected to become insolvent during 2027. The graph below shows a 20-year projection of the actuarial value of assets. A 40-year projection of the Fund's financial status is shown in Exhibit V.**



2. **The funding approach mandated by the Illinois Pension Code is inadequate. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance.**

ACTUARIAL

SECTION 1: Valuation Summary for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

Valuation Highlights (Continued)

3. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of December 31, 2019, is 29.9%, compared to 32.1% as of December 31, 2018. This ratio is a measure of funding status, its history is a measure of funding progress. Using the fair value of assets, the funded ratio as of December 31, 2019, is 30.3%, compared to 30.0% as of December 31, 2018. These measurements are not necessarily appropriate for assessing the sufficiency of Fund assets to cover the estimated cost of settling the Fund's benefit obligation or the need for or the amount of future contributions.
4. Employer contributions to the Fund come from a tax levied upon all taxable property in the City of Chicago. The amount of tax that is levied is 1.1 times the amount of employee contributions made two years prior. The 1.1 factor is known as the tax multiple. As shown in Chart 13, for the fiscal year beginning January 1, 2020, the actuarially determined contribution amount (ADC) is \$67,297,212. Based on the 1.1 tax multiple, and using the Fund's assumption of 3% loss on collections (the Park District has been absorbing this loss, however, the Park District is not guaranteed to do so in the future), we have estimated the employer contribution for the fiscal year beginning January 1, 2020, to be \$12,757,896. **Compared to the ADC of \$67,297,212, the contribution deficiency is \$54,539,316 as of January 1, 2020. In the prior fiscal year, actual contributions were \$34,205,701 less than the ADC. Each year of a contribution deficiency leads to an increased deficiency in all future years.**
5. In 2019, in addition to the contributions required by 40 ILCS 5/12-149, the employer made a supplemental contribution of \$13.1 million to the Fund, for total employer contributions of \$27.7 million. For 2020, in addition to the contributions required by 40 ILCS 5/12-149, the employer has budgeted a supplemental contribution of \$20.6 million to the Fund.
6. For the year ended December 31, 2019, Segal has determined that the asset return on a fair value basis was 16.1%. After gradual recognition of investment gains and losses under the actuarial smoothing method, the actuarial rate of return was 6.6%. This represents an experience loss when compared to the assumed rate of 7.25%. As of December 31, 2019, the actuarial value of assets (\$350.0 million) represents 98.7% of the fair value (\$354.6 million).
7. The portion of deferred investment gains and losses recognized in the calculation of the December 31, 2019, actuarial value of assets resulted in a loss of \$2,267,129. Additionally, the demographic and liability experience resulted in a \$9,107,861 net loss.
8. The total unrecognized investment loss as of December 31, 2019, is \$4,595,860. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 7.25% per year (net of investment expenses) on a **fair value** basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual fair value return is equal to the assumed 7.25% rate and all other actuarial assumptions are met, the contribution requirements would increase over the next few years.
9. As mentioned above, the current method used to determine the actuarial value of assets yields an amount that is 98.7% of the fair value of assets as of December 31, 2019. Guidelines in Actuarial Standard of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding fair value. We believe the actuarial asset method currently complies with these guidelines.

ACTUARIAL

SECTION 1: Valuation Summary for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

Valuation Highlights (Continued)

10. When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age method) that is used for funding purposes is used to determine the total pension liability. However, as of December 31, 2019, the GASB blended discount rate calculation results in a lower discount rate (2.84%) than is used for funding purposes (7.25%). This means that the total pension liability (TPL) measure for financial reporting shown in this report will differ from the actuarial accrued liability (AAL) measure for funding. We note that the same is true for the normal cost component of the annual plan cost for funding and financial reporting.
11. The net pension liability (NPL) is equal to the difference between the total pension liability (TPL) and the Plan's fiduciary net position. The Fund's fiduciary net position is equal to the fair value of assets. The NPL as of December 31, 2019, is \$1,691,529,042.
12. This actuarial report as of December 31, 2019, is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the cost of the plan, while increases in asset values (in excess of expected) will decrease the cost of the plan.

ACTUARIAL

SECTION 1: Valuation Summary for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

	2020	2019
Contributions for fiscal year beginning:		
Actuarially determined contribution requirement	\$67,297,212	\$61,887,790
Estimated employer contributions (provided by the Fund, reflecting 3% loss on collections)	12,757,896	14,135,549
Actual employer contribution	--	27,682,089
Funding elements for fiscal year beginning:		
Employer normal cost, including administrative expenses	\$6,457,619	\$5,750,766
Fair value of assets	354,556,288	342,255,873
Actuarial value of assets	349,960,428	366,806,612
Actuarial accrued liability	1,170,602,980	1,142,297,965
Unfunded actuarial accrued liability	820,642,552	775,491,353
Funded ratio	29.90%	32.11%
GASB Information:		
Long-term expected rate of return	7.25%	7.25%
Municipal bond index	2.74%	4.10%
Single equivalent discount rate	2.84%	4.21%
Total pension liability	\$2,046,085,330	\$1,646,968,021
Plan fiduciary net position	354,556,288	342,255,873
Net pension liability	1,691,529,042	1,304,712,418
Plan fiduciary net position as a percentage of total pension liability	17.33%	20.78%
Demographic data for plan year beginning:		
Number of retired participants and beneficiaries	2,843	2,854
Number of vested former participants	147	145
Number of active participants	3,132	3,187
Total salary supplied by the Fund	\$136,105,381	\$129,923,175
Average salary	43,456	40,767

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

ACTUARIAL

SECTION 1: Valuation Summary for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

Important Information About Actuarial Valuations (Continued)

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits:** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data:** An actuarial valuation for the Fund is based on data provided to the actuary by the Fund staff. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets:** The valuation is based on the fair value of assets as of the valuation date, as provided by the Fund staff. The Fund staff uses an "actuarial value of assets" that differs from fair value to gradually reflect year-to-year changes in the fair value of assets in determining the contribution requirements.
- **Actuarial assumptions:** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the Board is aware of any event or trend that was not considered in the valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the Fund's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
- The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

ACTUARIAL

SECTION 1: Valuation Summary for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

Important Information About Actuarial Valuations (Continued)

As Segal has no discretionary authority with respect to the management or assets of the Fund, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Fund.

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive members, retirees, and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1

Member Population: 2011 – 2019

Census Date	Active Members	Vested Terminated Members*	Retirees and Beneficiaries**	Ratio of Actives to Retirees and Beneficiaries
June 30, 2011	2,795	141	2,913	0.96
June 30, 2012	2,977	153	2,921	1.02
December 31, 2012	3,053	152	2,906	1.05
December 31, 2013	3,076	148	2,904	1.06
December 31, 2014	2,973	147	2,891	1.03
December 31, 2015	3,063	145	2,876	1.07
December 31, 2016	3,114	149	2,870	1.09
December 31, 2017	3,543	150	2,876	1.23
December 31, 2018	3,187	145	2,854	1.12
December 31, 2019	3,132	147	2,843	1.05

*Excludes terminated members due a refund of employee contributions.

** Excludes QILDROs

ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

A. MEMBER DATA (Continued)

Active Members

Plan costs are affected by the age, years of service and payroll of active members. In this year's valuation, there were 3,132 active members with an average age of 41.8, average years of service of 10.0 years and average salary of \$43,456. The 3,187 active participants in the prior valuation had an average age of 41.5, average years of service of 9.9 years and average salary of \$40,767.

Inactive Participants

In this year's valuation, there were 147 members with a vested right to a deferred or immediate vested benefit.

In addition, there were 4,756 members entitled to a return of their employee contributions.

These graphs show a distribution of active members by age and by years of service.

CHART 2

Distribution of Active Members by Age as of December 31, 2019

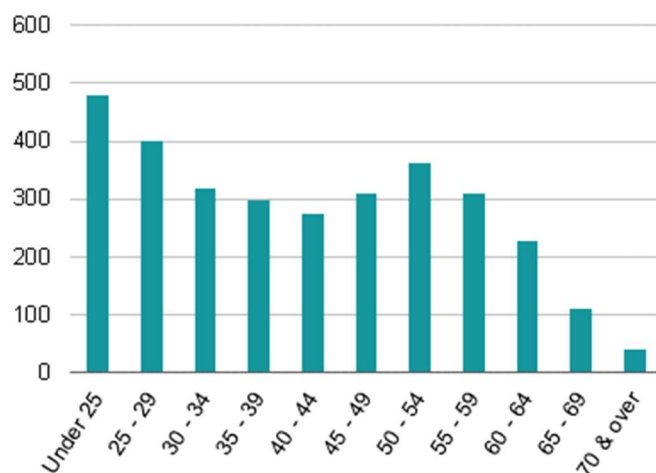
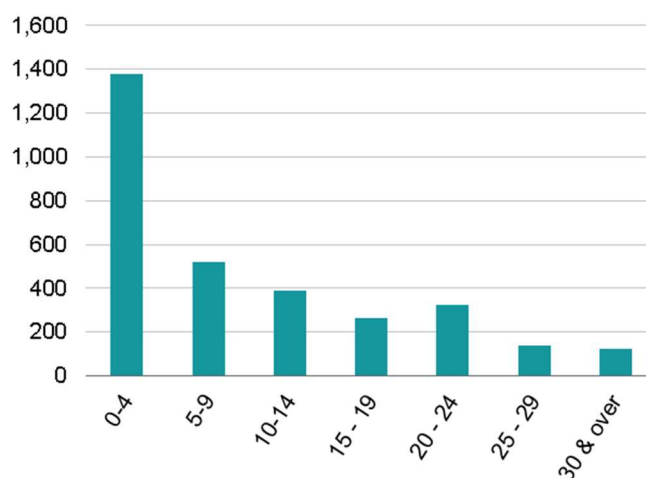


CHART 3

Distribution of Active Members by Years of Service as of December 31, 2019



ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

A. MEMBER DATA (Continued)

Retirees and Beneficiaries

As of December 31, 2019, 2,144 retirees, 686 beneficiaries, and 13 dependent children were receiving total monthly benefits of \$6,329,549. For comparison, in the previous valuation, there were 2,136 retirees, 706 beneficiaries, and 12 dependent children receiving total monthly benefits of \$6,192,223.

These graphs show a distribution of the current retirees based on their monthly amount and age.

CHART 4

Distribution of Retirees by Monthly Amount as of December 31, 2019

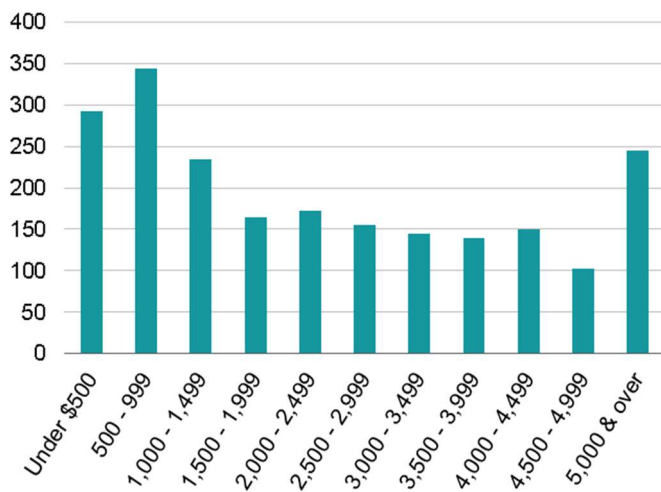
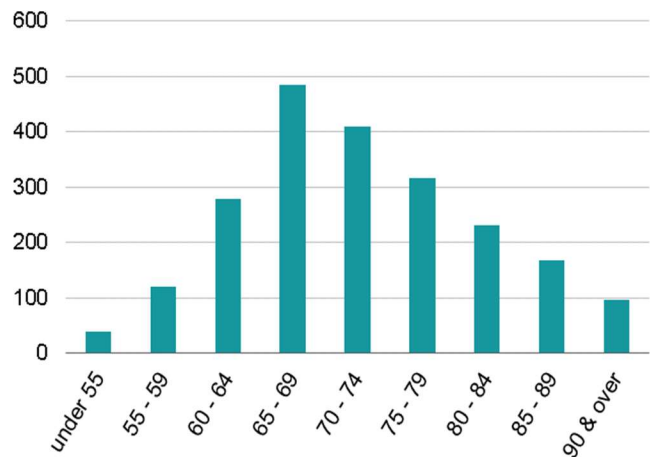


CHART 5

Distribution of Retirees by Age as of December 31, 2019



ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

B. FINANCIAL INFORMATION (Continued)

Both the actuarial value and fair value of assets are representations of the Fund's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the fair value of assets. The actuarial asset value is significant because the Fund's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the fair value over the past ten valuation dates.

CHART 7

Actuarial Value of Assets vs. Fair Value of Assets as of June 30, 2011 – December 31, 2019



ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

C. ACTUARIAL EXPERIENCE

To calculate the actuarially determined contribution requirement, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

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

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

The total loss is \$11,344,690: \$2,267,129 from investment losses and \$9,077,561 in losses from all other sources. The net experience variation from individual sources other than investments was 0.8% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

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

CHART 8

Actuarial Experience for Year Ended December 31, 2019

1. Net loss from investments*	(\$2,267,129)
2. Net gain from administrative expenses	30,300
3. Net loss from other experience**	<u>(9,107,861)</u>
4. Net experience loss: (1) + (2) + (3)	(\$11,344,690)

* Details in Chart 9.

** Details in Chart 12.

ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

C. ACTUARIAL EXPERIENCE (Continued)

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Fund's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets for the year ended December 31, 2019 was 7.25%. The actual rate of return on an actuarial basis for the year ended December 31, 2019, was 6.60%.

Since the actual return for the year was less than the assumed return, the Fund experienced an actuarial loss during the fiscal year ended December 31, 2019, with regard to its investments.

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

CHART 9

Actuarial Value Investment Experience for Year Ended December 31, 2019

1. Actual return	\$22,886,057
2. Average value of assets	346,940,491
3. Actual rate of return: (1) ÷ (2)	6.60%
4. Assumed rate of return	7.25%
5. Expected return: (2) x (4)	\$25,153,186
6. Actuarial loss: (1) – (5)	<u>(\$2,267,129)</u>

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the fair value investment return for the last ten valuation years, including five-year and ten-year averages.

CHART 10

Investment Return

<u>Fiscal Year Ended</u>	<u>Fair Value</u>	<u>Actuarial Value</u>
June 30, 2011	21.0%	3.1%
June 30, 2012	0.9%*	-0.6%*
December 31, 2012	6.3%*	1.0%*
December 31, 2013	16.9%**	6.5%*
December 31, 2014	6.9%**	10.4%*
December 31, 2015	1.9%**	8.2%*
December 31, 2016	8.4%**	8.0%*
December 31, 2017	14.2%**	10.0%*
December 31, 2018	-5.1%**	5.4%*
December 31, 2019	17.0%**	6.6%*
Average Returns		
Last 5 valuation years:	7.0%	7.6%
Last 10 valuation years:	9.0%	6.1%

* As determined by Segal

** As determined by Investment Consultant

ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

C. ACTUARIAL EXPERIENCE (Continued)

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the fair value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling the actuarially required contribution.

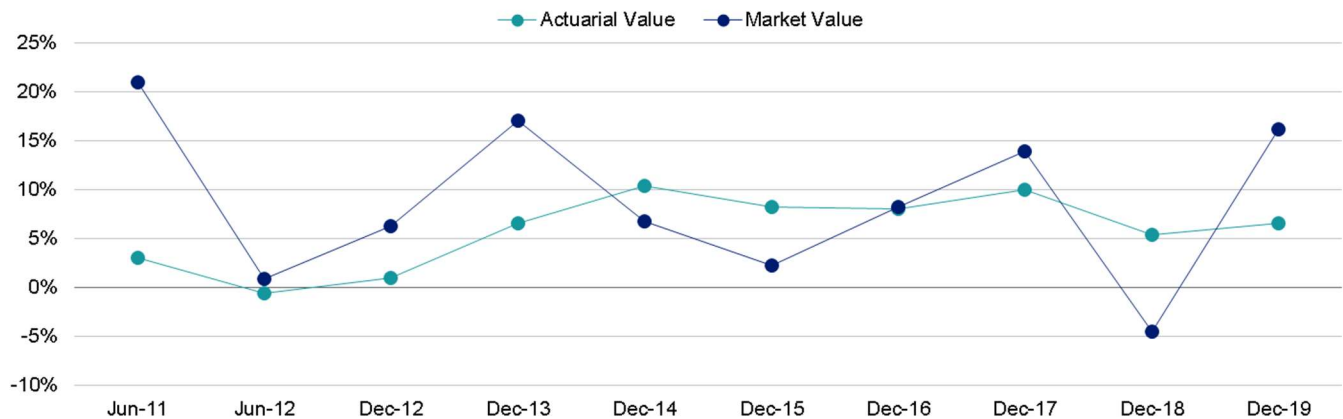
Administrative Expenses

Administrative expenses for the year ended December 31, 2019 totaled \$1,528,861 compared to the assumption of \$1,504,833. This resulted in a gain of \$30,300 for the year when adjusted for timing.

This chart illustrates how this leveling effect has actually worked over the years 2011 - 2019.

CHART 11

Fair and Actuarial Rates of Return for Years Ended June 30, 2011 - December 31, 2019



ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

C. ACTUARIAL EXPERIENCE (Continued)

Other Experience

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

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

The net loss from this other experience for the year ended December 31, 2019, amounted to \$9,107,861, which is 0.8% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Fund for the year ended December 31, 2019 is shown in the chart below.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 12

Experience Due to Changes in Demographics for Year Ended December 31, 2019

1. Turnover	-\$3,357,600
2. Retirement	-2,030,016
3. Experience among retired members and beneficiaries related to mortality	4,163,599
4. Salary/service increase for continuing actives	-5,919,254
5. Other	<u>-1,964,590</u>
6. Total	<u><u>-\$9,107,861</u></u>

ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

D. DEVELOPMENT OF EMPLOYER COSTS

At the discretion of the Board, the actuarial valuation includes the calculation of a funding policy benchmark contribution amount referred to as the actuarially determined contribution. The amount of actuarially determined contribution is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution of 47.37% of payroll.

The actuarially determined contribution is calculated on a level percentage of pay basis and is based on a closed 30-year period, which ends on December 31, 2042. As of January 1, 2020, there are 23 years remaining on the amortization period.

The chart compares this valuation's actuarially determined contribution with the prior valuation.

CHART 13

Actuarially Determined Contribution

	Year Beginning January 1			
	2020		2019	
	<u>Amount</u>	<u>% of Payroll</u>	<u>Amount</u>	<u>% of Payroll</u>
1. Total normal cost	\$17,626,255	12.41%	\$16,447,693	12.07%
2. Administrative expenses	1,532,725	1.08%	1,504,833	1.10%
3. Expected employee contributions	<u>-12,922,180</u>	<u>-9.10%</u>	<u>-12,398,408</u>	<u>-9.10%</u>
4. Employer normal cost: (1) + (2) + (3)	6,236,800	4.39%	5,554,118	4.08%
5. Employer normal cost, adjusted for timing*	6,457,619	4.55%	5,750,767	4.22%
6. Actuarial accrued liability	1,170,602,980		1,142,297,965	
7. Actuarial value of assets	<u>349,960,428</u>		<u>366,806,612</u>	
8. Unfunded actuarial accrued liability: (6) – (7)	820,642,552		775,491,353	
9. Payment on unfunded actuarial accrued liability	60,839,593	42.82%	56,137,023	41.21%
10. Actuarially determined contribution, adjusted for timing*: (5) + (9)	<u>67,297,212</u>	<u>47.37%</u>	<u>61,887,790</u>	<u>45.43%</u>
11. Projected payroll	\$142,076,419		\$136,230,328	

* Recommended contributions are assumed to be paid at the middle of every month.

ACTUARIAL

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

D. DEVELOPMENT OF EMPLOYER COSTS (Continued)

The actuarially determined contribution as of January 1, 2020, is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

The chart reconciles the actuarially determined contribution from the prior valuation to the amount determined in this valuation.

CHART 14

Reconciliation of Actuarially Determined Contribution from January 1, 2019 to January 1, 2020

Actuarially Determined Contribution as of January 1, 2019	\$61,887,790
Effect of expected change in amortization payment due to payroll growth	1,403,425
Effect of change in administrative expense assumption	28,880
Effect of change in other actuarial assumptions	0
Effect of contributions less than recommended contribution	2,531,691
Effect of investment losses	160,633
Effect of other gains and losses on accrued liability	643,173
Effect of net other changes	<u>641,620</u>
Total change	<u>\$5,409,422</u>
Actuarially Determined Contribution as of January 1, 2020	\$67,297,212

SECTION 2: Valuation Results for the Park Employees' Annuity and Benefit of Chicago (Continued)

E. RISK

Since the actuarial valuation results are dependent on a given set of assumptions and data as of a specific date, there is a risk that emerging results may differ significantly as actual experience differs from the assumptions.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a brief discussion of some risks that may affect the Fund. Upon request, a more detailed assessment of the risks can be provided to enable a better understanding of the risks specific to this Fund.

Investment Risk

Since the Plan's assets are much larger than contributions, investment performance may create significant volatility in contribution requirements. For example, if the actual return on the market value of assets for the next Plan Year were 1% different from the assumed (either higher or lower), the projected unfunded actuarial liability would change by 0.1%, or about \$0.8 million and the actuarially determined contribution requirements would increase or decrease by approximately \$0.6 million. The market value rate of return over the last 10 years has ranged from a low of -5.1% to a high of 21.0%, with an average of 9.0%. A market value rate of return of 1.3% during 2020 would move projected insolvency into 2026.

Longevity Risk

The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the Plan's funding policy and actuarially determined contribution requirement.

Contribution Risk

The Plan's funding policy contribution requires payment of the Employer's normal cost and an amortization payment according to a schedule sufficient to pay down unfunded actuarial liability over time. If the Plan's funding policy contribution were adhered to, contribution risk would be negligible.

However, Plan contributions are set by statute. The statutorily-required amount systematically underfunds the Plan. For Fiscal 2020, actual employer contributions come from a property tax levied by the Chicago Park District equal to the total amount of contributions made by employees in the calendar year two years prior to the year of the levy, multiplied by 1.1, the tax multiple.

If contributions remain at current level and future experience matches the current assumptions, we project the unfunded actuarial accrued liability will not be paid off and the Fund will become insolvent.

Demographic Risk

Examples of this risk include:

- Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.
- More or less active participant turnover than assumed.
- Individual salary increases higher or lower than assumed.

Actual Experience Over the Last 10 years and Implications for the Future

Past experience can help demonstrate the sensitivity of key results to the Plan's actual experience. Over the past ten years:

- The investment gain/(loss) for a year has ranged from a gain of \$45 million to a loss of \$44 million.
- The non-investment gain/(loss) for a year has ranged from a gain of \$5 million to a loss of \$9 million.
- The funded percentage on the actuarial value of assets has ranged from a low of 29.90% to a high of 62.25%.

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SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago

EXHIBIT A

Table of Fund Coverage

<u>Category</u>	December 31		Change From Prior Year
	2019	2018	
Active members in valuation:			
Number	3,132	3,187	-1.7%
Average age	41.8	41.5	+0.3
Average years of service	10.0	9.9	+0.1
Total salary provided by the Fund	\$136,105,381	\$129,923,175	4.8%
Average salary	\$43,456	\$40,767	+6.6%
Total active vested members with at least 10 years of service	1,264	1,271	-0.6%
Vested terminated members	147	145	1.4%
Non-vested terminated members eligible for a return of contributions	4,756	4,634	+2.6%
Service retirees:			
Number in pay status	2,144	2,136	+0.4%
Average age	72.3	72.2	+0.1
Average monthly benefit	\$2,484	\$2,441	+1.8%
Beneficiaries (including children) in pay status:			
Number in pay status	699	718	-2.6%
Average age	78.1	78.0	+0.1
Average monthly benefit	\$1,403	\$1,364	+2.9%
Total number of members	10,878	10,820	+0.5%

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT B

Participants in Active Service as of December 31, 2019
By Age, Years of Service, and Average Payroll provided by the Fund

Age	Years of Service									
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	479	473	6	-	-	-	-	-	-	-
	\$19,056	\$18,910	\$30,535	-	-	-	-	-	-	-
25 – 29	401	269	125	7	-	-	-	-	-	-
	31,655	29,401	35,883	\$42,753	-	-	-	-	-	-
30 – 34	318	134	110	66	8	-	-	-	-	-
	40,454	35,158	47,044	38,991	\$50,630	-	-	-	-	-
35 – 39	298	103	53	71	59	12	-	-	-	-
	49,345	42,409	53,655	53,230	52,062	\$53,510	-	-	-	-
40 – 44	275	99	59	49	23	41	4	-	-	-
	52,631	33,711	71,796	54,161	68,443	58,980	\$63,513	-	-	-
45 – 49	309	91	42	55	36	59	26	-	-	-
	56,018	38,781	59,418	57,830	76,137	63,211	62,839	-	-	-
50 – 54	361	76	37	52	59	70	46	20	1	-
	52,112	32,615	47,703	46,874	56,797	63,571	63,552	\$65,846	\$89,917	-
55 – 59	310	72	41	35	31	69	25	30	6	1
	53,638	39,768	42,953	42,682	62,850	57,006	78,424	72,582	74,236	\$44,224
60 – 64	229	42	29	30	32	39	22	14	15	6
	50,616	32,256	47,808	43,639	52,452	55,974	58,670	60,795	75,762	66,853
65 – 69	111	18	10	18	13	23	11	12	2	4
	54,849	38,738	31,373	50,825	53,547	59,133	86,805	65,817	52,099	64,331
70 & over	41	1	7	4	4	11	3	3	4	4
	44,197	16,690	19,505	39,582	54,693	51,624	43,712	61,196	52,467	47,330
Total	3,132	1,378	519	387	265	324	137	79	28	15
	\$43,456	\$29,180	\$47,748	\$48,579	\$59,187	\$59,519	\$66,778	\$67,328	\$70,922	\$59,466

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT C

History of Active Member Valuation Data

Actuarial Valuation Date	Active Members	Percent Increase	Annual Salaries	Percent Increase	Average Salary	Percent Increase
06/30/2011	2,795	(0.75%)	107,686,693	0.30%	38,528	1.06%
06/30/2012	2,977	6.51%	109,798,508	1.96%	36,882	(4.27%)
12/31/2012	3,053	2.55%	113,934,756*	3.77%	37,319	1.18%
12/31/2013	3,076	0.75%	115,617,428	1.48%	37,587	0.72%
12/31/2014	2,973	(3.35%)	120,376,477	4.12%	40,490	7.72%
12/31/2015	3,063	3.03%	126,294,812	4.92%	41,232	1.83%
12/31/2016	3,114	1.67%	124,502,908	(1.42%)	39,982	(3.03%)
12/31/2017	3,543	13.78%	134,258,328	7.84%	37,894	(5.22%)
12/31/2018	3,187	(10.05%)	129,923,175	(3.23%)	40,767	7.58%
12/31/2019	3,132	(1.73%)	136,105,381	4.76%	43,456	6.60%
Average Increase/(Decrease)						
Last 5 years		1.34%		2.57%		1.55%
Last 10 years		1.24%		2.45%		1.42%

* Annualized for short plan year.

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT D

Reconciliation of Member Data

	Active Members	Inactive Members	Retirees	Beneficiaries	Total
Number as of December 31, 2018	3,187	4,779	2,136	718	10,820
New participants	320	N/A	N/A	N/A	320
Terminations	(201)	201	0	0	0
Retirements	(61)	(32)	93	N/A	0
New disabilities	0	0	N/A	N/A	0
Died with beneficiary	(1)	0	(37)	38	0
Died without beneficiary	(1)	(1)	(48)	(57)	(107)
Refunds	(132)	(33)	0	0	(165)
Rehire	21	(21)	0	0	0
Data adjustments	<u>0</u>	<u>10</u>	<u>0</u>	<u>0</u>	<u>10</u>
Number as of December 31, 2019	3,132	4,903	2,144	699	10,878

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT E

Schedule of Pensioners and Beneficiaries Added to and Removed from Rolls

Fiscal Year	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>Rolls – End of Year</u>		% Increase in Avg. Annual Allowances	Average Annual Allowances
	<u>Number</u>	<u>Annual Allowances</u>	<u>Number</u>	<u>Annual Allowances</u>	<u>Number*</u>	<u>Annual Allowances</u>		
2011	124	3,735,377	167	2,828,495	2,899	62,096,472	3.0	21,420
6/2012	167	4,681,195	158	2,797,326	2,908	63,980,341	2.7	22,001
12/2012	71	2,470,960	91**	1,290,060	2,888	65,161,241	2.6	22,563
12/2013	147	4,594,883	147	2,788,285	2,888	66,967,839	2.8	23,188
12/2014	126	4,085,581	138	2,781,597	2,876	68,271,823	2.4	23,738
12/2015	94	1,823,238	106	2,271,591	2,864	67,823,470	-0.7	23,681
12/2016	126	5,283,834	133	2,711,190	2,857	70,396,114	4.0	24,640
12/2017	107	3,628,199	104	1,952,677	2,860	72,071,636	2.3	25,200
12/2018	135	5,446,939	153	2,967,901	2,842	74,550,674	4.1	26,232
12/2019	128	4,578,087	140	3,174,168	2,830	75,954,593	2.3	26,839

* Does not include child beneficiaries receiving a pension.

** Includes removal of 20 QILDROs for participant count purposes.

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT F

Summary Statement of Income and Expenses on a Fair Value Basis at Fiscal Year Ended December 31

	2019	2018
Net position at fair value at the beginning of the year	\$342,255,873	\$397,648,758
Contribution income:		
Employer contributions	\$27,682,089	\$27,638,402
Employee contributions	12,664,855	12,125,457
Less administrative expenses	<u>-1,528,861</u>	<u>-1,501,039</u>
Net contribution income	38,818,083	38,262,820
Securities lending income	50,111	67,760
Other income	125	167
Investment income:		
Interest, dividends and other income	\$6,785,122	\$12,194,461
Asset appreciation	46,929,814	-27,559,554
Less investment and administrative fees	<u>-1,732,391</u>	<u>-1,831,719</u>
Net investment income	<u>51,982,545</u>	<u>-17,196,812</u>
Total income available for benefits	\$90,850,864	\$21,133,935
Less benefit payments:		
Annuity payments	-\$75,850,465	-\$73,303,464
Disability & death	-615,546	-497,389
Refund of contributions	-2,084,438	-2,725,967
Refund of excess contributions	<u>0</u>	<u>0</u>
Net benefit payments	-\$78,550,449	-\$76,526,820
Change in reserve for future benefits	\$12,300,415	-\$55,392,885
Net position at fair value at the end of the year	\$354,556,288	\$342,255,873

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT G

Summary Statement of Fund Assets at Fiscal Year Ended December 31

	2019	2018
Accounts receivable	\$15,987,449	\$16,127,092
Investments, at fair value:		
Collective investment funds	\$81,295,724	\$72,315,985
Risk parity	0	1,348,182
Bonds	59,247,177	61,043,992
Common and preferred stocks	43,787,794	45,332,504
Real estate	37,047,140	37,225,201
Private equity partnerships	18,031,007	19,232,200
Hedged equity	24,807,129	24,437,510
Infrastructure	24,353,479	22,774,008
Mutual funds	19,208,421	15,420,085
International equity	21,776,682	18,093,650
Short-term investments	<u>4,784,370</u>	<u>6,181,608</u>
Total investments at fair value	334,338,923	323,404,925
Invested securities lending collateral	19,769,592	24,113,674
Prepaid annuity benefits	5,252,036	5,061,599
Furniture and fixtures, net	145,461	138,555
Prepaid expenses	<u>53,866</u>	<u>80,359</u>
Total assets	\$375,547,327	\$368,926,204
Less accounts payable:		
Accounts payable	-\$348,273	-\$418,365
Accrued benefits and member contributions payable	-568,215	-588,867
Securities lending collateral	-19,769,592	-24,113,674
Due to broker	-257,794	-1,494,289
Deferred rent	<u>-47,165</u>	<u>-55,136</u>
Total accounts payable	-\$20,991,039	-\$26,670,331
Net position at fair value	<u>\$354,556,288</u>	<u>\$342,255,873</u>
Net position at actuarial value	<u>\$349,960,428</u>	<u>\$366,806,612</u>

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT H

Development of the Fund Through December 31, 2019

Fiscal Year Ended	Employer Contributions	Employee Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
June 30, 2011	\$10,981,419	\$9,791,650	\$15,218,630	\$1,498,905	\$63,704,890	\$489,370,505
June 30, 2012	10,868,361	10,404,827	-2,804,426	1,644,603	65,502,658	440,692,006
December 31, 2012	5,268,363	5,371,084	4,121,362	723,802	33,281,012	421,448,001
December 31, 2013	15,707,814	10,732,730	26,107,300	1,367,443	68,335,967	404,292,435
December 31, 2014	11,225,438	10,831,434	39,408,258	1,458,831	70,536,042	393,762,692
December 31, 2015	30,588,976	12,368,636	31,067,518	1,533,700	70,602,016	395,652,106
December 31, 2016	30,890,241	12,246,115	30,432,110	1,537,699	74,077,876	393,604,997
December 31, 2017	20,920,614	13,675,292	37,038,766	1,682,136	78,138,027	385,419,506
December 31, 2018	27,638,402	12,125,457	19,651,105	1,501,039	76,526,820	366,806,612
December 31, 2019	27,682,089	12,664,855	22,886,182	1,528,861	78,550,449	349,960,428

* On an actuarial basis, net of investment fees, and includes other income.

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT I

Development of Unfunded Actuarial Accrued Liability

	<u>Plan Year Ended December 31</u>	
	2019	2018
1. Unfunded actuarial accrued liability at beginning of year	\$775,491,353	\$653,859,938
2. Normal cost (including administrative expenses) at beginning of year	17,952,526	17,253,792
3. Total contributions	40,346,944	39,763,859
4. Interest		
(a) Unfunded actuarial accrued liability and normal cost	\$57,524,681	\$50,333,530
(b) Total contributions	<u>1,323,754</u>	<u>1,349,035</u>
(c) Total interest: (4a) – (4b)	<u>56,200,927</u>	<u>48,984,495</u>
5. Expected unfunded actuarial accrued liability: (1) + (2) – (3) + (4c)	\$809,297,862	\$680,334,366
6. Changes due to (gain)/loss from:		
(a) Investments	\$2,267,129	\$7,820,631
(b) Demographics and other	<u>9,077,561</u>	<u>3,354,696</u>
(c) Total changes due to (gain)/loss: (6a) + (6b)	\$11,344,690	\$11,175,327
7. Assumption changes	0	83,981,660
8. Unfunded accrued liability at end of year: (5) + (6c) + (7)	<u>\$820,642,552</u>	<u>\$775,491,353</u>

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT J

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability

For Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability

For Pensioners:

The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Actuarial Cost Method:

A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.

Actuarial Gain or Actuarial Loss:

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent:

Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV):

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is:

- a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)
- b. Multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
- c. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT J

Definitions of Pension Terms (Continued)

Actuarial Present Value of Future Plan Benefits:

The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation:

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).

Actuarial Value of Assets:

The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined:

Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC):

The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Fund's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method:

A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment:

The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT J

Definitions of Pension Terms (Continued)

Assumptions or Actuarial

Assumptions:

The estimates on which the cost of the Fund is calculated including:

- (a) Investment return - the rate of investment yield that the Fund will earn over the long-term future;
- (b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates - the rate or probability of retirement at a given age;
- (d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;
- (e) Salary increase rates - the rates of salary increase due to inflation and productivity growth.

Closed Amortization Period:

A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.

Decrements:

Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan:

A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan:

A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost:

The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study:

A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio:

The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the fair value of assets (MVA), rather than the AVA.

GASB:

Governmental Accounting Standards Board.

ACTUARIAL

SECTION 3: Supplemental Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT J

Definitions of Pension Terms (Continued)

GASB 67 and GASB 68:	Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment Return:	The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
Plan Fiduciary Net Position:	Fair value of assets.
Total Pension Liability (TPL):	The actuarially accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago

EXHIBIT I

Summary of Actuarial Valuation Results

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

1. Pensioners as of the valuation date (including 686 beneficiaries and 13 dependent children)	2,843
2. Members inactive as of the valuation date with vested rights	147
3. Members active as of the valuation date	3,132
Fully vested	1,264
Not vested	1,868
4. Other non-vested inactive members as of the valuation date	4,756

The actuarial factors as of the valuation date are as follows:

1. Employer normal cost, including administrative expenses	\$6,236,800
2. Actuarial accrued liability	1,170,602,980
Retirees and beneficiaries	\$789,231,586
Inactive members with vested rights	23,490,893
Active members	357,880,501
3. Actuarial value of assets (\$354,556,288 at fair value)	349,960,428
4. Unfunded actuarial accrued liability: (2) – (3)	<u>\$820,642,552</u>
5. Funded ratio: (3) ÷ (2)	29.9%

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT I (continued)

Actuarially Determined Contribution Split by Tier

	Total		Tier I		Tier II	
	Amount	% of Payroll	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$17,626,255	12.41%	\$12,348,845	14.24%	\$4,450,384	8.99%
2. Administrative expenses*	1,532,725	1.08%	1,514,430	1.75%	18,295	0.02%
3. Expected employee contributions	<u>-12,922,180</u>	<u>-9.10%</u>	<u>-7,872,843</u>	<u>-9.08%</u>	<u>-4,523,189</u>	<u>-9.14%</u>
4. Employer normal cost: (1) + (2) + (3)	\$6,236,800	4.39%	\$5,990,432	6.91%	-\$54,510	-0.11%
5. Employer normal cost, adjusted for timing**	6,457,620	4.55%	6,202,528	7.15%	-56,440	-0.11%
6. Actuarial accrued liability	1,170,602,980		1,156,630,636		13,972,344	
7. Actuarial value of assets	<u>349,960,428</u>					
8. Unfunded actuarial accrued liability: (6) - (7)	820,642,552					
9. Payment on unfunded actuarial accrued liability	60,839,593	42.82%				
10. Actuarially determined contribution, adjusted for timing**: (5) + (9)	<u>\$67,297,212</u>	<u>47.37%</u>				
11. Estimated employer contributions provided by the Fund, reflecting 3% loss on collections***	\$12,757,896					
12. Projected payroll	142,076,419		86,715,716		49,514,612	

* Administrative expenses are split by % of accrued liability.

** Recommended contributions are assumed to be paid at the middle of every month.

*** The Park District has been absorbing the 3% loss on collections, however, the Park District is not guaranteed to do so in the future.

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT II

Comparison of Employer Contribution to Actuarially Determined Contribution

Fiscal Year Ended	Actuarially Determined Contribution (ADC)*	Actual Contributions	Percentage Contributed
June 30, 2011	\$25,319,145	\$10,981,419	43.4%
June 30, 2012	28,051,528	10,868,361	38.7%
December 31, 2012	16,786,671	5,268,636	31.4%
December 31, 2013	41,834,857	15,707,814	37.5%
December 31, 2014	35,307,186	11,225,438	31.8%
December 31, 2015	36,273,994	30,588,976	84.3%
December 31, 2016	37,130,268	30,890,241	83.2%
December 31, 2017	45,253,238	20,920,614	46.2%
December 31, 2018	50,929,734	27,638,402	54.3%
December 31, 2019	61,887,790	27,682,089	44.7%
December 31, 2020	67,297,212	--	--

* Prior to 2015, this amount was the Annual Required Contribution (ARC)

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT III

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll* [(b) - (a)] / (c)
06/30/2011	\$489,370,505	\$843,943,240	\$354,572,735	57.99%	\$107,686,693	329.26%
06/30/2012	440,692,006	866,370,565	425,678,559	50.87%	114,223,909	372.67%
12/31/2012	421,448,001	971,807,222	550,359,221	43.37%	58,231,511	472.56%**
12/31/2013	404,292,435	888,023,364	483,730,929	45.53%	117,781,596	410.70%
12/31/2014	393,762,692	900,840,617	507,077,925	43.71%	118,987,507	426.16%
12/31/2015	395,652,106	910,260,360	514,608,254	43.47%	122,382,584	420.49%
12/31/2016	393,604,997	1,005,493,093	611,888,096	39.15%	121,126,918	505.16%
12/31/2017	385,419,506	1,039,279,444	653,859,938	37.09%	135,315,008	483.21%
12/31/2018	366,806,612	1,142,297,965	775,491,353	32.11%	133,112,100	582.59%
12/31/2019	349,960,428	1,170,602,980	820,642,552	29.90%	139,204,051	589.52%

* Not less than zero

** Adjusted for annualized covered payroll

EXHIBIT IV

Solvency Test at December 31

	12/31/2019	12/31/2018	12/31/2017	12/31/2016	12/31/2015	12/31/2014
1. Actuarial accrued liability (AAL)						
a. Active member contributions	\$173,843,745	\$164,316,381	\$173,903,043	\$172,808,623	\$173,241,768	\$169,952,178
b. Retirees and beneficiaries	789,231,586	778,565,525	706,084,520	694,881,116	625,396,307	625,641,580
c. Active and inactive members (employer financed)	<u>207,527,649</u>	<u>199,416,059</u>	<u>159,291,881</u>	<u>137,803,354</u>	<u>111,622,285</u>	<u>105,246,859</u>
d. Total	\$1,170,602,980	\$1,142,297,965	\$1,039,279,444	\$1,005,493,093	\$910,260,360	\$900,840,617
2. Actuarial value of assets	349,960,428	366,806,612	385,419,506	393,604,997	395,652,106	393,762,692
3. Cumulative portion of AAL covered						
a. Active member contribution	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
b. Retirees and beneficiaries	22.3%	26.0%	30.0%	31.8%	35.6%	35.8%
c. Active and inactive members (employer financed)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT V

Projection of Contributions, Liabilities, and Assets

Based on the results of the December 31, 2019, actuarial valuation, we have projected valuation results for a 40-year period commencing with Fiscal Year 2020.

For purposes of the projections, all assets, contributions, and benefit payments have been included. Our projections of contributions, liabilities, and assets are based on the actuarial assumptions, membership data and benefit provisions that were used for the regular actuarial valuation.

In order to determine projected contributions, liabilities, and assets, certain calculations needed to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, actuarial liabilities, and payroll were estimated over the 40-year period from 2020 through 2058 by projecting the membership of the Fund over the 40-year period, taking into account the impact of new entrants into the Fund over the 40-year period.

To make the required projections, assumptions needed to be made regarding the age and salary distribution of new entrants as well as the size of the active membership of the Fund. The assumptions regarding the profile of new entrants to the Fund were based on the recent experience of the Fund with regard to new entrants. The size of the active membership of the Fund was assumed to remain constant over the 40-year projection period. The results of our projections are shown on the following pages.

For purposes of this projection, we have assumed that all available assets, including accumulated contributions made by existing active members, will be used to pay benefits until insolvency; at that point, request for refund of contributions from terminating active members will be treated as benefit payments that must be funded by employer contributions. However, the legality of this situation is undetermined at this time, and if it is determined that the reserve for accumulated active member contributions cannot be paid to existing annuitants, the Fund would become insolvent earlier than 2027.

The fair value of assets is assumed to earn the assumption of 7.25% each year of the projection until the projected date of insolvency. In reality, as the insolvency date approaches, invested assets will likely be rebalanced into more liquid, lower return assets in order to pay the benefits that are due. To the extent that actual returns are less than the 7.25% assumption as a result of this rebalancing, the Fund would become insolvent earlier than 2027.

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT V (Continued)

Projection of Contributions, Liabilities, and Assets (Continued)

Fiscal Year	Employee Contributions	Employer Contributions	Payroll	Normal Cost	Benefit Payouts	Estimated Expenses	Total Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability	Funded Ratio
2019							\$1,170,603.0	\$349,960.4	\$820,642.6	29.9%
2020	\$12,922.2	\$12,757.9	\$142,076.4	\$17,626.3	\$81,582.0	\$1,582.4	1,189,836.5	317,469.4	872,367.1	26.7%
2021	12,727.3	13,513.4	139,911.4	17,380.9	82,724.0	1,637.8	1,209,018.0	281,496.4	927,521.6	23.3%
2022	12,636.0	13,788.0	138,896.8	17,255.5	83,917.7	1,695.1	1,228,218.7	237,171.9	991,046.7	19.3%
2023	12,567.4	13,580.1	138,134.0	17,129.8	85,274.4	1,754.4	1,247,270.6	196,883.8	1,050,386.8	15.8%
2024	12,523.0	13,482.6	137,640.7	16,955.5	86,729.6	1,815.8	1,266,009.0	146,589.0	1,119,420.0	11.6%
2025	12,492.7	13,409.4	137,304.6	16,786.9	88,268.3	1,879.4	1,284,330.5	90,819.2	1,193,511.2	7.1%
2026	12,470.4	13,362.0	137,056.9	16,610.9	89,835.5	1,945.1	1,302,167.5	29,198.8	1,272,968.8	2.2%
2027	12,445.6	51,904.8	136,780.6	16,397.4	91,535.9	2,013.2	1,319,306.8	0.0	1,319,306.8	0.0%
2028	12,428.8	83,055.2	136,594.5	16,202.8	93,400.3	2,083.7	1,335,548.0	0.0	1,335,548.0	0.0%
2029	12,409.4	84,950.7	136,379.1	15,878.8	95,203.6	2,156.6	1,350,750.5	0.0	1,350,750.5	0.0%
2030	12,401.7	86,963.0	136,293.5	15,698.8	97,132.6	2,232.1	1,364,863.2	0.0	1,364,863.2	0.0%
2031	12,396.5	89,010.7	136,235.0	15,515.8	99,096.9	2,310.2	1,377,767.3	0.0	1,377,767.3	0.0%
2032	12,399.1	90,931.9	136,264.8	15,313.9	100,940.0	2,391.1	1,389,480.5	0.0	1,389,480.5	0.0%
2033	12,415.2	92,766.3	136,442.8	15,115.3	102,706.7	2,474.8	1,399,999.1	0.0	1,399,999.1	0.0%
2034	12,446.2	94,613.7	136,788.2	14,921.3	104,498.6	2,561.4	1,409,215.5	0.0	1,409,215.5	0.0%
2035	12,474.7	96,122.8	137,104.1	14,721.1	105,946.4	2,651.0	1,417,385.0	0.0	1,417,385.0	0.0%
2036	12,530.0	97,790.6	137,719.2	14,548.7	107,576.8	2,743.8	1,424,272.5	0.0	1,424,272.5	0.0%
2037	12,569.6	96,909.8	138,159.1	14,355.1	106,639.6	2,839.8	1,432,422.8	0.0	1,432,422.8	0.0%
2038	12,629.5	98,168.6	138,824.6	14,176.5	107,858.9	2,939.2	1,439,708.9	0.0	1,439,708.9	0.0%
2039	12,695.9	99,043.2	139,561.6	14,004.8	108,696.9	3,042.1	1,446,470.8	0.0	1,446,470.8	0.0%
2040	12,788.7	99,687.4	140,593.7	13,867.6	109,327.5	3,148.6	1,452,922.3	0.0	1,452,922.3	0.0%
2041	12,894.7	100,071.6	141,771.0	13,744.9	109,707.5	3,258.8	1,459,316.1	0.0	1,459,316.1	0.0%
2042	13,023.8	100,117.5	143,205.2	13,676.3	109,768.4	3,372.8	1,466,036.9	0.0	1,466,036.9	0.0%
2043	13,173.7	99,771.9	144,870.8	13,608.9	109,454.6	3,490.9	1,473,497.7	0.0	1,473,497.7	0.0%
2044	13,348.2	99,178.1	146,809.9	13,600.1	108,913.2	3,613.1	1,482,051.1	0.0	1,482,051.1	0.0%
2045	13,540.4	98,210.5	148,945.0	13,624.6	108,011.3	3,739.5	1,492,185.5	0.0	1,492,185.5	0.0%
2046	13,760.7	97,148.8	151,393.2	13,691.2	107,039.1	3,870.4	1,504,133.6	0.0	1,504,133.6	0.0%
2047	13,990.5	96,022.6	153,946.3	13,789.2	106,007.2	4,005.9	1,518,122.3	0.0	1,518,122.3	0.0%
2048	14,230.4	94,818.8	156,612.5	13,906.5	104,903.1	4,146.1	1,534,395.0	0.0	1,534,395.0	0.0%
2049	14,484.5	93,533.3	159,435.5	14,044.1	103,726.6	4,291.2	1,553,214.2	0.0	1,553,214.2	0.0%
2050	14,746.5	91,920.8	162,346.7	14,201.3	102,226.0	4,441.4	1,575,121.5	0.0	1,575,121.5	0.0%
2051	15,037.8	90,549.2	165,583.8	14,400.6	100,990.2	4,596.8	1,600,111.3	0.0	1,600,111.3	0.0%
2052	15,332.3	89,323.2	168,855.2	14,616.2	99,897.7	4,757.7	1,628,276.2	0.0	1,628,276.2	0.0%
2053	15,628.7	88,101.2	172,149.3	14,841.5	98,805.7	4,924.2	1,659,856.4	0.0	1,659,856.4	0.0%
2054	15,941.3	86,801.5	175,622.1	15,081.0	97,646.2	5,096.6	1,695,184.4	0.0	1,695,184.4	0.0%
2055	16,271.1	85,408.5	179,286.5	15,341.2	96,404.6	5,275.0	1,734,639.4	0.0	1,734,639.4	0.0%
2056	16,619.8	84,322.0	183,161.4	15,639.6	95,482.3	5,459.6	1,778,230.8	0.0	1,778,230.8	0.0%
2057	16,980.4	83,061.2	187,167.2	15,952.4	94,390.9	5,650.7	1,826,448.9	0.0	1,826,448.9	0.0%
2058	17,364.4	82,009.0	191,434.4	16,304.5	93,524.9	5,848.5	1,879,437.8	0.0	1,879,437.8	0.0%

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT VI

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions: The information and analysis used in supporting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Review dated October 25, 2018. Current data is reviewed in conjunction with each annual valuation.

Mortality Rates:

Healthy Post-Retirement Mortality: 110% of PubG-2010 Healthy Annuitant Table, with mortality improvements projected generationally using scale MP-2017

Active Mortality: 110% of PubG-2010 Healthy Employee Table, with mortality improvements projected generationally using scale MP-2017

The mortality tables specified above were determined to contain provisions appropriate to reasonably reflect future mortality improvement, based on a review of mortality experience as of the most recent experience study rate.

Termination: Select and ultimate termination rates are based on recent experience of the Fund. Ultimate rates applicable for members with eight or more years of service are shown for sample ages in the table below. Select rates are as follows:

Years of Service	Rate (%)
0 - 0.99	17.5
1 - 1.99	13.0
2 - 2.99	13.0
3 - 3.99	12.5
4 - 4.99	12.5
5 - 5.99	10.0
6 - 6.99	10.0
7 - 7.99	10.0

Ultimate rates:

Age	Rate (%)
20	7.0
25	7.0
30	6.0
35	4.0
40	4.0
45	4.0
50	3.0
55	3.0

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT VI (Continued)

Actuarial Assumptions and Actuarial Cost Method (Continued)

Retirement Rates:

For employees first hired prior to January 1, 2011, rates of retirement for each age from 50 to 75 based on the recent experience of the Fund were used. Sample rates are shown below.

Age	Rate (%)	
	<30 Years of Service	30+ Years of Service
50	2.5	30.0
55	2.5	20.0
60	5.0	5.0
65	15.0	15.0
70	20.0	20.0
75	100.0	100.0

For employees first hired on or after January 1, 2011, rates of retirement for each age from 62 to 75 were used. Sample rates are shown below.

Age	Rate (%)
62	50.0
65	20.0
67	50.0
70	20.0
75	100.0

Salary Increases:

Assumed salary increases are based on the recent experience of the Fund were used. Rates are shown below.

Years of Service	Rate (%)
0 - 0.99	20.00
1 - 1.99	7.50
2 - 2.99	5.00
3 - 3.99	3.50
4 - 4.99	3.50
5+	2.75

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT VI (Continued)

Actuarial Assumptions and Actuarial Cost Method (Continued)

Valuation of Inactive

Vested Participants:

The liability for an inactive member is equal to his or her existing account balance, or, if the participant has at least 10 years of service, twice the existing account balance.

Unknown Data for Participants:

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

Spouses:

75% of participants were assumed to be married and females are assumed to be 2 years younger than males.

Disability Benefit Valuation:

Disability benefits are valued in normal cost by annualizing the actual monthly disability payment amounts for the month prior to the valuation date.

Investment Return:

7.25% per year, net of investment expenses

Inflation:

2.50% per year

Payroll Growth:

2.50% per year

Administrative Expenses:

Equal to actual expenses for the prior year, increased by 3.5%.

Actuarial Value of Assets:

The actuarial value of assets was determined by smoothing unexpected gains and losses over a period of 5 years. The gain or loss for a year is calculated as the total investment income on the fair value of assets, minus expected investment return on the prior actuarial value of assets. The final actuarial value is equal to the expected actuarial value plus (or minus) 20% of the calculated gain (or loss) in the prior 5 years.

Actuarial Cost Method:

Entry Age Normal. Under this method, a normal cost is calculated for each employee that is the level annual contribution as a percent of pay required to be made from the employee's date of hire for as long as he/she remains active so that sufficient assets will be accumulated to provide his/her benefit. The accrued liability is the difference between the present value of all future benefits and the present value of all future normal costs.

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT VII

Summary of Plan Provisions

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

Membership:	Any person employed by the Chicago Park District in a position requiring service for 6 months or more in a calendar year is required to become a member of the Fund as a condition of employment.
Employee Contributions:	All members of the Fund are required to contribute 9% of salary to the Fund as follows: 7% for the retirement pension, 1% for the spouse's pension, and 1% for the automatic increases in the retirement pension. In addition, employees are required to contribute \$3.60 per month toward the cost of the single sum death benefit.
Tiers:	Tier 1: First hired before January 1, 2011. Tier 2: First hired on or after January 1, 2011.
Retirement Pension:	<p>a. Eligibility – An employee may retire at age 50 with at least 10 years of service or at age 60 with 4 years of service. If retirement occurs before age 60, the retirement pension is reduced $\frac{1}{4}$ of 1% of each month that the age of the member is below 60. However, there is no reduction if the employee has at least 30 years of service.</p> <p>b. Amount – The retirement pension is based on the average of the 4 highest consecutive years of salary within the last 10 years. For an employee who withdraws from service on or after December 31, 2003, the amount of the retirement pension is 2.4% of highest average salary for each year of service.</p> <p>The maximum pension payable is 80% of the highest annual salary.</p> <p>An employee who was a participant before July 1, 1971 is entitled to the pension provided under the money purchase formula if it provides a greater pension than that provided under the above fixed benefit formula.</p> <p>An employee who first becomes a participant on or after January 1, 2011 is subject to the following provisions:</p> <ol style="list-style-type: none">1. The highest salary for annuity purposes is equal to the average monthly salary obtained by dividing the participant's total salary during the 96 consecutive months of service within the last 120 months of service in which the total compensation was the highest by the number of months in that period.2. For 2020, the annual salary is limited to \$115,928.92. Limitations for future years shall automatically be increased by the lesser of 3% or one-half the percentage change in the Consumer Price Index-U during the preceding calendar year.

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT VII (Continued)

Summary of Plan Provisions (Continued)

Retirement Pension: (Continued)

3. A participant is eligible to retire with unreduced benefits after attainment of age 67 with at least 10 years of service credit. However, a participant may elect to retire at age 62 with at least 10 years of service credit and receive a retirement annuity reduced by $\frac{1}{2}$ of 1% for each month that the age of the member is below 67.

Post-Retirement Increase:

An employee retiring at age 60 or over, or an employee with 30 or more years of service, is entitled to automatic annual increases of 3% of the originally granted pension following one year's receipt of pension payments. In the case of an employee with less than 30 years of service who retires before age 60, the increases begin following the later of attainment of age 60 and receipt of one year's pension payments.

Automatic annual increases (AAI) in the retirement annuity for employees who first became a participant on or after January 1, 2011 are equal to the lesser of 3% or one-half the annual change in the Consumer Price Index-U, whichever is less, based on the originally granted retirement annuity.

Surviving Spouse's Pension:

A surviving spouse is entitled to a pension upon the death of an employee while in service or on retirement. If the surviving spouse is age 60 or over and the employee or retiree had at least 20 years of service, the minimum surviving spouse's pension is 50% of the deceased employee's or retired employee's pension at the date of death. If the age of the surviving spouse is less than 60, the pension is reduced $\frac{1}{2}$ of 1% for each month the surviving spouse is under age 60. If the employee had less than 20 years of service, the surviving spouse is entitled to a pension under the money purchase formula, taking into account employee and employer contributions toward the surviving spouse's pension.

Surviving spouse's pensions are subject to annual increases of 3% per year based on the current amount of pension.

For employees who first become a participant on or after January 1, 2011, the initial survivor's annuity is equal to $66\frac{2}{3}\%$ of the participant's earned retirement annuity at the date of death, subject to automatic annual increases of the lesser of 3% or one-half of the increase in the Consumer Price Index-U during the preceding calendar year, based on the originally granted survivor's annuity.

Children's Pension:

Unmarried children of a deceased employee under the age of 18 are entitled to a children's pension. If either parent is living, the pension is \$100.00 per month. If no parent survives, the pension for each child is \$150.00 per month. The total amount payable to a spouse or children may not exceed 60% of the employee's final salary.

ACTUARIAL

SECTION 4: Reporting Information for the Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT VII (Continued)

Summary of Plan Provisions (Continued)

Single Sum Death Benefit:	<p>A death benefit is payable upon the death of an employee in service in addition to any other benefits payable to the surviving spouse or minor children. The death benefit payable is as follows:</p> <p>\$3,000 benefit during the first year of service, \$4,000 benefit during the second year of service, \$5,000 benefit during the third year of service, \$6,000 benefit during the fourth through ninth year of service, and \$10,000 benefit if death occurs after ten or more years of service.</p> <p>Upon the death of a retired member with ten or more years of service, the \$10,000 maximum benefit is reduced to \$6,000 if death occurs during the first year of retirement. Thereafter, it is reduced by \$1,500 for each year or fraction of a year while on retirement, but shall not be less than \$3,000.</p>
Ordinary Disability Benefit:	<p>An ordinary disability benefit is payable after eight consecutive days of absence for illness without pay. The amount of the benefit is 45% of salary. The benefit is payable for a period not to exceed $\frac{1}{4}$ of the length of service or five years, whichever is less.</p>
Occupational Disability Benefit:	<p>Upon disability resulting from an injury incurred while on duty, an employee is entitled to a disability benefit of 75% of salary from the first day of absence without pay. The benefit is payable during the period of disability until the employee attains age 65 if disability is incurred before age 60, or for a period of five years if disability is incurred after age 60.</p>
Occupational Death Benefit:	<p>Upon the death of an employee resulting from an accident incurred in the performance of duty, the surviving spouse is entitled to an occupational death benefit of 50% of salary. Each unmarried child under the age of 18 is entitled to a benefit of \$100 per month. The combined payments to a family may not exceed 75% of the employee's final salary. The total payments are reduced by Workmen's Compensation benefits.</p>
Refunds:	<p>An employee who terminates employment before qualifying for a pension is entitled to a refund of employee contributions. The refund is payable to any employee who withdraws before age 55, regardless of the length of service. It is also payable to an employee who withdraws between age 55 and 60 with less than 10 years of service, and to an employee who withdraws after age 60 with less than 5 years of service. An employee who is unmarried at date of retirement is entitled to a refund of the full amount contributed for the spouse's pension, without interest.</p>
Plan Year:	<p>January 1 through December 31. Prior to December 31, 2012, the plan year was July 1 through June 30.</p>
Employer Contributions:	<p>The tax multiple is 1.1 for 2020 and thereafter.</p>

ACTUARIAL

SECTION 5: GASB Information for Park Employees' Annuity and Benefit Fund of Chicago

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Fund at December 31, 2019 were as follows:

Total pension liability	\$2,046,085,330
Plan fiduciary net position	354,556,288
Net pension liability	1,691,529,042
Plan fiduciary net position as a percentage of the total pension liability	17.33%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	Service-based ranging from 20% to 2.75%
Single equivalent discount rate	2.84%, net of pension plan investment expense, including inflation
Cost of living adjustments	3% of original benefit for employees who first became a participant before January 1, 2011; the lesser of 3% and ½ of CPI of original benefit for employees and beneficiaries of employees who first became a participant on or after January 1, 2011; 3% compounded for beneficiaries of employees who first became a participant by January 1, 2011.

For healthy annuitants, mortality rates were based on the 110% of PubG-2010 Healthy Annuitant Table, with mortality improvements projected generationally using scale MP-2017. For active participants, mortality rates were based on 110% of PubG-2010 Healthy Employee Table, with mortality improvements projected generationally using scale MP-2017.

The actuarial assumptions used in the December 31, 2019, valuation were based on the results of an experience study for the five-year period ending December 31, 2018.

Discount rate: The discount rate used to measure the total pension liability was 2.84%. The projection of cash flows used to determine the discount rate assumed member contributions will be made at the 9% contribution rate for 2020 and thereafter. Employer contributions will be made at the 1.1 multiple of member contributions from two years prior for 2020 and thereafter. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the pension plan's fiduciary net position was not projected to be available to make all projected future benefit payments of current plan members. The projected benefit payments through 2025 were discounted at the expected long-term rate of return (7.25%). Starting in 2026, the projected benefit payments were discounted at the municipal bond index (2.74%, based on the Bond Buyer 20-GO Municipal Bond Index as of December 26, 2019). Therefore, a single equivalent, blended discount rate of 2.84% was calculated using the long-term expected rate of return and the municipal bond index

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the Fund, calculated using the discount rate of 2.84%, as well as what the Fund's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (1.84%) or 1-percentage-point higher (3.84%) than the current rate:

	1% Decrease (1.84%)	Current Discount Rate (2.84%)	1% Increase (3.84%)
Net pension liability as of December 31, 2019	\$2,031,154,003	\$1,691,529,042	\$1,418,852,853

ACTUARIAL

SECTION 5: GASB Information for Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT 2

Schedule of Changes in Net Pension Liability

	2019	2018
Total pension liability		
Service cost	\$33,317,058	\$38,102,341
Interest	69,086,515	59,290,982
Change of benefit term	0	0
Differences between expected and actual experience	15,529,818	5,001,084
Changes of assumptions	359,734,367	-3,471,090
Benefit payments, including refunds of employee contributions	<u>-78,550,449</u>	<u>-76,526,820</u>
Net change in total pension liability	399,117,309	22,396,497
Total pension liability – beginning	<u>1,646,968,021</u>	<u>1,624,571,524</u>
Total pension liability – ending (a)	<u>2,046,085,330</u>	<u>1,646,968,021</u>
Plan fiduciary net position		
Contributions – employer	27,682,089	27,638,402
Contributions – employee	12,664,855	12,125,457
Net investment income	51,982,545	-17,196,812
Benefit payments, including refunds of employee contributions	-78,550,449	-76,526,820
Administrative expense	-1,528,861	-1,501,039
Other	<u>50,236</u>	<u>67,927</u>
Net change in plan fiduciary net position	12,300,415	-55,392,885
Plan fiduciary net position – beginning	<u>342,255,873</u>	<u>397,648,758</u>
Plan fiduciary net position – ending (b)	354,556,288	342,255,873
Fund's net pension liability – ending (a) – (b)	<u>1,691,529,042</u>	<u>1,304,712,148</u>
Plan fiduciary net position as a percentage of the total pension liability	17.33%	20.78%
Covered employee payroll	\$139,204,051	\$133,112,100
Fund's net pension liability as percentage of covered employee payroll	1,215.14%	980.16%

ACTUARIAL

SECTION 5: GASB Information for Park Employees' Annuity and Benefit Fund of Chicago (Continued)

EXHIBIT 3

Schedule of Employer Contribution – Last Ten Fiscal Years

Fiscal Year Ended	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
June 30, 2011	\$25,319,145	\$10,981,419	\$14,337,726	\$107,686,693	10.20%
June 30, 2012	28,051,528	10,868,361	17,183,167	114,223,909	9.51%
December 31, 2012	16,786,671	5,268,363	11,518,308	58,231,511	9.05%
December 31, 2013	41,834,857	15,707,814	26,127,043	117,781,596	13.34%
December 31, 2014	35,307,186	11,225,438	24,081,748	118,987,507	9.43%
December 31, 2015	36,273,994	30,588,976	5,685,018	122,382,584	24.99%
December 31, 2016	37,130,268	30,890,241	6,240,027	121,126,918	25.50%
December 31, 2017	45,253,238	20,920,614	24,332,624	135,315,008	15.46%
December 31, 2018	50,929,734	27,638,402	23,291,332	133,112,100	20.76%
December 31, 2019	61,887,790	27,682,089	34,205,701	139,204,051	19.89%

ACTUARIAL

SECTION 5: GASB Information for Park Employees' Annuity and Benefit Fund of Chicago (Continued)

Notes to EXHIBIT 3

Valuation date

Actuarially determined contribution amount is determined as of December 31, with appropriate interest to the middle of the year.

Methods and assumptions used to establish "actuarially determined contribution" for the fiscal year ended December 31, 2019:

Actuarial cost method	Entry Age Actuarial cost method
Amortization method	23-year closed, level percentage of payroll amortization
Asset valuation method	5-year smoothed market

Actuarial assumptions:

Investment rate of return	7.25%, net of investment expense
Projected salary increases	Service-based ranging from 20% to 2.75%
Mortality	For healthy annuitants, mortality rates were based on 110% of PubG-2010 Healthy Annuitant Table, with mortality improvements projected generationally using scale MP-2017. For active participants, mortality rates were based on 110% of PubG-2010 Healthy Employee Table, with mortality improvements projected generationally using scale MP-2017.
Cost of living adjustments	3% of original benefit for employees who first became a participant before January 1, 2011; the lesser of 3% and 1/2 of CPI of original benefit for employees and beneficiaries of employees who first became a participant on or after January 1, 2011; 3% compounded for beneficiaries of employees who first became a participant by January 1, 2011.

Other assumptions:

Same as those used in the December 31, 2019, actuarial funding valuations based on the results of an experience study for the five-year period ending December 31, 2018.

Statistical Section Overview

The information in this section is not covered by the Independent Auditor’s Report but is presented as supplemental data for the benefit of the readers of the Comprehensive Annual Financial Report. The objectives of the statistical section information are to provide financial statement users with additional historical perspective, context, and detail to assist in using the financial statements, notes to financial statements, and required supplementary information, to better understand and assess the Fund’s overall financial health.

Contents

Membership Statistics	
These schedules provide financial data regarding the Fund’s members.	102-115
Other Financial Data	
These schedules provide additional information regarding members as well as data regarding refunds and disability.	116-117
GASB No. 44	
Additional schedules to address the requirements defined by GASB No. 44.	118-120

STATISTICAL

MEMBERSHIP STATISTICS

	<u>December 31, 2019</u>	<u>December 31, 2018</u>
Active participants	3,132	3,187
Retired employees' - annuities	2,144	2,136
Surviving spouses' - annuities	686	706
Children - annuities	13	12
Retirements granted during the year	93	102
New members	320	421
Withdrawals with refund	165	182

The above schedule provides details about the changes in the number of active participants, as well as the changes in the number and type of annuitants for the year.

STATISTICAL

**Active Members and Total Annual Salaries by Age
for the year ended December 31, 2019**

Table I

<u>Age at 12/31/19</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>
18	-	\$ -	3	\$ 8,692	3	\$ 8,692
19	15	143,875	17	140,130	32	284,005
20	29	461,426	31	349,619	60	811,045
21	46	813,263	47	719,303	93	1,532,566
22	40	612,583	33	486,686	73	1,099,269
23	36	654,330	40	584,558	76	1,238,888
24	58	1,243,658	50	891,311	108	2,134,969
25	37	847,814	39	866,480	76	1,714,294
26	41	1,209,964	44	1,038,471	85	2,248,435
27	35	1,043,796	40	1,002,557	75	2,046,353
28	46	1,403,857	30	817,004	76	2,220,861
29	51	1,665,532	40	1,325,338	91	2,990,870
30	30	1,202,548	29	1,288,884	59	2,491,432
31	35	1,068,667	36	1,284,677	71	2,353,344
32	33	1,266,500	25	870,983	58	2,137,483
33	34	1,605,917	25	973,747	59	2,579,664
34	43	1,939,471	35	1,377,167	78	3,316,638
35	40	1,709,305	18	837,601	58	2,546,906
36	32	1,598,879	30	1,455,507	62	3,054,386
37	39	1,688,531	15	664,239	54	2,352,770
38	38	1,934,418	22	902,008	60	2,836,426
39	35	1,732,797	26	1,179,550	61	2,912,347
40	36	2,011,020	20	750,610	56	2,761,630
41	39	2,298,958	21	892,240	60	3,191,198
42	29	1,441,982	25	1,292,381	54	2,734,363
43	33	1,905,727	19	925,330	52	2,831,057
44	32	1,736,574	22	1,052,348	54	2,788,922
45	32	1,481,399	29	1,524,656	61	3,006,055
46	31	1,883,992	28	1,683,756	59	3,567,748
47	38	2,071,653	19	847,202	57	2,918,855
48	33	2,143,021	26	1,301,442	59	3,444,463
49	33	1,771,441	33	1,645,942	66	3,417,383
50	57	2,701,615	25	1,244,196	82	3,945,811
51	45	2,157,874	24	1,287,076	69	3,444,950
52	53	2,663,167	25	1,140,652	78	3,803,819

STATISTICAL

Active Members and Total Annual Salaries by Age for the year ended December 31, 2019

Table I
(continued)

Age at 12/31/19	Male		Female		Total	
	Number	Annual Salaries	Number	Annual Salaries	Number	Annual Salaries
53	42	\$ 2,233,316	28	\$ 1,440,023	70	\$ 3,673,339
54	32	1,796,676	23	1,000,194	55	2,796,870
55	43	2,405,055	40	2,069,227	83	4,474,282
56	36	1,955,750	29	1,267,684	65	3,223,434
57	40	2,268,885	18	1,094,944	58	3,363,829
58	32	1,748,533	25	1,070,063	57	2,818,596
59	34	2,194,658	28	1,440,346	62	3,635,004
60	39	1,923,756	22	1,019,808	61	2,943,564
61	41	2,023,894	19	1,028,572	60	3,052,466
62	37	1,709,632	15	691,182	52	2,400,814
63	24	1,363,386	13	517,876	37	1,881,262
64	21	1,278,156	13	668,548	34	1,946,704
65	24	1,075,167	7	369,306	31	1,444,473
66	12	686,341	13	578,965	25	1,265,306
67	10	800,254	11	541,116	21	1,341,370
68	16	837,531	5	252,129	21	1,089,660
69	13	837,321	3	163,993	16	1,001,314
70	10	496,727	3	116,732	13	613,459
71	5	257,420	2	101,178	7	358,598
72	8	302,751	-	-	8	302,751
73	2	58,583	1	16,690	3	75,273
74	4	104,750	-	-	4	104,750
75	3	63,335	1	43,251	4	106,586
76	1	19,998	-	-	1	19,998
77	1	120,064	1	98,908	2	218,972
78	-	-	1	44,638	1	44,638
79	1	43,906	1	44,298	2	88,204
80	1	100,612	-	-	1	100,612
82	1	32,059	-	-	1	32,059
83	1	92,798	-	-	1	92,798
86	-	-	1	10,288	1	10,288
	<u>1,818</u>	<u>\$80,946,868</u>	<u>1,314</u>	<u>\$50,342,302</u>	<u>3,132</u>	<u>\$131,289,170</u>
				<u>Male</u>	<u>Female</u>	<u>Both</u>
Average Age:				43.0	40.1	41.8
Average Salary:				\$44,525	\$38,312	\$41,919

Note: The average salary reported by The Segal Company is annualized in order to take a conservative approach in reporting. The variances are immaterial in nature.

STATISTICAL

**Active Members and Total Annual Salaries by Length of Service
for the year ended December 31, 2019**

Table II

<u>Years of Service</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>
< 1	184	\$ 1,626,903	173	\$ 1,093,274	357	\$ 2,720,177
1	198	5,647,483	155	3,393,826	353	9,041,309
2	155	5,012,019	104	2,907,030	259	7,919,049
3	130	4,638,684	95	3,118,452	225	7,757,136
4	107	5,492,935	77	2,737,074	184	8,230,009
5	75	3,548,059	53	2,115,790	128	5,663,849
6	78	3,768,034	43	1,869,565	121	5,637,599
7	56	2,640,541	42	1,890,233	98	4,530,774
8	66	3,757,457	54	2,480,450	120	6,237,907
9	34	1,757,317	18	760,103	52	2,517,420
10	28	1,108,107	18	809,022	46	1,917,129
11	43	2,309,146	13	650,161	56	2,959,307
12	52	2,349,629	39	1,732,737	91	4,082,366
13	48	2,360,377	44	2,014,269	92	4,374,646
14	64	3,485,850	38	1,915,207	102	5,401,057
15	40	2,752,542	19	1,205,754	59	3,958,296
16	24	1,128,663	15	880,639	39	2,009,302
17	21	1,515,481	9	565,849	30	2,081,330
18	42	2,341,486	31	1,449,241	73	3,790,727
19	36	2,179,069	28	1,651,410	64	3,830,479
20	49	3,188,790	35	2,114,715	84	5,303,505
21	46	2,621,567	23	1,305,784	69	3,927,351
22	32	1,916,129	31	1,711,511	63	3,627,640
23	30	1,858,577	34	2,087,055	64	3,945,632
24	22	1,101,540	22	1,378,383	44	2,479,923
25	12	773,251	17	1,149,266	29	1,922,517
26	11	647,812	10	696,880	21	1,344,692
27	12	871,305	12	781,765	24	1,653,070
28	27	1,971,834	14	854,511	41	2,826,345
29	14	987,896	8	414,037	22	1,401,933
30	13	945,820	15	1,032,992	28	1,978,812
31	7	561,207	3	176,784	10	737,991
32	4	267,393	6	343,783	10	611,176
33	13	731,437	5	350,511	18	1,081,948
34	11	783,086	2	125,876	13	908,962

STATISTICAL

Active Members and Total Annual Salaries by Length of Service for the year ended December 31, 2019

Table II
(continued)

Years of Service	Male		Female		Total	
	Number	Annual Salaries	Number	Annual Salaries	Number	Annual Salaries
35	4	\$ 256,769	-	\$ -	4	\$ 256,769
36	3	246,408	-	-	3	246,408
37	5	291,873	4	272,826	9	564,699
38	6	520,840	-	-	6	520,840
39	5	318,985	1	78,120	6	397,105
40	3	187,987	1	48,008	4	235,995
41	4	246,807	1	60,932	5	307,739
42	1	61,173	-	-	1	61,173
45	1	43,908	-	-	1	43,908
46	1	45,943	1	74,179	2	120,122
47	1	78,749	-	-	1	78,749
50	-	-	1	44,298	1	44,298
	<u>1,818</u>	<u>\$80,946,868</u>	<u>1,314</u>	<u>\$50,342,302</u>	<u>3,132</u>	<u>\$ 131,289,170</u>

	<u>Male</u>	<u>Female</u>	<u>Both</u>
Average Service:	10.2 yrs	9.6 yrs	10.0 yrs
Average Salary:	\$44,525	\$38,312	\$41,919

Note: The average salary reported by The Segal Company is annualized in order to take a conservative approach in reporting. The variances are immaterial in nature.

**Retirement Pensions by Age and Annual Payments
for the year ended December 31, 2019**

Table III

Age at 12/31/19	Male		Female		Total	
	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>
50	5	\$ 41,793	1	\$ 5,948	6	\$ 47,741
51	3	32,944	1	16,881	4	49,825
52	4	99,854	7	255,218	11	355,072
53	8	237,045	1	37,463	9	274,508
54	6	106,311	8	272,422	14	378,733
55	11	490,670	5	99,373	16	590,043
56	16	567,794	5	121,636	21	689,430
57	19	680,611	7	129,530	26	810,141
58	19	666,795	16	508,574	35	1,175,369
59	24	681,699	12	318,499	36	1,000,198
60	40	1,383,677	19	399,141	59	1,782,818
61	41	1,526,725	10	371,533	51	1,898,258
62	31	1,283,176	15	360,775	46	1,643,951
63	48	1,415,916	18	666,266	66	2,082,182
64	58	2,079,729	22	706,895	80	2,786,624
65	65	2,304,396	23	743,718	88	3,048,114
66	71	2,237,445	28	741,216	99	2,978,661
67	58	1,750,709	32	715,403	90	2,466,112
68	74	2,597,955	31	848,397	105	3,446,352
69	80	2,349,868	31	903,298	111	3,253,166
70	62	2,319,146	21	564,856	83	2,884,002
71	58	1,690,127	19	504,643	77	2,194,770
72	74	2,263,901	20	502,850	94	2,766,751
73	51	1,383,021	18	352,246	69	1,735,267
74	54	1,397,996	14	328,178	68	1,726,174
75	37	1,244,426	23	480,892	60	1,725,318
76	55	1,782,726	17	382,011	72	2,164,737
77	54	1,552,378	21	329,858	75	1,882,236
78	36	1,137,154	15	391,133	51	1,528,287
79	38	1,353,246	16	227,844	54	1,581,090
80	27	892,165	15	287,113	42	1,179,278
81	49	1,346,678	10	194,946	59	1,541,624
82	34	1,035,939	8	64,284	42	1,100,223
83	29	730,876	13	344,394	42	1,075,270
84	34	1,015,017	6	161,358	40	1,176,375
85	29	1,096,210	14	161,960	43	1,258,170

STATISTICAL

Retirement Pensions by Age and Annual Payments for the year ended December 31, 2019

Table III
(continued)

Age at 12/31/19	Male		Female		Total	
	Number	Annual Salaries	Number	Annual Salaries	Number	Annual Salaries
86	25	\$ 891,299	6	\$ 166,248	31	\$ 1,057,547
87	23	578,354	13	159,468	36	737,822
88	24	481,065	4	80,625	28	561,690
89	12	421,030	5	133,216	17	554,246
90	13	532,018	1	42,644	14	574,662
91	15	488,391	4	51,151	19	539,542
92	13	419,250	4	61,255	17	480,505
93	4	131,865	5	106,396	9	238,261
94	3	101,986	2	32,779	5	134,765
95	3	175,090	3	71,637	6	246,727
96	4	117,862	2	40,937	6	158,799
97	4	78,974	2	19,159	6	98,133
98	4	224,122	1	5,366	5	229,488
100	<u>1</u>	<u>19,387</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>19,387</u>
	<u>1,550</u>	<u>\$49,436,811</u>	<u>594</u>	<u>\$14,471,633</u>	<u>2,144</u>	<u>\$63,908,444</u>
			<u>Male</u>	<u>Female</u>	<u>Both</u>	
Average Age:			72.1 yrs	71.2 yrs	71.8 yrs	
Average Annual:			\$31,895	\$24,363	\$29,808	

Note: The average salary reported by The Segal Company is annualized in order to take a conservative approach in reporting. The variances are immaterial in nature.

STATISTICAL

**Retirement Pensions by Age at Time of Retirement
for the year ended December 31, 2019**

Table IV

<u>Age at 12/31/19</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>
50	156	\$ 4,590,476	46	\$ 1,246,831	202	\$ 5,837,307
51	103	4,212,341	26	1,117,469	129	5,329,810
52	84	3,218,570	26	767,380	110	3,985,950
53	75	2,965,473	25	828,207	100	3,793,680
54	88	3,534,310	31	1,153,098	119	4,687,408
55	104	3,174,391	51	1,117,229	155	4,291,620
56	97	2,753,902	34	694,607	131	3,448,509
57	79	2,649,489	25	791,247	104	3,440,736
58	76	2,221,363	29	695,117	105	2,916,480
59	62	2,121,962	28	666,849	90	2,788,811
60	100	2,965,631	50	836,337	150	3,801,968
61	64	1,898,782	32	595,182	96	2,493,964
62	87	2,172,554	41	877,361	128	3,049,915
63	49	1,326,189	19	415,773	68	1,741,962
64	44	1,303,489	17	326,899	61	1,630,388
65	65	1,930,301	31	602,603	96	2,532,904
66	50	1,346,886	19	492,892	69	1,839,778
67	48	1,446,463	19	347,088	67	1,793,551
68	20	675,820	17	288,068	37	963,888
69	21	805,013	7	105,976	28	910,989
70	20	388,622	5	104,353	25	492,975
71	13	437,667	3	86,623	16	524,290
72	9	232,535	3	87,717	12	320,252
73	2	31,564	1	7,774	3	39,338
74	8	213,608	2	23,961	10	237,569
75	10	342,738	1	26,972	11	369,710
76	5	193,694	1	4,574	6	198,268
77	1	5,383	4	151,091	5	156,474
78	2	85,699	-	-	2	85,699
79	3	39,576	1	12,355	4	51,931
80	2	106,872	-	-	2	106,872
81	1	34,357	-	-	1	34,357

STATISTICAL

**Retirement Pensions by Age at Time of Retirement
for the year ended December 31, 2019**

Table IV
(continued)

<u>Age at 12/31/19</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>	<u>Number</u>	<u>Annual Salaries</u>
82	1	\$ 4,261	-	\$ -	1	\$ 4,261
85	1	6,830	-	-	1	6,830
	<u>1,550</u>	<u>\$49,436,811</u>	<u>594</u>	<u>\$14,471,633</u>	<u>2,144</u>	<u>\$63,908,444</u>

	<u>Male</u>	<u>Female</u>	<u>Both</u>
Average Age:	58.3 yrs	58.8 yrs	58.4 yrs
Average Annual Payments:	\$31,895	\$24,363	\$29,808

STATISTICAL

**Surviving Spouses' Pension by Age and Annual Payments
for the year ended December 31, 2019**

Table V

<u>Age at 12/31/19</u>	<u>Number</u>	<u>Annual Payments</u>	<u>Age at 12/31/19</u>	<u>Number</u>	<u>Annual Payments</u>
41	1	\$ 3,730	78	15	\$ 207,254
48	2	6,168	79	23	384,400
50	1	34,557	80	25	378,752
51	2	13,095	81	32	519,785
52	2	40,704	82	20	336,522
53	2	44,263	83	25	398,465
55	3	33,435	84	21	342,858
56	5	42,054	85	26	440,114
57	4	47,672	86	21	290,534
58	4	64,317	87	23	402,598
59	5	96,903	88	23	405,492
60	10	189,389	89	19	362,513
61	6	148,501	90	19	339,362
62	6	104,462	91	18	298,080
63	6	134,809	92	25	323,935
64	10	316,329	93	9	132,126
65	12	175,618	94	13	176,857
66	12	287,667	95	8	108,820
67	11	202,034	96	9	116,314
68	18	286,454	97	3	41,446
69	21	396,025	98	5	56,367
70	10	167,454	99	5	57,942
71	15	291,267	102	2	28,070
72	21	373,711	103	<u>1</u>	<u>12,401</u>
73	24	423,166		<u>686</u>	<u>\$11,749,073</u>
74	10	193,494			
75	21	447,940			
76	27	520,798			
77	25	502,050			

Average Age: 78.8 yrs
Average Annual Payments: \$17,127

STATISTICAL

Surviving Spouses' Pension by Age at Commencement for the year ended December 31, 2019

Table VI

<u>Age at Commencement</u>	<u>Number</u>	<u>Annual Payments</u>	<u>Age at Commencement</u>	<u>Number</u>	<u>Annual Payments</u>
27	1	\$ 4,194	62	15	\$ 259,473
28	2	12,382	63	14	274,334
29	2	5,825	64	25	378,145
30	1	15,639	65	18	342,351
31	2	12,083	66	17	297,569
33	2	24,859	67	26	427,439
34	1	8,064	68	19	377,987
35	2	5,023	69	28	529,273
36	5	43,863	70	20	346,989
37	2	10,054	71	19	333,640
38	3	21,136	72	20	274,165
39	5	82,479	73	13	204,280
40	2	44,872	74	18	289,770
41	5	80,800	75	19	340,158
42	7	126,125	76	27	425,875
43	5	75,117	77	14	300,377
44	9	102,069	78	17	284,811
45	9	134,853	79	17	220,543
46	5	82,184	80	13	163,486
47	4	81,333	81	9	163,849
48	9	181,249	82	7	110,316
49	10	208,375	83	9	94,613
50	14	247,228	84	10	178,830
51	10	189,515	85	8	103,518
52	5	95,424	86	4	45,278
53	15	282,050	87	6	125,846
54	13	319,301	88	4	65,793
55	18	401,826	89	2	5,396
56	12	244,830	90	5	65,445
57	12	282,790	91	3	23,789
58	17	377,631	92	3	47,879
59	17	320,012		<u>686</u>	<u>\$11,749,073</u>
60	15	315,719			
61	16	208,952			

Average Age: 64.8 yrs
Average Annual Payments: \$17,127

STATISTICAL

Annuities and Refunds by Type

Table VII

Last Ten Years

<u>Year Ended</u>	<u>Retirement</u>	<u>Surviving</u>		<u>Refunds</u>	
		<u>Spouse</u>	<u>Children</u>	<u>Employees'</u>	<u>Pensioners'</u>
June 30, 2011	\$50,950,848	\$10,374,674	\$18,519	\$1,524,460	\$137,898
June 30, 2012	52,051,852	10,801,985	14,719	1,786,275	201,878
December 31, 2012	26,428,994	5,529,729	10,859	789,406	188,506
December 31, 2013	54,256,588	11,319,614	21,619	2,033,334	82,829
December 31, 2014	55,519,537	11,665,763	20,800	2,427,646	301,745
December 31, 2015	56,094,931	11,823,316	17,100	1,493,229	554,946
December 31, 2016	58,967,909	12,043,511	18,000	2,228,079	281,414
December 31, 2017	59,488,303	12,252,673	15,900	1,834,626	191,179
December 31, 2018	61,178,336	12,108,228	16,900	2,589,760	136,207
December 31, 2019	63,644,273	12,187,742	18,450	1,792,130	292,308

Death and Disability Benefits

Table VIII

Last Ten Years

<u>Year Ended</u>	<u>Death Benefit</u>	<u>Ordinary Disability</u>	<u>Duty Disability</u>	<u>Total</u>
June 30, 2011	\$307,000	\$339,197	\$52,294	\$698,491
June 30, 2012	371,225	366,541	(91,817) (a)	645,949
December 31, 2012	136,775	187,808	8,935	333,518
December 31, 2013	266,000	302,316	53,667	621,983
December 31, 2014	279,500	281,640	39,411	600,551
December 31, 2015	317,000	207,846	93,648	618,494
December 31, 2016	255,000	184,173	99,790	538,963
December 31, 2017	305,000	217,423	(26,959) (a)	495,464
December 31, 2018	229,000	219,793	48,596	497,389
December 31, 2019	228,500	291,886	95,160	615,546

(a) Reflects net of recoveries of prior duty disability payments in accordance with state statute.

STATISTICAL

Number of Active Participants

Table IX

Last Ten Years

<u>Year Ended</u>	<u>Male Participants</u>	<u>Female Participants</u>	<u>Total</u>
June 30, 2011	1,674	1,121	2,795
June 30, 2012	1,804	1,173	2,977
December 31, 2012	1,829	1,224	3,053
December 31, 2013	1,819	1,257	3,076
December 31, 2014	1,742	1,231	2,973
December 31, 2015	1,796	1,267	3,063
December 31, 2016	1,800	1,314	3,114
December 31, 2017	2,114	1,429	3,543
December 31, 2018	1,871	1,316	3,187
December 31, 2019	1,818	1,314	3,132

Active Participants Statistical Averages

Table X

Last Ten Years

<u>Year Ended</u>	<u>Male</u>			<u>Female</u>			<u>Combined</u>		
	<u>Annual Salary</u>	<u>Age</u>	<u>Service</u>	<u>Annual Salary</u>	<u>Age</u>	<u>Service</u>	<u>Annual Salary</u>	<u>Age</u>	<u>Service</u>
June 30, 2011	\$38,680	43.5	10.9	\$32,873	39.9	9.3	\$36,351	42.1	10.3
June 30, 2012	36,623	42.9	10.2	32,585	39.7	9.1	35,032	41.6	9.8
December 31, 2012	19,201	43.3	10.1	16,829	39.7	8.9	18,250	41.9	9.6
December 31, 2013	37,809	43.1	10.0	32,664	39.5	8.9	35,706	41.6	9.6
December 31, 2014	41,199	43.4	10.7	35,245	39.8	9.6	38,734	41.9	10.3
December 31, 2015	40,361	43.0	10.5	34,578	40.0	9.6	37,969	41.8	10.1
December 31, 2016	41,248	42.7	10.4	34,041	39.5	9.3	38,207	41.3	9.9
December 31, 2017	35,986	41.9	8.9	32,383	39.6	8.7	34,532	41.0	8.8
December 31, 2018	40,973	42.6	9.8	35,712	39.9	9.5	38,800	41.5	9.7
December 31, 2019	44,525	43.0	10.2	38,312	40.1	9.6	41,919	41.8	10.0

STATISTICAL

Retirees and Beneficiaries Receiving Benefits
Last Ten Years

Table XI

<u>Year Ended</u>	<u>Retirees</u>	<u>Surviving Spouses</u>	<u>Children</u>	<u>Total</u>
June 30, 2011	2,096	803	14	2,913
June 30, 2012	2,104	804	13	2,921
December 31, 2012	2,090	798	18	2,906
December 31, 2013	2,102	786	16	2,904
December 31, 2014	2,101	773	17	2,891
December 31, 2015	2,097	767	12	2,876
December 31, 2016	2,113	744	13	2,870
December 31, 2017	2,115	745	16	2,876
December 31, 2018	2,136	706	12	2,854
December 31, 2019	2,144	686	13	2,843

Average Annual Retirees/Surviving Spouses' Benefit Payments
Last Ten Years

Table XII

<u>Year Ended</u>	<u>Average Annual Payments</u>	
	<u>Retiree</u>	<u>Spouse</u>
June 30, 2011	\$24,668	\$12,941
June 30, 2012	25,367	13,544
December 31, 2012	25,747	14,018
December 31, 2013	26,330	14,500
December 31, 2014	26,855	15,062
December 31, 2015	26,683	15,525
December 31, 2016	28,048	16,119
December 31, 2017	28,678	16,577
December 31, 2018	29,571	17,101
December 31, 2019	29,808	17,127

STATISTICAL

Other Financial Data

Funded Ratio Last Ten Years

Table I

	(1)	(2)	(3)	(4)
	Actuarial	Unfunded	Statutory	%
	Value of	Accrued	Reserve	Percent
<u>Year Ended</u>	<u>Assets</u>	<u>Liabilities</u>	<u>Requirements</u>	<u>Funded</u>
			<u>(1) + (2)</u>	<u>(1) / (3)</u>
June 30, 2011	\$489,370,505	\$354,572,735	\$843,943,240	58.0%
June 30, 2012	440,692,006	425,678,559	866,370,565	50.9
December 31, 2012	421,448,001	550,359,221	971,807,222	43.4
December 31, 2013	404,292,435	483,730,929	888,023,364	45.5
December 31, 2014	393,762,692	507,077,925	900,840,617	43.7
December 31, 2015	395,652,106	514,608,254	910,260,360	43.5
December 31, 2016	393,604,997	611,888,096	1,005,493,093	39.1
December 31, 2017	385,419,506	653,859,938	1,039,279,444	37.1
December 31, 2018	366,806,612	775,491,353	1,142,297,965	32.1
December 31, 2019	349,960,428	820,642,552	1,170,602,980	29.9

Ratio of Unfunded Liability to Payroll

Table II

Last Ten Years

<u>Year Ended</u>	<u>Covered</u>	<u>Unfunded</u>	<u>Liability</u>
	<u>Payroll</u>	<u>Liability</u>	<u>% of Payroll</u>
June 30, 2011	\$107,686,693	\$354,572,735	329.3%
June 30, 2012	114,223,909	425,678,559	372.6
December 31, 2012	58,231,511	550,359,221	472.6
December 31, 2013	117,781,596	483,730,929	410.7
December 31, 2014	118,987,507	507,077,925	426.2
December 31, 2015	122,382,584	514,608,254	420.5
December 31, 2016	121,126,918	611,888,096	505.2
December 31, 2017	135,315,008	653,859,938	483.2
December 31, 2018	133,112,100	775,491,353	582.6
December 31, 2019	139,204,051	820,642,552	589.5

Revenue by Sources

Table III

Last Ten Years

<u>Year Ended</u>	<u>Employer Contributions</u>	<u>Employee Contributions</u>	<u>Net Investment Income/(Loss) (a)</u>	<u>Total</u>
June 30, 2011	\$10,981,419	\$9,791,650	\$84,890,838	\$105,663,907
June 30, 2012	10,868,361	10,404,827	3,861,173	25,134,361
December 31, 2012	5,268,363	5,371,084	24,956,796	35,596,243
December 31, 2013	15,804,452	10,732,730	66,642,528	93,179,710
December 31, 2014	11,225,438	10,831,434	27,591,038	49,647,910
December 31, 2015	30,588,976	12,368,636	8,911,726	51,869,338
December 31, 2016	30,890,241	12,246,115	31,022,803	74,159,159
December 31, 2017	20,920,614	13,675,292	51,174,093	85,769,999
December 31, 2018	27,638,402	12,125,457	(17,128,885)	22,634,974
December 31, 2019	27,682,089	12,664,855	52,032,781	92,379,725

(a) includes income from securities lending

STATISTICAL

Required Schedules (GASB No. 44)

Average Benefit Payments

Table I

Last Ten Years

(Dollars in Thousands)

	Years of Credited Service						
	<u>0 – 5</u>	<u>5 – 10</u>	<u>10 – 15</u>	<u>15 – 20</u>	<u>20 – 25</u>	<u>25 – 30</u>	<u>30+</u>
Period 7/1/10 to 6/30/11							
Average monthly benefit	\$ 475	\$ 1,001	\$ 665	\$ 1,244	\$ 1,893	\$ 2,800	\$ 4,406
Average final average salary	\$ 7,516	\$ 5,633	\$ 2,288	\$ 3,216	\$ 3,728	\$ 4,484	\$ 5,911
Number of retired members	19	7	12	5	11	8	16
Period 7/1/11 to 6/30/12							
Average monthly benefit	\$ 572	\$ 871	\$ 995	\$ 1,419	\$ 1,999	\$ 3,222	\$ 3,909
Average final average salary	\$ 7,210	\$ 4,957	\$ 3,198	\$ 4,088	\$ 4,339	\$ 5,175	\$ 4,633
Number of retired members	21	14	7	9	14	13	22
Period 7/1/12 to 12/31/12							
Average monthly benefit	\$ 444	\$ 1,040	\$ 687	\$ 1,245	\$ 2,199	\$ 3,727	\$ 4,432
Average final average salary	\$ 6,780	\$ 5,896	\$ 2,590	\$ 3,180	\$ 4,638	\$ 5,510	\$ 5,677
Number of retired members	9	5	6	7	4	4	16
Period 1/1/13 to 12/31/13							
Average monthly benefit	\$ 581	\$ 822	\$ 1,311	\$ 1,288	\$ 2,221	\$ 3,234	\$ 3,877
Average final average salary	\$ 7,186	\$ 4,677	\$ 4,797	\$ 3,344	\$ 4,428	\$ 4,780	\$ 5,076
Number of retired members	10	17	21	12	16	14	20
Period 1/1/14 to 12/31/14							
Average monthly benefit	\$ 299	\$ 736	\$ 941	\$ 1,364	\$ 2,615	\$ 3,762	\$ 4,608
Average final average salary	\$ 5,274	\$ 4,072	\$ 3,198	\$ 3,320	\$ 4,844	\$ 5,705	\$ 5,893
Number of retired members	13	8	11	15	13	9	21
Period 1/1/15 to 12/31/15							
Average monthly benefit	\$ 466	\$ 914	\$ 1,019	\$ 1,623	\$ 2,323	\$ 3,478	\$ 3,740
Average final average salary	\$ 7,554	\$ 5,306	\$ 3,671	\$ 3,652	\$ 4,401	\$ 5,433	\$ 4,752
Number of retired members	8	10	16	14	7	7	22
Period 1/1/16 to 12/31/16							
Average monthly benefit	\$ 391	\$ 869	\$ 1,087	\$ 1,546	\$ 1,984	\$ 3,249	\$ 3,973
Average final average salary	\$ 6,774	\$ 5,489	\$ 3,956	\$ 3,407	\$ 3,949	\$ 4,619	\$ 4,838
Number of retired members	13	13	11	12	11	12	27
Period 1/1/17 to 12/31/17							
Average monthly benefit	\$ 608	\$ 1,113	\$ 1,168	\$ 1,554	\$ 2,414	\$ 3,041	\$ 4,732
Average final average salary	\$ 7,626	\$ 6,255	\$ 4,107	\$ 3,824	\$ 4,909	\$ 4,502	\$ 5,605
Number of retired members	12	13	16	18	8	9	22
Period 1/1/18 to 12/31/18							
Average monthly benefit	\$ 445	\$ 992	\$ 1,091	\$ 2,184	\$ 2,033	\$ 3,543	\$ 4,438
Average final average salary	\$ 5,497	\$ 5,913	\$ 4,057	\$ 5,639	\$ 3,948	\$ 5,185	\$ 5,641
Number of retired members	5	7	19	14	17	9	31
Period 1/1/19 to 12/31/19							
Average monthly benefit	\$ 628	\$ 1,313	\$ 788	\$ 1,675	\$ 2,166	\$ 4,016	\$ 4,414
Average final average salary	\$ 8,882	\$ 8,164	\$ 3,028	\$ 4,052	\$ 4,230	\$ 5,991	\$ 5,568
Number of retired members	13	11	15	14	11	9	20

STATISTICAL

Required Schedules (GASB No. 44)

Principal Participating Employers Current Year and Nine Years Ago

Table II

Participating Government	December 31, 2019			June 30, 2011		
	Covered Employees'	Rank	Percentage of Total System	Covered Employees'	Rank	Percentage of Total System
Chicago Park District Retirement Board of the Park Employees' Annuity and Benefit Fund	3,123	1	99.71%	2,782	1	99.53%
City of Chicago	9	2	0.29	13	2	0.47
	-	3	0.00	-	3	0.00
Total (3 Governments)	<u>3,132</u>		<u>100.00%</u>	<u>2,795</u>		<u>100.00%</u>

Changes in Fiduciary Net Position

Table III

Last Ten Years
(Dollars in Thousands)

	For the years ended December 31,							Six Months Ended	For the years ended June 30,	
	2019	2018	2017	2016	2015	2014	2013	12/31/12	2012	2011
ADDITIONS										
Employer Contributions	\$27,682	\$27,638	\$20,921	\$30,890	\$30,589	\$11,226	\$15,804	\$ 5,268	\$10,868	\$10,981
Employee Contributions	12,665	12,126	13,675	12,246	12,369	10,831	10,733	5,371	10,405	9,792
Investment Income (Loss)	<u>52,033</u>	<u>(17,129)</u>	<u>51,174</u>	<u>31,023</u>	<u>8,912</u>	<u>27,591</u>	<u>66,643</u>	<u>24,957</u>	<u>3,861</u>	<u>84,891</u>
Total Additions	92,380	22,635	85,770	74,159	51,870	49,648	93,180	35,596	25,134	105,664
DEDUCTIONS (see Table IV)										
Benefit Payments	76,466	73,801	72,252	71,568	68,554	67,807	66,220	32,303	63,514	62,043
Refunds	2,084	2,726	5,886*	2,509	2,048	2,729	2,116	978	1,988	1,662
Administrative Expenses	<u>1,529</u>	<u>1,501</u>	<u>1,682</u>	<u>1,538</u>	<u>1,534</u>	<u>1,459</u>	<u>1,464</u>	<u>724</u>	<u>1,645</u>	<u>1,522</u>
Total Deductions	80,079	78,028	79,820	75,615	72,136	71,995	69,800	34,005	67,147	65,227
Changes in Fiduciary Net Position	<u>\$12,301</u>	<u>\$(55,393)</u>	<u>\$ 5,950</u>	<u>\$(1,456)</u>	<u>\$(20,266)</u>	<u>\$(22,347)</u>	<u>\$23,380</u>	<u>\$ 1,591</u>	<u>\$(42,013)</u>	<u>\$40,437</u>

*Includes refund of increased contributions and reduced disability benefits per court order.

STATISTICAL

Required Schedules (GASB No. 44)

Benefit and Refund Deductions from Fiduciary Net Position by Type

Table IV

Last Ten Years

(Dollars in Thousands)

	For the years ended December 31,							Six Months Ended	For the years ended June 30,	
	2019	2018	2017	2016	2015	2014	2013	12/31/12	2012	2011
TYPE OF BENEFIT										
Age and Service Benefits										
Retirees	\$63,644	\$61,178	\$59,488	\$58,968	\$56,095	\$55,520	\$54,256	\$26,429	\$52,052	\$50,951
Spousal	12,188	12,108	12,253	12,044	11,823	11,666	11,320	5,529	10,802	10,375
Children	18	17	16	18	17	21	22	11	15	19
Death Benefits	229	229	305	255	317	280	266	137	371	307
Disability Benefits										
Member-Duty	95	49	(27)	99	94	39	54	9	(92)	52
Member-Non-Duty	292	220	217	184	208	281	302	188	366	339
Total Benefits	<u>\$76,466</u>	<u>\$73,801</u>	<u>\$72,252</u>	<u>\$71,568</u>	<u>\$68,554</u>	<u>\$67,807</u>	<u>\$66,220</u>	<u>\$32,303</u>	<u>\$63,514</u>	<u>\$62,043</u>
TYPE OF REFUND										
Separation	\$ 1,792	\$ 2,590	\$ 1,835	\$ 2,228	\$ 1,493	\$ 2,427	\$ 2,033	\$ 789	\$ 1,786	\$ 1,524
Death	292	136	191	281	555	302	83	189	202	138
Refund of increased contributions and reduced disability benefits	-	-	3,860	-	-	-	-	-	-	-
Total Refunds	<u>\$ 2,084</u>	<u>\$ 2,726</u>	<u>\$ 5,886</u>	<u>\$ 2,509</u>	<u>\$ 2,048</u>	<u>\$ 2,729</u>	<u>\$ 2,116</u>	<u>\$ 978</u>	<u>\$ 1,988</u>	<u>\$ 1,662</u>

Retired Members by Type of Benefit

Table V

Amount of Monthly Benefit	Number of Retired Members	Type of Retirement		
		1	2	3
\$ 1 - \$ 250	165	91	61	13
251 - 500	283	201	82	-
501 - 750	252	182	70	-
751 - 1,000	231	162	69	-
1,001 - 1,250	189	134	55	-
1,251 - 1,500	145	100	45	-
1,501 - 1,750	151	83	68	-
1,751 - 2,000	135	81	54	-
Over 2,000	<u>1,292</u>	<u>1,110</u>	<u>182</u>	-
Total	<u>2,843</u>	<u>2,144</u>	<u>686</u>	<u>13</u>

Type of Retirement

- 1 Normal Retirement for age and service, including incentive retirements
- 2 Beneficiary payment, normal surviving spouse
- 3 Beneficiary payments, child(ren)