County Employees' and Officers' Annuity and Benefit Fund of Cook County

A Component Unit of Cook County, Illinois

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Years Ended December 31, 2020 and 2019

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Prepared by the staff of the

County Employees' and Officers' Annuity and Benefit Fund of Cook County

TABLE OF CONTENTS

INTRODUCTORY Section

This section provides information regarding the County Employees' and Officers' Annuity and Benefit Fund of Cook County's Certificate of Achievement, Board of Trustees, consultants, and organizational structure, as well as a letter of transmittal.

Government Finance Officers Association

Certificate of Achievement

for Excellence in

Financial Reporting

Presented to

Cook County Employee Annuity and Benefit Fund Illinois

For its Comprehensive Annual Financial Report

For the Fiscal Year Ended

December 31, 2019

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Executive Director/CEO

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Callan Associates, Inc.

Consulting Actuary
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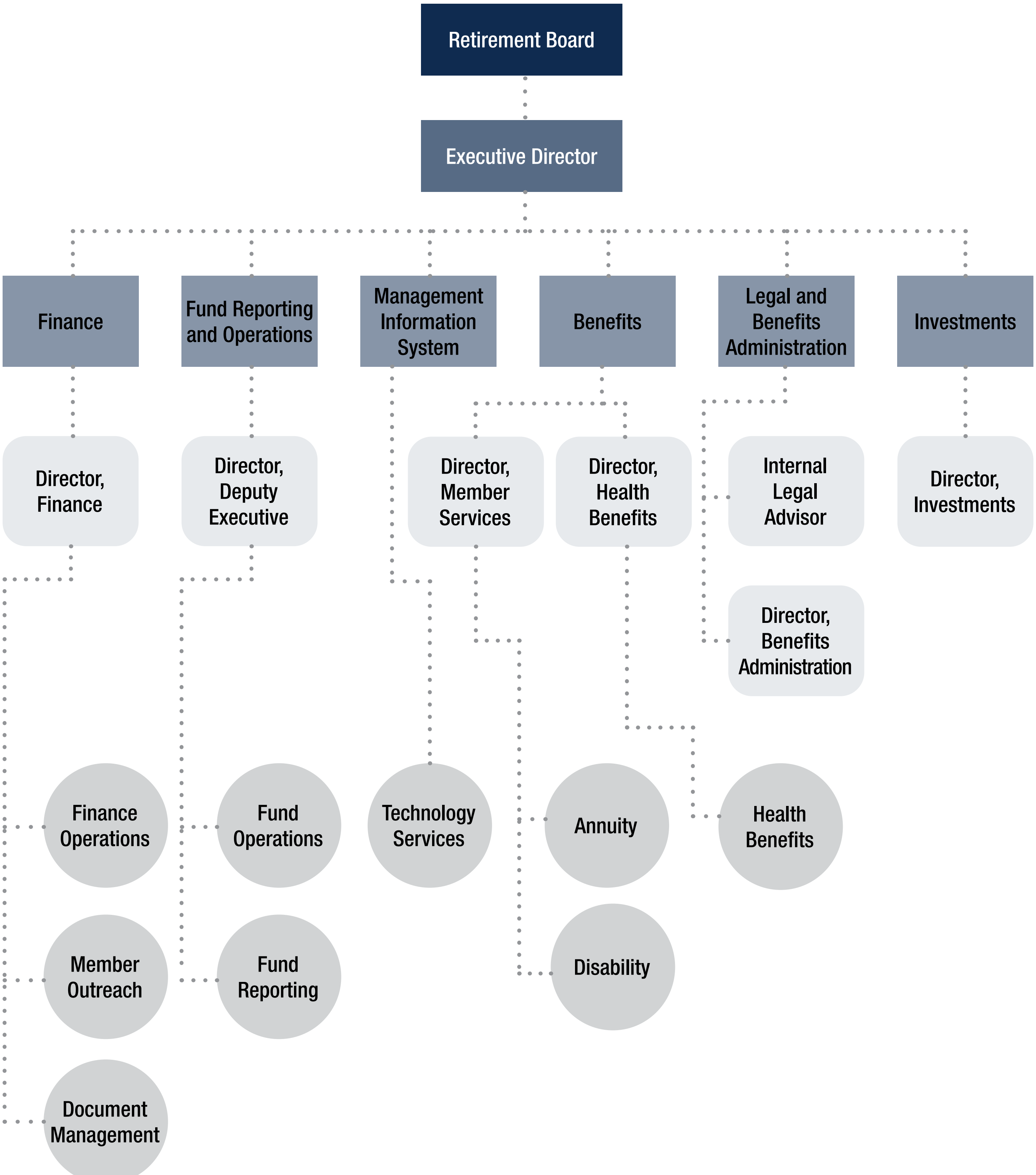
Consulting, LLC

Master Custodian
BNY Mellon

Custodian
Cook County Treasurer

Investment Managers are listed on pages 76-77.
Brokers used by Investment Managers are listed on pages 78-79.

As of December 31, 2020



June 11, 2021

Retirement Board
County Employees' and Officers' Annuity and Benefit Fund of Cook County
and *ex officio* for the Forest Preserve District Employees' Annuity and Benefit Fund of Cook County
70 W Madison St, Suite 1925
Chicago, IL 60602

To the Retirement Board and Our Members:

We are pleased to submit to you the Comprehensive Annual Financial Report ("AFR") of the County Employees' and Officers' Annuity and Benefit Fund of Cook County ("the Fund") for the calendar year ended December 31, 2020. The financial statements and their content are the responsibility of the Fund's management.

To the best of our knowledge and belief, the information contained in this report is complete and accurate in all material respects. This report is provided to allow the reader to gain an understanding of the Fund's financial position and operational activities as of December 31, 2020. Readers should review this report in conjunction with the Management's Discussion and Analysis (MD&A) found in the Financial Section of this report.

Fund Profile

Established in 1926 by an act of the Illinois General Assembly, the Fund is a defined benefit public pension fund that is governed by the Illinois Pension Code 40 ILCS 5/1-101 et seq. The Fund administers annuity, disability, death, and health benefits to employees and their beneficiaries of Cook County, Illinois. It is considered a component unit of Cook County and is included in the County's financial statements as a pension trust fund. As of December 31, 2020, the Fund consisted of 19,102 active employees, 16,572 retiree annuitants, 2,870 survivor annuitants, and 16,404 inactive members.

The Fund is governed by a nine-member Retirement Board ("Board") that also administers the Forest Preserve District Fund. The nine Trustees are elected or appointed as follows: three are elected by the employees of Cook County; one is elected by employees of the Forest Preserve District, two are elected by the annuitants of Cook County; one is elected by the annuitants of the Forest Preserve District, and two are ex officio seats appointed by the Comptroller and Treasurer of Cook County. Elected Trustees serve staggered three-year terms, resulting in no more than three positions being subject to election each year. The Fund has common trustees to administer the annuity and benefits of Cook County and Forest Preserve District employees in accordance with Illinois Compiled Statutes (ILCS) Chapter 40, Articles 1, 9, 10, and 20.

Summary of Financial Experience

The following table illustrates the changes in the Fund's net position between December 31, 2020 and December 31, 2019 (numbers in millions):

Change in Net Position	2020	2019	$ Change	% Change
Total additions	$ 2,144.8	$ 2,561.9	$ (417.1)	–16.3%
Total deductions	$ 986.1	$ 932.9	$ 53.2	5.7%
Change in net position from prior year	$ 1,158.7	$ 1,629.0	$ (470.3)	–28.9%

A more detailed analysis of the Fund's financial information can be found in the Financial Section of this report.

Funding

The Fund engages an independent actuary, Cavanaugh Macdonald Consulting, LLC, to perform an actuarial valuation on an annual basis pursuant to the provisions of the Illinois Pension Code.

As of December 31, 2020, the Fund's combined actuarial accrued liability for pension and retiree benefits was $18.4 billion, and the actuarial value of assets was $11.8 billion, resulting in an unfunded actuarial accrued liability of $6.6 billion. The funded ratio (ratio of assets to liabilities) for pension benefits and retiree health benefits combined was 63.87%, a slight increase from prior year's funded ratio of 61.19%.

The Fund's actuarial accrued liability for pension benefits only was $17.4 billion and the actuarial value of assets was $11.8 billion, resulting in an unfunded liability of $5.6 billion and a funded ratio of approximately 68%. Based on the Fund's combined actuarial valuation, the Fund's actuarial accrued liability for retiree health benefits was $1.0 billion. As there are no dedicated assets for retiree health benefits, the actuarial value of assets was $0 for retiree health benefits, resulting in an unfunded liability for retiree health benefits of $1.0 billion.

Employees contribute 8.5% of pensionable earnings (9.0% for County police employees) to the Fund. Contributions from the employer, as required by the Illinois Pension Code, are determined by a multiplier of active employee contributions. Specifically, the County levies a tax annually equal to the total amount of contributions made by employees in the calendar year 2 years prior to the year of the levy, multiplied by 1.54.

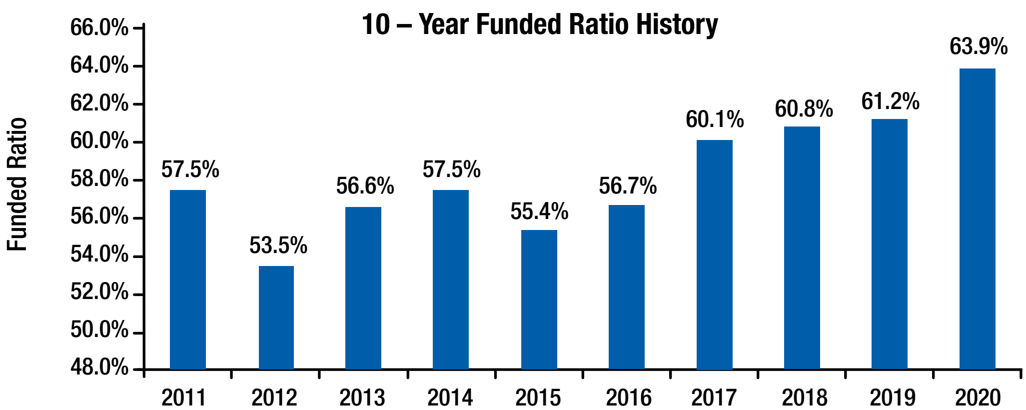
This multiplier, in the opinion of the Fund's actuary, is an inadequate funding mechanism to address the long-term financial requirements of the Fund. Since 1984, the statutory tax multiple used to determine the employer contribution has remained static at 1.54. According to the Fund's 2020 actuarial valuation, an actuarially-determined tax multiplier of 5.00 would be needed to generate the actuarially required 2021 employer contribution. Thus, the current fixed multiplier is an inadequate mechanism to provide long-term sustainability. The Fund's most recent actuarial valuation projects that the Fund's assets will be depleted by 2047. On a projected basis, the Fund faces a critical funding shortfall without legislative action to establish an actuarially-based funding policy. Also of note, as of December 31, 2020, for the first time in the Fund's nearly 95-year history, the Fund's annuitant members of 19,442 exceed its active members of 19,102. With the changing demographics of the Fund's membership, funding legislation has become even more critical.

The Fund has been submitting legislation to the General Assembly on an annual basis since 2010 which proposes an actuarially-based funding policy in lieu of a fixed multiplier. The Fund continues to work with its actuary, legislation liaison, fiduciary counsel and the employer to address the funding shortfall and identify permanent long-term solutions that can be enacted as statutory requirements within the Illinois Pension Code.

The Employer, under the leadership of President Preckwinkle and the Cook County Board of Commissioners, has attempted to address the downward funding trend being experienced by the Fund by identifying and transmitting an additional contribution source to the Fund. This supplemental contribution is made to the Fund pursuant to a one-year Intergovernmental Agreement (IGA) which has been renewed annually beginning in fiscal year 2016 and continuing to date through fiscal year 2021. The supplemental contribution source is derived from the Home Rule Sales Tax, which amounted to an additional contribution from the Employer to the Fund of $320.3 million (156% above the statutory contribution) in 2019, and $309.2 million (155% above the statutory contribution) in 2020.

For 2021, the Employer is expected to make supplemental payments to the Fund of $342.0 million, of which $28.0 million was funded on December 31, 2020. On a near-term basis, the supplemental contributions serve to bridge the funding shortfall between annual contributions received and the annual benefit payments made by the Fund. As of the date of this letter, the Employer has made additional contributions to the Fund in 2021 (pursuant to the 2021 IGA) totaling $140,000,000. The Employer is expected to make additional payments during 2021 in the amounts of: $28,000,000 on June 30, 2021; $28,000,000 on July 31, 2021; $28,000,000 on August 31, 2021; $28,000,000 on September 30, 2021; $28,000,000 on October 31, 2021; and $33,961,760 on or before November 30, 2021 for a total of $313,961,760 in 2021. These contributions significantly alleviate the negative cash flows experienced by the Fund in order to pay monthly benefit payments, especially during volatile market periods.

The following chart depicts historical funding ratios for the Fund.



Investments

The Board's authority to invest the Fund's assets is governed by 40 ILCS 5/1-101 et seq. and 40 ILCS 5/9-101 et seq. The Fund's Investment Policy, which provides additional strategies and safeguards for the Fund's investment objectives, can be found at CookCountyPension.com.

At year-end, the total invested assets of the Fund were valued at $12.4 billion compared with $11.2 billion at the end of 2019, an increase of approximately $1.2 billion. In spite of a tumultuous year due to the coronavirus pandemic (Covid-19), the Fund's net investment rate of return for 2020 was 12.7%, which trailed the Fund's custom benchmark. Federal Reserve interest rate cuts to zero, quantitative easing and fiscal stimulus measures buoyed both equity and credit markets despite a mostly shuttered-in national economy in the first half of the year. Market momentum continued at the end of the year when vaccines were announced and began to be distributed. Within the Fund's portfolio, allocations to private equity, REITs and private real estate outperformed their respective benchmarks, while domestic equity, international equity and hedge funds trailed their benchmarks despite posting strong absolute returns. Fixed income finished mostly in line against its benchmark.

The Board continues to work to maintain a diversified asset allocation within acceptable risk parameters. In 2020, the Fund approved additional commitments of $20 million to Mesirow Financial Private Equity, a private equity fund-of-fund manager, and a new commitment of approximately $200 million to Boston Common, an international equity fund managed by a woman-owned firm.

Additional information regarding performance and investment professionals who provide services to the Fund can be found in the Investment Section of this report.

2020 Initiatives

In March of 2020 when the World Health Organization declared the novel coronavirus outbreak a global pandemic, the Fund's staff quickly and successfully transitioned to a primarily remote environment. Equipped with laptops and other resources, the Fund's staff rose to the challenges associated with the coronavirus outbreak and continued to deliver all core services in an efficient manner.

Benefits and Communication

Of utmost importance during this unprecedented situation was uninterrupted, timely payment of benefits to members and prompt processing of all annuity, disability and refund applications. In 2020, all member calls and emails were punctually returned, all service matters were promptly addressed, counseling appointments continued remotely, and all benefits were paid on-time without disruption.

In 2020, the following member services were administered to both the Cook County and Forest Preserve Funds:

- Processed over 240,000 annuity and disability payments to members
- Processed over 2,400 refunds to terminated members or their survivors
- Calculated approximately 940 new annuitant benefits

In addition to processing of member benefits, the Fund has initiated new efforts of outreach to members, including the employment of a member outreach coordinator. The member outreach coordinator has initiated communication with certain groups of the more than 16,400 inactive members, advising them of their eligibility for benefits or a refund of contributions. In addition, a survey regarding member communications was sent to all annuitants in September of 2020. The survey requested feedback on various areas of member communications including the Fund's website, newsletter, and phone system. Results of the survey will be used to improve future member communication methods.

Trustee Election

In 2020, an election for one trustee position, Cook County employee trustee, was held on October 28, 2020. The election procedures in 2020 were changed to eliminate in-person voting given safety concerns associated with the coronavirus pandemic. Further changes were made and all members eligible to vote in the 2020 election were provided a mail-in ballot, thus eliminating the prior ballot application process.

Mr. Kevin Ochalla was re-elected by Cook County employees on October 28, 2020, and his three year term is December 1, 2020, through November 30, 2023.

Investment

Despite the dislocation in the financial markets caused by Covid-19, no significant changes were made to the Fund's strategic asset allocations and targets.

Investment manager activity in 2020 largely focused on implementing initiatives approved in 2019. In the beginning of 2020, the Fund liquidated its emerging manager of manager mandate with Progress Investment Management due to firm closure. This allowed the Fund to set aside cash for anticipated benefit payments for all of 2020. In addition, Clarion Partners, a recently added real estate manager, called capital in early 2020. Another real estate manager, LaSalle Partners, called capital from an allocation approved in 2019. As previously mentioned, two new commitments were made with Mesirow Financial Private Equity and Boston Common for funding in 2021. The Boston Common mandate contributes to the Fund's increase in exposure to emerging managers after the loss of Progress Investment Management.

Fund staff conducted an investment consultant search, resulting in a renewal of its current investment consultant for a new five year term beginning in 2021.

Administration

Fund staff continues to seek ways to evaluate cost-efficient service solutions. In 2020, a request for proposal (RFP) was issued for custodial services, which included services for a benefit payment agent. This is a new initiative that will outsource the payment of benefits to a service line within the custodial bank. Currently these functions are performed by Fund staff. Outsourcing these functions will enhance member service in many ways and provide opportunities to evaluate and improve Fund staff current procedures and processes.

Also of note is that the administrative expenses of the Fund of $5.0 million have exhibited insignificant increases, and in some cases decreases, over a 10 - year period. 2020 expenses were lower than those of 2019 and are at the lowest level since 2013. The costs to administer benefits have remained lean with increased annuitant membership and are at approximately $129 for every active member and annuitant. This cost per member is among the lowest when compared to other local funds in the State of Illinois.

Legislation

The following Public Acts were enacted in calendar year 2020:

Public Act 101-0640 Provisions

- Amended the Open Meetings Act (5 ILCS 12/7) to allow digital meetings with members allowed to be present and vote via audio or video conference as long as certain criteria is met including the verbatim recordings being made available to the public.
- The act allows remote witnessing and notarization (with the addition of 5 ILCS 175/95-20).

Accounting System and Internal Control

This report and the financial statements included within were prepared to conform to the principles of governmental accounting and reporting pronounced by the Governmental Accounting Standards Board and the American Institute of Certified Public Accountants.

The financial statements were prepared using the accrual basis of accounting. Under the accrual basis, revenues are recognized in the accounting period in which they are earned, without regard to the date of collection, and expenses are recognized when the corresponding liabilities are incurred, regardless of when payment is made.

The Fund maintains a system of internal controls to adequately safeguard its assets and assure the reliability of its financial records. The controls are designed to provide reasonable, but not absolute, assurance that these objectives are met. The concept of reasonable assurance recognizes that first, the cost of the control should not exceed the benefits likely to be derived, and second that the valuation of the cost and benefits requires estimates and judgments by management.

Management and the external auditor continually review the controls for adequacy.

The financial statements included in this report were audited by RSM US LLP, who have issued an unmodified opinion for calendar year ended December 31, 2020. A copy of their report is contained in the Financial Section of this report.

Administration

The Covid-19 pandemic presented many challenges to most business environments and the Fund's active members and staff were not alone in a mandatory re-engineering of job functions and public service. The ability of the Fund's Trustees, members and staff to adapt to changing circumstances, develop creative service solutions and implement timely change has been inspiring. As December 31, 2020, concludes my second full year of responsibilities as the Executive Director of the Fund, I am proud to serve such a dedicated, hard-working and flexible group of members that provide vital support to the operations of Cook County, regardless of the circumstances presented. Our efforts to service the membership will continue to evolve and change as we seek to further develop innovative ways to service the needs of the membership and deliver the benefits earned.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Fund for its AFR for the fiscal year ended December 31, 2019. This was the eleventh year that the Fund has earned this prestigious award. In order to be awarded a Certificate of Achievement, the 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 this current AFR continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

Acknowledgments

This report was prepared through the combined efforts of the Fund's staff under the direction of the Board. On behalf of the Board, I would like to thank the staff and professional consultants for their efforts in compiling this report.

Respectfully submitted,

Regina Tuczak

Regina Tuczak, Executive Director

FINANCIAL
Section

This section contains the report of the independent auditors, financial statements, analysis, and supplemental financial information.

RSM

Independent Auditor's Report

RSM US LLP

To the Board of Trustees of the County Employees' and Officers' Annuity and Benefit Fund of Cook County

Report on the Financial Statements

We have audited the accompanying combined Statement of Fiduciary Net Position of the County Employees' and Officers' Annuity and Benefit Fund of Cook County (the Fund), a fiduciary fund of Cook County, Illinois, as of December 31, 2020 and the related 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 auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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 County Employees' and Officers' Annuity and Benefit Fund of Cook County as of December 31, 2020, and the changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

The financial statements of the County Employees' and Officers' Annuity and Benefit Fund of Cook County, as of and for the year ended December 31, 2019, were audited by other auditors whose report dated June 19, 2020 expressed an unmodified opinion on those statements.

Required Supplementary Information:

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 18 through 21 and the required supplementary information as listed in the table of contents on pages 50 through 57 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information:

Our audit for the year ended December 31, 2020 was conducted for the purpose of forming an opinion on the Fund's basic financial statements. The supplementary financial information in the financial section, as listed in the table of contents, and the accompanying introductory, investment, actuarial and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The supplementary information as listed in the table of contents is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements for the year ended December 31, 2020 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 other supplementary information as listed in the table of contents, is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introductory, investment, actuarial and statistical have 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 them.

RSM US LLP

Chicago, Illinois
June 11, 2021

Management's Discussion and Analysis (Unaudited)

This section presents Management's Discussion and Analysis of the financial position and performance of the County Employees' and Officers' Annuity and Benefit Fund of Cook County (the Fund) for the years ended December 31, 2020 and 2019. This discussion is presented as an overview of the financial activities of the Fund and should be read in conjunction with the Fund's financial statements.

Overview of the Basic Financial Statements

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

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

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

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

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

Supplementary Information includes schedules of net administrative expenses, professional and consulting fees, investment expenses, additions by source, deductions by type and employer contributions receivable.

Financial Highlights

Net position increased by $1,158,651,218 or 10.1% from $11,490,959,220 at December 31, 2019 to $12,649,610,438 at December 31, 2020. Comparatively, net position increased by $1,628,935,438 or 16.5% from $9,862,023,782 at December 31, 2018 to $11,490,959,220 at December 31, 2019. The increase in net position for 2020 and 2019 was primarily due to the increase in the fair value of investments.

Rate of return of the Fund's investment portfolio was 12.74% for 2020, 19.07% for 2019, and (3.79%) for 2018.

Net Position

The condensed Combining Statements of Pension Plan Fiduciary Net Position and Postemployment Healthcare Plan Net Position reflects the resources available to pay benefits to members. A summary of the Combining Statements of Pension Plan Fiduciary Net Position and Postemployment Plan Net Position is as follows:

Plan Net Position As of December 31,

	2020	2019	2018	Current Year Increase (Decrease) in Dollars	Percent
Total assets	$ 13,436,785,089	$ 12,242,245,144	$ 10,886,244,214	$ 1,194,539,945	9.8%
Total liabilities	787,174,651	751,285,924	1,024,220,432	35,888,727	4.8%
Net position	$ 12,649,610,438	$ 11,490,959,220	$ 9,862,023,782	$ 1,158,651,218	10.1%

Changes in Fund Net Position

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

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

	2020	2019	2018	Current Year Increase/(Decrease) in Dollars	Percent
Additions:					
Employer contributions	$ 509,209,160	$ 526,240,864	$ 587,748,221	$ (17,031,704)	– 3.2%
Employee contributions	134,157,866	134,837,512	134,159,171	(679,646)	– 0.5%
Net investment income (loss) (includes security lending activities)	1,465,457,845	1,865,645,039	(424,787,945)	(400,187,194)	– 21.5%
Other	35,954,901	35,158,714	27,479,205	796,187	2.3%
Total additions	2,144,779,772	2,561,882,129	324,598,652	(417,102,357)	– 16.3%
Deductions:					
Benefits	950,137,294	890,115,295	831,661,745	60,021,999	6.7%
Refunds	30,990,651	37,745,951	33,662,521	(6,755,300)	– 17.9%
Administrative expenses	5,000,609	5,085,445	5,134,047	(84,836)	– 1.7%
Total deductions	986,128,554	932,946,691	870,458,313	53,181,863	5.7%
Net increase (decrease)	1,158,651,218	1,628,935,438	(545,859,661)	(470,284,220)	– 28.9%
Net position					
Beginning of year	11,490,959,220	9,862,023,782	10,407,883,443	1,628,935,438	16.5%
End of year	$ 12,649,610,438	$ 11,490,959,220	$ 9,862,023,782	$ 1,158,651,218	10.1%

Additions to Fund Net Position

Total additions were $2,144,779,772 in 2020, $2,561,882,129 in 2019, and $324,598,652 in 2018.

Employer contributions decreased to $509,209,160 in 2020 from $526,240,864 in 2019 and $587,748,221 in 2018. Employer contributions are statutorily set at 1.54 times employee contributions collected two years prior. The County made supplemental contributions of $309,214,508 in 2020, $320,296,720 in 2019, and $378,436,000 in 2018.

Employee contributions, including permissive service credit purchases, decreased to $134,157,866 in 2020 from $134,837,512 in 2019, and increased from $134,159,171 in 2018 when compared to 2019 employee contributions. The majority of members contribute 8.5% of covered wages.

Net investment income totaled $1,465,457,845 for 2020 compared to net investment income of $1,865,645,039 for 2019 and net investment loss of ($424,787,945) for 2018. Investment earnings fluctuate primarily from the lower investment return in 2020 and overall performance of the financial markets from year to year.

Deductions to Fund Net Position

Total deductions were $986,128,554 in 2020, $932,946,691 in 2019, and $870,458,313 in 2018.

Benefits increased to $950,137,294 in 2020 from $890,115,295 in 2019 and $831,661,745 in 2018 due primarily to the 3% annual cost of living increases for annuitants and an increase in the number of retirees.

Refunds decreased to $30,990,651 in 2020 from $37,745,951 in 2019 and increased from $33,662,521 in 2018. These changes are due to fluctuations in refund applications.

The cost to administer the Fund decreased by 1.7% to $5,000,609 in 2020 from $5,085,445 in 2019. Comparatively, the cost to administer the Fund decreased by 0.9 % to $5,085,445 in 2019 from $5,134,047 in 2018.

Actuarial Information

Pension Benefits

Under GASB Statement No. 67, *Financial Reporting for Pension Plans*, the Fund's funding for pension benefits is as follows:

Funding for Pension Benefits For the Years Ended December 31,

	2020	2019	2018
Total pension liability	$ 27,634,518,984	$ 25,071,941,811	$ 21,723,236,738
Plan fiduciary net position	12,649,610,438	11,490,959,220	9,862,023,782
Employer's net pension liability	$ 14,984,908,546	$ 13,580,982,591	$ 11,861,212,956
Plan fiduciary net position as a percentage of the total pension liability	45.77%	45.83%	45.40%

Actuarial Information (continued)

Postemployment Healthcare Benefits

Under GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, the Fund's funding for postemployment healthcare benefits is as follows:

Funding for Healthcare Benefits For the Years Ended December 31,

	2020	2019	2018
Total other postemployment benefits liability	$ 2,105,154,520	$ 1,900,989,370	$ 1,534,053,569
Plan fiduciary net position	—	—	—
Employer's net other postemployment benefits liability	$ 2,105,154,520	$ 1,900,989,370	$ 1,534,053,569

Contributions for postemployment healthcare benefits are made on a "pay–as–you–go" basis, resulting in a 0.00% funded ratio.

Combined

The Fund actuary has performed a combined valuation of the pension and postemployment healthcare benefits provided by the Fund to measure the overall funded status and contribution requirements of the Fund. Such a valuation is required under Chapter 40, Article 5/9—199 of the Illinois Pension Code which provides that the Fund shall submit a report each year containing a detailed statement of the affairs of the Fund, its income and expenditures, and assets and liabilities. The combined valuation reflects the actuarial assumptions adopted by the Board based on the results of an actuarial experience study. These assumptions conform to the actuarial standards recommended by the Fund's actuary and were used by the Fund's actuary to present the combined funding status in accordance with Section 9—199. The Fund's funding under the combined actuarial valuation is as follows:

Funding for Combined Pension and Postemployment Healthcare Benefits For the Years Ended December 31,

	2020	2019	2018
Unfunded actuarial accrued liability	$ 6,655,454,351	$ 6,966,299,527	$ 6,791,017,319
Funded ratio	63.87%	61.19%	60.75%

Contact Information

This financial report is designed to provide the employer, plan participants and others with a general overview of the Fund's finances and show accountability for money it receives. Questions concerning any data provided in the report or requests for additional information should be addressed to:

County Employees' and Officers' Annuity
and Benefit Fund of Cook County
Attention: Executive Director
70 West Madison Street
Suite 1925
Chicago, Illinois 60602

Combining Statements of Pension Plan Fiduciary Net Position and Postemployment Healthcare Plan Net Position

December 31, 2020

Assets	Total	Pension	Postemployment Healthcare
RECEIVABLES			
Employer contributions less allowance of $6,390,937 in 2020	$ 195,048,545	$ 195,048,545	$ —
Employee contributions	5,634,981	5,634,981	—
Accrued investment income	35,002,953	35,002,953	—
Receivable for securities sold	116,443,382	116,443,382	—
Due from Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	—	—	—
EGWP/Medicare Part D subsidy & other	12,210,594	2,025,337	10,185,257
Prescription rebates	873,121	—	873,121
Imprest balance receivable	1,441,000	—	1,441,000
Other	553,952	553,952	—
Total receivables	367,208,528	354,709,150	12,499,378
INVESTMENTS			
U.S. and international equities	6,930,194,686	6,930,194,686	—
U.S. Government and government agency obligations	1,021,751,132	1,021,751,132	—
Corporate and foreign government obligations	1,424,006,422	1,424,006,422	—
Collective international equity fund	82,904,306	82,904,306	—
Commingled fixed income fund	40,925,720	40,925,720	—
Private global fixed fund limited partnership	244,996,202	244,996,202	—
Exchange traded funds	8,037,180	8,037,180	—
Private equities	938,804,581	938,804,581	—
Hedge funds	740,040,004	740,040,004	—
Real estate funds	776,471,639	776,471,639	—
Short-term Investment	267,036,118	267,036,118	—
Total Investments	12,475,167,990	12,475,167,990	—
Collateral held for securities on loan	594,408,571	594,408,571	—
Total assets	13,436,785,089	13,424,285,711	12,499,378
LIABILITIES			
Accounts payable	6,082,240	6,082,240	—
Healthcare & other benefits payable	12,499,378	—	12,499,378
Due to Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	686,022	686,022	—
Payable for securities purchased	173,498,440	173,498,440	—
Securities lending collateral	594,408,571	594,408,571	—
Total liabilities	787,174,651	774,675,273	12,499,378
Net position			
Net position restricted for pensions	12,649,610,438	12,649,610,438	—
Net position held in trust for postemployment healthcare benefits	—	—	—
Total	$ 12,649,610,438	$12,649,610,438	$ —

See accompanying notes to financial statements.

Combining Statements of Pension Plan Fiduciary Net Position and Postemployment Healthcare Plan Net Position (continued)

December 31, 2019

Assets	Total	Pension	Postemployment Healthcare
RECEIVABLES			
Employer contributions less allowance of $7,502,563 in 2019	$ 203,949,497	$ 203,949,497	$ —
Employee contributions	5,728,669	5,728,669	—
Accrued investment income	33,186,100	33,186,100	—
Receivable for securities sold	126,392,197	126,392,197	—
Due from Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	382,786	382,786	—
EGWP/Medicare Part D subsidy & other	11,593,953	2,774,646	8,819,307
Prescription rebates	814,807	—	814,807
Impress balance receivable	1,441,000	—	1,441,000
Other	27,302	27,302	—
Total receivables	383,516,311	372,441,197	11,075,114
INVESTMENTS			
U.S. and international equities	6,282,967,633	6,282,967,633	—
U.S. Government and government agency obligations	1,051,214,578	1,051,214,578	—
Corporate and foreign government obligations	1,106,718,809	1,106,718,809	—
Collective international equity fund	83,116,013	83,116,013	—
Commingled fixed income fund	41,141,429	41,141,429	—
Private global fixed fund limited partnership	258,865,492	258,865,492	—
Exchange traded funds	8,691,798	8,691,798	—
Private equities	678,909,985	678,909,985	—
Hedge funds	730,203,620	730,203,620	—
Real estate funds	689,481,138	689,481,138	—
Short-term investment	330,944,641	330,944,641	—
Total Investments	11,262,255,136	11,262,255,136	—
Collateral held for securities on loan	596,473,697	596,473,697	—
Total assets	12,242,245,144	12,231,170,030	11,075,114
LIABILITIES			
Accounts payable	8,693,505	8,693,505	—
Healthcare & other benefits payable	11,075,114	—	11,075,114
Due to Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	—	—	—
Payable for securities purchased	135,043,608	135,043,608	—
Securities lending collateral	596,473,697	596,473,697	—
Total liabilities	751,285,924	740,210,810	11,075,114
Net position			
Net position restricted for pensions	11,490,959,220	11,490,959,220	—
Net position held in trust for postemployment healthcare benefits	—	—	—
Total	$11,490,959,220	$11,490,959,220	$ —

See accompanying notes to financial statements.

Combining Statements of Changes in Pension Plan Fiduciary Net Position and Postemployment Healthcare Plan Net Position

Year Ended December 2020

	Total	Pension	Postemployment Healthcare
ADDITIONS			
Employer contributions			
Statutory	$ 199,994,652	$ 199,994,652	$ —
Supplemental	309,214,508	309,214,508	—
Allocation to postemployment healthcare	—	(43,430,445)	43,430,445
Total employer contributions	509,209,160	465,778,715	43,430,445
Employee contributions			
Salary deductions	129,389,135	129,389,135	—
Refund repayments	1,877,909	1,877,909	—
Former and miscellaneous service payments	528,376	528,376	—
Optional payments and deductions	109,582	109,582	—
Deductions in lieu of disability	2,252,864	2,252,864	—
Total employee contributions	134,157,866	134,157,866	—
Investment income			
Net appreciation in fair value of investments	1,305,533,430	1,305,533,430	—
Dividends	114,984,928	114,984,928	—
Interest	78,568,641	78,568,641	—
	1,499,086,999	1,499,086,999	—
Less investment expenses	(36,023,573)	(36,023,573)	—
Net investment income	1,463,063,426	1,463,063,426	—
Securities lending			
Income	2,912,136	2,912,136	—
Expenses	(517,717)	(517,717)	—
Net securities lending income	2,394,419	2,394,419	—
Other			
Employer federal subsidized programs	4,434,155	4,434,155	—
EGWP/Medicare Part D subsidy	28,493,977	—	28,493,977
Prescription plan rebates	3,706,118	—	3,706,118
Employee movements (to) from Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	(714,659)	(714,659)	—
Miscellaneous	35,310	35,310	—
Total other additions	35,954,901	3,754,806	32,200,095
Total additions	2,144,779,772	2,069,149,232	75,630,540
DEDUCTIONS			
Benefits			
Annuity			
Employee	799,105,038	799,105,038	—
Spouse and children	64,617,964	64,617,964	—
Disability			
Ordinary	9,808,737	9,808,737	—
Duty	975,015	975,015	—
Healthcare less annuitant contributions of $52,821,697 in 2020	75,630,540	—	75,630,540
Total benefits	950,137,294	874,506,754	75,630,540
Refunds	30,990,651	30,990,651	—
Net administrative expenses	5,000,609	5,000,609	—
Total deductions	986,128,554	910,498,014	75,630,540
Net increase (decrease)	1,158,651,218	1,158,651,218	—
Net position			
Beginning of year	11,490,959,220	11,490,959,220	—
End of year	$ 12,649,610,438	$ 12,649,610,438	$ —

See accompanying notes to financial statements.

Combining Statements of Changes in Pension Plan Fiduciary Net Position and Postemployment Healthcare Plan Net Position (continued)

Year Ended December 2019

	Total	Pension	Postemployment Healthcare
ADDITIONS			
Employer contributions			
Statutory	$ 205,944,144	$ 205,944,144	$ —
Supplemental	320,296,720	320,296,720	—
Allocation to postemployment healthcare	—	(38,237,172)	38,237,172
Total employer contributions	526,240,864	488,003,692	38,237,172
Employee contributions			
Salary deductions	129,339,031	129,339,031	—
Refund repayments	2,674,863	2,674,863	—
Former and miscellaneous service payments	768,064	768,064	—
Optional payments and deductions	41,495	41,495	—
Deductions in lieu of disability	2,014,059	2,014,059	—
Total employee contributions	134,837,512	134,837,512	—
Investment income			
Net appreciation (depreciation) in fair value of investments	1,681,234,945	1,681,234,945	—
Dividends	135,119,218	135,119,218	—
Interest	82,809,998	82,809,998	—
	1,899,164,161	1,899,164,161	—
Less investment expenses	(36,827,682)	(36,827,682)	—
Net investment income	1,862,336,479	1,862,336,479	—
Securities lending			
Income	3,985,214	3,985,214	—
Expenses	(676,654)	(676,654)	—
Net securities lending income	3,308,560	3,308,560	—
Other			
Employer federal subsidized programs	5,783,060	5,783,060	—
EGWP/Medicare Part D subsidy	25,698,131	—	25,698,131
Prescription plan rebates	3,184,779	—	3,184,779
Employee movements (to) from Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	252,406	252,406	—
Miscellaneous	240,338	240,338	—
Total other additions	35,158,714	6,275,804	28,882,910
Total additions	2,561,882,129	2,494,762,047	67,120,082
DEDUCTIONS			
Benefits			
Annuity			
Employee	751,788,339	751,788,339	—
Spouse and children	60,115,798	60,115,798	—
Disability			
Ordinary	10,473,241	10,473,241	—
Duty	617,835	617,835	—
Healthcare less annuitant contributions of $52,401,260 in 2019	67,120,082	—	67,120,082
Total benefits	890,115,295	822,995,213	67,120,082
Refunds	37,745,951	37,745,951	—
Net administrative expenses	5,085,445	5,085,445	—
Total deductions	932,946,691	865,826,609	67,120,082
Net increase (decrease)	1,628,935,438	1,628,935,438	—
Net position			
Beginning of year	9,862,023,782	9,862,023,782	—
End of year	$ 11,490,959,220	$ 11,490,959,220	$ —

See accompanying notes to financial statements.

NOTE 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

County Employees' and Officers' Annuity and Benefit Fund of Cook County (the Fund or Plan) is administered in accordance with Chapter 40, Article 5/9 of the Illinois Compiled Statutes (the Statutes).

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

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

Method of Accounting — The financial statements are prepared using the accrual basis of accounting. Employer contributions are recognized as income pursuant to legal requirements as specified by the Illinois Compiled Statutes. Employee contributions are recognized in the period in which the contributions are due. Benefits and refunds are recognized when due and payable in accordance with the terms of the Fund.

Investments — Investments are reported at fair value, which generally represents reported market value as of the last business day of the year. Where less than an entire investment holding is sold, average value is used to determine realized gain or loss. Purchases and sales of securities are recorded on a trade–date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex–dividend date. Net appreciation (depreciation) in fair value of investments includes gains and losses on investments bought and sold, as well as held during the year.

Allocated Expenses — Administrative expenses are initially paid by the Fund. These expenses are allocated between the Fund and the Forest Preserve District Employees' Annuity and Benefit Fund of Cook County (the Forest Fund) on a pro rata basis, as applicable.

Capital Assets — The Fund has set a capitalization threshold of $100,000 for all capital asset types. As of December 31, 2020 and 2019, the Fund does not have any capital assets.

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

Subsequent Events — Subsequent events have been evaluated through the auditor's report date, which is the date the financial statements were available to be issued.

NOTE 2. PLAN DESCRIPTION

The Fund was established on January 1, 1926, and is governed by legislation contained in the Illinois Compiled Statutes (the Statutes), particularly Chapter 40, Article 5/9 (the Article). Effective with the signing of Public Act 96—0889 into law on April 14, 2010, participants that first became contributors on or after January 1, 2011 are Tier 2 participants. All other participants that were contributing prior to January 1, 2011 are Tier 1 participants. The pension plan provisions can be amended only by the Illinois Legislature. The pension plan is a single employer defined benefit pension plan with a defined contribution minimum. The pension plan was established for the purpose of providing retirement, death and disability benefits for full-time employees of the County and the dependents of such employees.

NOTE 2. PLAN DESCRIPTION (CONTINUED)

The Fund is considered to be a fiduciary fund of Cook County, Illinois and is included in the County's financial statements.

The Statutes authorize a Board of Trustees (the Board) of nine members to carry out the provisions of the Article. According to the Article, two members of the Board are ex officio, four are elected by the employee members of the Fund and three are elected by the annuitants of the Fund. The two ex officio members are the Comptroller of Cook County, or someone chosen by the Comptroller, and the Treasurer of Cook County, or someone chosen by the Treasurer. All members of the Board are fiduciaries with respect to the Fund and are statutorily mandated to discharge their duties, as such, solely in the interest of the Fund's participants and beneficiaries.

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

Covered employees are required to contribute 8.5% (9% for sheriffs) of their salary to the Fund, subject to the salary limitations for Tier 2 participants in Article 5/1—160. If an employee leaves covered employment without qualifying for an annuity, accumulated contributions are refunded with interest (3% or 4% depending on when the employee became a participant). The County's total contribution is the amount of contributions made by the employees to the Fund in the calendar year two years prior to the year for which annual applicable tax is levied, multiplied by 1.54. The source of funds for the County's contributions has been designated by State Statute as the County's annual property tax levy. The County's payroll for employees covered by the Fund for the years ended December 31, 2020 and 2019 was $1,532,744,306 and $1,553,498,503, respectively.

The Fund provides retirement as well as death and disability benefits. Tier 1 employees age 50 or older and Tier 2 employees age 62 or older are entitled to receive a minimum formula annuity of 2.4% for each year of credited service if they have at least 10 years of service. The maximum benefit is 80% of the final average monthly salary. For Tier 1 employees under age 60 and Tier 2 employees under age 67, the monthly retirement benefit is reduced by ½% for each month the participant is below that age. The reduction is waived for Tier 1 participants having 30 or more years of credited service.

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

At December 31, 2020 and 2019, participants consisted of the following:

	2020	2019
Active members	19,102	19,551
Retired members	16,572	16,305
Beneficiaries	2,870	2,838
Inactive members	16,404	15,422
Total	54,948	54,116

NOTE 3. EMPLOYER'S PENSION LIABILITY

Net Pension Liability

The components of the employer's net pension liability of the Fund for the years ended December 31, 2020 and 2019 are as follows:

	2020	2019
Total pension liability	$ 27,634,518,984	$ 25,071,941,811
Plan fiduciary net position	12,649,610,438	11,490,959,220
Employer's net pension liability	$ 14,984,908,546	$ 13,580,982,591
Plan fiduciary net position as a percentage of the total pension liability	45.77%	45.83%

Refer to the schedule of changes in the employer's net pension liability and related ratios in the required supplementary information for additional information related to the funded status of the Fund.

The net pension liability was determined by actuarial valuations performed as of December 31, 2020 and 2019 using the following actuarial methods and assumptions:

Actuarial valuation date	December 31, 2020	December 31, 2019
Actuarial cost method	Entry Age Normal	Entry Age Normal
Actuarial assumptions Inflation	2.75% per year, compounded annually;	2.75% per year, compounded annually;
Salary increases	3.50% to 8.00%, based on age;	3.50% to 8.00%, based on age;
Investment rate of return	7.25% per year, compounded annually;	7.25% per year, compounded annually;
Retirement age	Rates of retirement for each age from 50 to 80 based on recent experience of the Plan where all employees are assumed to retire by age 80	Rates of retirement for each age from 50 to 80 based on recent experience of the Plan where all employees are assumed to retire by age 80
Mortality	RP–2014 Blue Collar Mortality Table, base year 2006. Buck Modified MP—2017 projection scale.	RP–2014 Blue Collar Mortality Table, base year 2006. Buck Modified MP–2017 projection scale.
Postretirement annuity increase	Tier 1 participants – 3.0% compounded annually Tier 2 participants – the lesser of 3.0% or one half of the increase in the Consumer Price Index	Tier 1 participants – 3.0% compounded annually Tier 2 participants – the lesser of 3.0% or one half of the increase in the Consumer Price Index

The actuarial assumptions used in the December 31, 2020 and 2019 valuations were based on the results of an actuarial experience study conducted by Conduent, Inc. (formerly Buck Consultants, LLC) dated February 2018 covering a four—year period ending December 31, 2016. The Fund engaged Cavanaugh Macdonald Consulting to prepare the December 31, 2020 and 2019 valuations.

NOTE 3. EMPLOYER'S PENSION LIABILITY (continued)

Discount Rate

The discount rate used to measure the total pension liability at December 31, 2020 and 2019 was 3.68% and 4.14%, respectively. The projection of cash flows used to determine the discount rate assumed that contributions will continue to follow the current funding policy. Based on this assumption, the Fund's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current plan members. A municipal bond rate of 2.12% and 2.75% at December 31, 2020 and 2019, respectively, and the long-term investment rate of return of 7.25% at December 31, 2020 and 2019 was used in the development of the blended discount rate. The municipal bond rates are based on the S&P Municipal Bond 20 Year High Grade Rate Index. As a result, for December 31, 2020 and 2019, the long-term rate of return of 7.25% was applied to projected benefit payments through 2044 and 2042 respectively and the municipal bond rate of 2.12% at December 31, 2020 and 2.75% at December 31, 2019, was applied to all benefit payments after that date, resulting in a blended discount rate of 3.68% at December 31, 2020 and 4.14% at December 31, 2019.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following is an analysis of the net pension liability's sensitivity to changes in the discount rate at December 31, 2020 and 2019. The following table presents the net pension liability of the employer using the blended discount rate as well as the employer's net pension liability calculated using a discount rate 1 percent lower and 1 percent higher than the current discount rate:

	1% Decrease 2.68%	Current Discount Rate 3.68%	1% Increase 4.68%
Net Pension Liability — December 31, 2020	$ 19,498,281,825	$ 14,984,908,546	$ 11,352,586,219

	1% Decrease 3.14%	Current Discount Rate 4.14%	1% Increase 5.14%
Net Pension Liability — December 31, 2019	$ 17,585,226,992	$ 13,580,982,591	$ 10,346,852,43

NOTE 4. SUMMARY OF EMPLOYER FUNDING POLICIES

Statutory Funding

Employer contributions are funded primarily through a tax levied by Cook County, Illinois. The employer contributions to be remitted to the Fund are equal to the total contributions made by the employees to the Fund in the calendar year two years prior, multiplied by 1.54.

Supplemental Funding

Per the 2020 IGA (Intergovernmental Agreement), the County is required to make supplemental payments totaling $306,214,508 by November 30, 2020, to promote the long-term fiscal sustainability of the Fund. During the year ended December 31, 2020, the County made supplemental contributions to the Fund totaling $309,214,508, which includes $28,000,000 paid on December 31, 2020, pertaining to the 2021 IGA. Per the 2019 IGA, the County is required to make supplemental payments totaling $320,296,720 by November 30, 2019. During the year ended December 31, 2019, the County made supplemental contributions to the Fund totaling $320,296,720, which includes $25,000,000 paid on December 31, 2019 pertaining to the 2020 IGA.

NOTE 5. INVESTMENTS

Investment Policy

The Board of Trustees is responsible for establishing reasonable and consistent investment objectives, policies, and guidelines governing the investment of Fund assets in accordance with the Illinois Compiled Statutes. The Fund is authorized to invest in bonds, notes, certificates of indebtedness, mortgage notes, real estate, stocks, shares, debentures, or other obligations or securities as set forth in the "prudent person" provisions of the state statutes. All of the Fund's financial instruments are consistent with the permissible investments outlined in the state statutes and any index-linked financial instruments are limited to those indices that replicate the permissible investments outlined in the State Statutes. During the years ended December 31, 2020 and 2019, there were no significant changes to the investment policy.

The Fund's investment policy in accordance with the Statutes establishes the following target allocation across asset classes:

Asset Class	Target Allocation %	Long–term Expected Real Rate of Return
Domestic equities	33.00%	5.58%
International equities	21.00%	5.88%
Fixed income	26.00%	1.43%
Real estate funds	9.00%	4.52%
Private equity	4.00%	6.91%
Hedge Funds	6.00%	2.91%
Short–term investment	1.00%	0.03%
Total investments	100.00%	

Long–Term Expected Real Rate of Return

The long—term expected real rates of return are the nominal expected returns for various asset classes net of the long—term inflation assumption of 2.00%. The nominal expected return is expressed as the annualized growth rate over 30 years (i.e., geometric or compounded return). A building block methodology is employed to develop long-term return expectations. Building block includes a long-term estimate of the short-term real rate, inflation, term premium, credit premium, equity risk premium among others. Current economic conditions (inflation, yields, valuation) serve as a starting point for development; however, over a 30–year horizon, risk premiums are largely influenced by long-term history. The 30-year geometric long–term expected real rate of return for each major asset class included with the Fund's target asset allocation as of December 31, 2020 are listed in the table above.

Annual Money–Weighted Rate of Return

The annual money–weighted rate of return on pension plan investments, net of pension plan investment expense, was 12.50% and 19.07% for the years ended December 31, 2020 and 2019, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE 5. INVESTMENTS (continued)

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Fund's investment policy is an average credit quality for each manager's total fixed income portfolio (Corporate and U.S. Government holdings) of not less than A— by two out of three credit agencies (Moody's Investor Service, Standard & Poor's and/or Fitch). The following table presents a summarization of the Fund's credit quality ratings of investments at December 31, 2020 and 2019 valued by Moody's Investors Service, Standard & Poor's and/or Fitch:

Type of Investment	Rating	2020	2019
U.S. Government and government agency obligations	Aaa	$ 940,302,740	$ 1,008,730,719
	Aa	5,796,599	4,512,518
	A	1,219,136	1,647,521
	Baa	3,645,493	566,991
	Ba	—	113,670
	Not Rated	70,787,164	35,643,159
		$ 1,021,751,132	$ 1,051,214,578
Corporate and foreign government obligations	Aaa	$116,667,847	$122,430,000
	Aa	44,788,835	38,097,442
	A	345,792,273	218,228,365
	Baa	468,489,357	402,222,020
	Ba	114,801,400	64,735,538
	B	46,954,187	28,690,310
	Caa	1,698,529	3,336,325
	Ca	366,750	—
	Not Rated	284,447,244	228,978,809
		$ 1,424,006,422	$ 1,106,718,809
Commingled fixed income fund	Not Rated	$ 40,925,720	$ 41,141,429
Short–term investment	Not Rated	$ 267,036,118	$ 330,944,641

NOTE 5. INVESTMENTS (continued)

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Investments with longer maturities are subject to increased risk of adverse interest rate changes. In an effort to mitigate this risk, the Fund's investment policy states that the duration for each manager's total fixed income portfolio shall not exceed 30% of the duration of its respective fixed income performance benchmark *(Bloomberg Barclays US Aggregate Fixed Income Index, Bloomberg Barclays US 1—3 Year Government/Credit Index*, which was 6.22 years at December 31, 2020 and 5.87 years at December 31, 2019). The following table presents a summarization of the Fund's debt investments at December 31, 2020 and 2019, using the segmented time distribution method:

Type of Investment	Maturity	2020	2019
U.S. Government and government agency obligations	Less than 1 year	$ 12,752,364	$ —
	1—5 years	254,759,387	255,840,867
	5—10 years	209,146,971	188,143,448
	Over 10 years	545,092,410	607,230,263
		$ 1,021,751,132	$ 1,051,214,578
Corporate and foreign government obligations	Less than 1 year	$16,680,318	$6,216,627
	1—5 years	370,773,966	271,756,368
	5—10 years	435,323,612	337,402,395
	Over 10 years	601,228,526	491,343,419
		$ 1,424,006,422	$ 1,106,718,809
Commingled fixed income fund	1—5 years	$ 40,925,720	$ 41,141,429
Short—term investment	Less than 1 year	$ 267,036,118	$ 330,944,641

NOTE 5. INVESTMENTS (continued)

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Fund's exposure to foreign currency risk at December 31, 2020 and 2019 is as follows:

Type of Investment	Fair Value (USD) 2020	Fair Value (USD) 2019
U.S. and international equities		
Australian dollar	$ 71,073,063	$ 64,975,042
Brazil real	40,620,209	47,176,852
British pound sterling	224,724,672	269,787,968
Canadian dollar	134,320,290	143,967,483
Chilean peso	2,884,589	2,690,695
Colombian peso	79,443	229,259
Danish krone	45,672,504	27,717,442
Egyptian pound	185,284	254,698
European euro	573,587,863	548,901,567
Hong Kong dollar	222,846,809	186,091,181
Hungarian forint	870,457	904,850
Indian rupee	21,077,536	19,722,568
Indonesian rupiah	13,010,969	10,845,405
Israeli shekel	10,385,739	8,409,897
Japanese yen	381,539,043	394,011,003
Malaysian ringgit	6,329,165	6,128,297
Mexican peso	14,010,089	13,549,503
New Taiwan dollar	82,944,533	64,691,046
New Turkish lira	—	321,273
New Zealand dollar	1,620,420	6,494,738
Norwegian krone	8,873,462	14,780,532
Philippines peso	4,196,132	4,751,295
Polish zloty	1,867,353	3,533,224
Russian ruble	335,264	473,980
Singapore dollar	28,663,462	32,354,412
South African rand	14,808,018	17,120,665
South Korean won	73,289,937	52,590,803
Swedish krona	62,559,810	53,562,423
Swiss franc	140,257,776	137,494,181
Thailand baht	10,761,483	10,250,963
Turkish lira	394,915	—
United Arab Emirates dirham	2,782,255	2,184,317
U.S. dollar	4,733,622,142	4,137,000,071
Total U.S. and international equities	$ 6,930,194,686	$ 6,282,967,633

NOTE 5. INVESTMENTS (continued)

Foreign Currency Risk (continued)

Type of Investment	Fair Value (USD) 2020	Fair Value (USD) 2019
Corporate and foreign government obligations		
Australian dollar	$ 52,451	$ —
Brazil real	118,469	42,536
British pound sterling	2,773,406	1,985,212
Canadian dollar	402,084	576,455
Chinese yuan renminbi	53,116	—
Colombian peso	157,657	—
European euro	15,220,670	11,066,623
Hungarian forint	45,446	—
Mexican peso	742,361	263,747
New Zealand dollar	29,937	—
Norwegian krone	755,399	—
Polish zloty	535,677	863
Russian ruble	471,766	—
South African rand	1,291,103	270,338
Turkish lira	1,048,644	—
Norwegian krone	—	728,988
U.S. dollar	1,400,308,236	1,091,784,047
Total corporate and foreign government obligations	$ 1,424,006,422	$ 1,106,718,809
Private equities		
European euro	$ 66,889,887	$ 45,808,248
U.S. dollar	1,116,910,896	633,101,737
Total private equities	$ 1,183,800,783	$ 678,909,985

Investment Activity

For the years ended December 31, 2020 and 2019, net realized gain on investments sold, reflecting the difference between the proceeds received and cost value of securities sold, was $214,539,440 and $203,265,693, respectively. These amounts are included in the net appreciation (depreciation) in fair value of investments as reported on the combining statements of changes in pension plan fiduciary net position and postemployment healthcare plan net position. The calculation of realized gains and losses is independent of the calculation of net appreciation (depreciation) in the fair value of plan investments. Investments purchased in a previous year and sold in the current year result in their realized gains and losses being reported in the current year and their net appreciation (depreciation) in Fund assets being reported in both the current year and the previous years.

NOTE 6. DERIVATIVES

Derivative transactions involve, to varying degrees, credit risk, interest rate risk and market risk. Credit risk is the possibility that a loss may occur because a party to a transaction fails to perform according to the previously agreed upon terms. Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Market risk is the possibility that a change in interest or currency rates will cause the value of a financial instrument to decrease or become more costly to settle.
The following table summarizes the derivatives held within the Fund's investment portfolio as of December 31, 2020 and 2019.

	Notional Amounts		Fair Value	
	2020	2019	2020	2019
Hedging derivative instruments				
Foreign currency contracts purchased	$ —	$ —	$ (96,196,997)	$ (82,053,047)
Foreign currency contracts sold	—	—	96,083,458	81,926,715
Futures				
Equity	6,860,640	—	45,545	—
Fixed Income	(161,114,898)	(105,683,341)	(504,223)	(1,305,798)
Swaps				
Interest rate swaps	—	—	739,957	—
Zero coupon swaps	—	—	87,817	—
Credit default swaps	—	—	(8,897)	—

Forward Currency Forward Contracts

Forward currency contracts are used to hedge against fluctuations in foreign currency—denominated assets used primarily in portfolio trade settlements. These contracts are a cash contract in which a seller agrees to deliver a specific cash commodity to a buyer sometime in the future. Forward agreements are subject to the creditworthiness of the counterparties, which are principally large financial institutions. Forward currency contracts are reported at fair value within the combining statement of pension plan fiduciary net position and postemployment healthcare plan net position included in investments. The gain or loss on forward currency contracts is recognized and recorded on the combining statement of changes in pension plan fiduciary net position and postemployment healthcare plan net position as part of investment income. The foreign currency contracts are short–term in nature.

NOTE 6. DERIVATIVES (continued)

Forward Currency Forward Contracts (continued)

The Fund's exposure to foreign currency risk at December 31, 2020 and 2019 is as follows:

	2020	2019
Foreign currency exchange sales		
Currency		
Australian dollar	$ 6,399,671	$ 5,922,970
Brazil real	1,750,534	107,216
British pound sterling	2,885,510	3,333,837
Canadian dollar	4,244,880	2,475,982
Chilean peso	—	594,846
Chinese yuan renminbi	5,176,485	2,847,408
Colombian peso	337,617	297,762
Czech koruna	1,314,366	527,865
European euro	2,463,484	5,109,574
Hong Kong dollar	18,910	131,792
Hungarian forint	244,716	431,020
Indian rupee	2,552,091	1,780,857
Indonesian rupiah	1,740,371	251,921
Israeli shekel	2,404,256	841,443
Japanese yen	3,671,796	2,441,775
Mexican peso	1,231,826	993,987
New Taiwan dollar	—	1,243,234
New Zealand dollar	769,860	533,765
Norwegian krone	2,053,075	2,467,533
Peruvian sol	—	502,988
Philippines peso	340,803	266,597
Polish zloty	1,028,284	637,504
Russian ruble	2,175,746	2,068,233
Singapore dollar	742,808	2,969,976
South Korean won	793,229	1,264,814
South African rand	47,697	—
Swedish krona	1,535,423	1,623,465
Swiss franc	2,645,447	868,637
Thailand baht	1,140,167	291,623
Turkish lira	1,062,606	41,458
U.S. dollar	45,311,800	39,056,633
Total	$ 96,083,458	$ 81,926,715

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NOTE 6. DERIVATIVES (continued)

Forward Currency Forward Contracts (continued)

	2020	2019
Foreign currency exchange purchases		
Currency		
Australian dollar	$ (1,514,900)	$ (1,213,651)
Brazil real	(1,065,083)	(1,098,767)
British pound sterling	(3,720,531)	(3,642,161)
Canadian dollar	(1,449,233)	(590,784)
Chilean peso	(944,121)	(1,468,306)
Chinese yuan renminbi	(2,125,157)	(3,750,096)
Colombian peso	(861,240)	(791,855)
Czech koruna	(447,017)	(391,863)
European euro	(29,175,497)	(23,661,651)
Hong Kong dollar	(5,133,634)	(96,746)
Hungarian forint	(722,834)	(961,258)
Indian rupee	(478,918)	(791,964)
Indonesian rupiah	—	(1,008,583)
Israeli shekel	(217,863)	(402,227)
Japanese yen	(1,657,059)	(446,655)
Mexican peso	(276,438)	(216,356)
New Taiwan dollar	(408,259)	(1,347,741)
New Zealand dollar	(625,295)	(917,351)
Norwegian krone	(1,861,563)	(859,120)
Peruvian sol	—	(500,737)
Russian ruble	(537,760)	—
Philippines peso	(165,493)	(172,848)
Polish zloty	(309,279)	(147,110)
Singapore dollar	(42,597)	(408,598)
South Korean won	(600,976)	(535,524)
South African rand	(2,013,370)	(302,810)
Swedish krona	(292,856)	(530,282)
Swiss franc	(2,778,387)	(2,487,437)
Thailand baht	—	(282,400)
Turkish lira	—	(179,164)
U.S. dollar	(36,771,637)	(32,849,002)
	$ (96,196,997)	$ (82,053,047)

NOTE 6. DERIVATIVES (continued)

Futures & Swaps

Futures are agreements to purchase or sell a specific amount of an asset at a specified maturity for an agreed—upon price. Futures contracts are reported at fair value in the equity and fixed income investments on the combining statement of pension plan fiduciary net position and postemployment healthcare plan net position. The gain or loss on futures contracts is reported as part of investment income on the combining statement of changes in pension plan fiduciary net position and postemployment healthcare plan net position. These instruments are not rated by the credit rating agencies.

Swaps are arrangements to exchange currency or assets. Swaps are reported at fair value in the fixed income investments on the combining statement of pension plan fiduciary net position and postemployment healthcare plan net position. The gain or loss on futures contracts is reported as part of investment income on the combining statement of changes in pension plan fiduciary net position and postemployment healthcare plan net position. These instruments are not rated by the credit rating agencies.

The following table presents a summarization of the Fund's Futures and Swaps investments' interest rate risk exposure at December 31, 2020 and 2019, using the segmented time distribution method:

Derivative Type	Maturity	2020	2019
Futures	Less than 1 Year	$ (458,678)	$ (1,305,798)
Swaps	Less than 1 Year	$4,327	$ —
	1 – 5 years	166,141	—
	5 – 10 years	682,362	—
	Over 10 years	(33,953)	—
		$ 818,877	$ —

NOTE 7. WHEN–ISSUED TRANSACTIONS

The Fund may purchase securities on a when—issued basis, that is, obligate itself to purchase securities with delivery and payment to occur at a later date. At the time the Fund enters into a commitment to purchase the security, the transaction is recorded at the purchase price which equals fair value. The value at delivery may be more or less than the purchase price. No interest accrues to the Fund until delivery and payment takes place. As of December 31, 2020 and 2019, the Fund contracted to acquire securities on a when—issued basis with a total principal amount of approximately $60,305,143 and $31,356,662, respectively.

NOTE 8. FAIR VALUE MEASUREMENTS

GASB Statement No. 72, *Fair Value Measurement and Application*, established a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are described below:

NOTE 8. FAIR VALUE MEASUREMENTS (continued)

Basis of Fair Value Measurement

Level 1 Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities

Level 2 Quoted prices in markets that are not considered to be active or financial instruments for which all significant inputs are observable, either directly or indirectly

Level 3 Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable

The Fund categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The Fund has the following recurring fair value measurements as of December 31, 2020 and 2019:

		Fair Value Measurements at 12/31/2020 Using		
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level				
U.S. and international equities	$ 6,930,194,686	$ 6,930,194,686	$ —	$ —
U.S. Government and government agency obligations	1,021,751,132	502,789,238	518,961,894	—
Corporate and foreign government obligations	1,424,006,422	—	1,424,006,422	—
Exchange traded funds	8,037,180	8,037,180	—	—
Total investments by fair value level	9,383,989,420	$ 7,441,021,104	$ 1,942,968,316	$ —
Investments measured at net asset value	3,091,178,570			
Total investments at fair value	$ 12,475,167,990			

		Fair Value Measurements at 12/31/2019 Using		
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level				
U.S. and international equities	$ 6,282,967,633	$ 6,282,967,633	$ —	$ —
U.S. Government and government agency obligations	1,051,214,578	—	1,051,214,578	—
Corporate and foreign government obligations	1,106,718,809	—	1,106,718,809	—
Exchange traded funds	8,691,798	8,691,798	—	—
Total investments by fair value level	8,449,592,818	$ 6,291,659,431	$ 2,157,933,387	$ —
Investments measured at net asset value	2,812,662,318			
Total investments at fair value	$ 11,262,255,136			

NOTE 8. FAIR VALUE MEASUREMENTS (continued)

Level 1 Measurements

U.S. Government obligations, U.S and international equities and exchange traded funds are traded in active markets on national and international securities exchanges and are valued at closing prices on the measurement date.

Level 2 Measurements

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

	Fair Value		Unfunded Commitments	Redemption Frequency (If Eligible)	Redemption Notice Period
	12/31/2020	12/31/2019			
Investments measured at net asset value:					
Collective international equity fund (1)					
Lazard/Wilmington Emerging Markets Sudan Free Portfolio	$ 82,904,306	$ 83,116,013	$ —	Daily	N/A
Commingled fixed income fund (2)					
MacKay Shields Defensive Bond Arbitrage Fund Ltd.	40,925,720	41,141,429	—	Daily	5 days
Private global fixed fund limited partnership (3)					
Franklin Templeton Global Multisector Plus Fund, L.P.	244,996,202	258,865,492	—	Monthly	15 days
Private equities (4)	938,804,581	678,909,985	170,494,433	Closed Ended	N/A
Hedge funds (5)					
Burnham Harbor Fund Ltd.	533,277,504	535,014,672	—	Monthly	95 days
RC Kenwood Fund Ltd.	206,762,500	195,188,948	—	Quarterly	90 days
Real estate funds (6)					
JPMCB Strategic Property Fund	267,959,235	274,387,829	—	Quarterly	45 days
PRISA Separate Account	248,165,695	251,997,195	—	Quarterly	90 days
Artemis Real Estate Partners	12,321,643	8,259,296	36,428,876	Closed Ended	N/A
Others	248,025,066	154,836,818	63,992,550	Quarterly	90 days
Short–term investment (7)					
BNY Mellon EB Temporary Investment Fund	267,036,118	330,944,641	—	Daily	N/A
Total investments measured at net asset value	$3,091,178,570	$ 2,812,662,318			

(1) Collective international equity fund – The fund's investment objective is to achieve long-term capital appreciation by investing primarily in equity and equity-related securities of issuers that are located, or do significant business, in emerging market countries. The fair value of the investment in the fund has been determined using the NAV per share of the investment.

(2) Commingled fixed income fund – The fund's investment objective is to track the performance of the Barclays U.S. Aggregate Index. The fair value of the investment in the fund has been determined using the NAV per share of the investment.

(3) Private global fixed income fund limited partnership – The partnership's investment objective is to maximize total investment return by investing in a portfolio of fixed and floating rate debt securities and debt obligations of governments, government-related or corporate issuers worldwide, as well as derivative financial instruments. The fair value of the investment in the partnership fund has been determined using the NAV per share (or its equivalent) of the investment.

(4) Private equities – This investment consists of 79 limited partnership investments in 2020 and 78 in 2019, with an investment objective to achieve long-term capital appreciation and capital preservation through investments in limited partnerships, privately issued securities, private equity funds, and other pooled investments. Closed–end limited partnership interests are generally illiquid and cannot be redeemed. It is expected that liquidation of the limited partnership interests will generally coincide with the terms of the various underlying partnership agreements. These underlying private equity partnerships generally have a fund life per the Limited Partnership Agreements of approximately 10 to 12 years plus 2 to 3 one-year extensions. However, the underlying general partners may extend their funds indefinitely to facilitate an orderly liquidation of the underlying assets. The fair value of the investments in this type has been determined using the NAV per share (or its equivalent) of the investments.

(5) Hedge funds – The investment objective of the hedge funds is to invest in non-traditional portfolio managers, diversified portfolios of hedge funds having a low correlation with major investment markets, and diversified groups of alternative investment funds that invest or trade in a wide variety of financial instruments and strategies. The fair value of the investment in the hedge funds has been determined using the NAV per share (or its equivalent) of the investment.

(6) Real estate funds – These investments include a commingled pension trust fund, an insurance company separate account, and other real estate funds that are designed as funding vehicles for tax-qualified pension plans. Their investments are comprised primarily of real estate investments either directly owned or through partnership interests and mortgage and other loans on income producing real estate. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the investments. Due to the nature of the investments and available cash on hand, significant redemptions in this type of investment may at times be subject to additional restrictions.

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

NOTE 9. SECURITIES LENDING

State Statutes and the investment policy permit the Fund to lend its securities to broker—dealers and other entities with a simultaneous agreement to return collateral for the same securities in the future. The Fund's custodian, acting as the lending agent, lends securities for collateral in the form of cash, U.S. Government obligations and irrevocable letters of credit equal to 102% of the fair value of domestic securities plus accrued interest and 105% of the fair value of foreign securities plus accrued interest.

The Fund does not have the right to sell or pledge securities received as collateral unless the borrower defaults. The average term of securities loaned was 110 days for 2020 and 117 days for 2019; however, any loan may be terminated on demand by either the Fund or the borrower. Cash collateral was invested in a separately managed portfolio, which had an average weighted maturity at December 31, 2020 and 2019 of 76 and 56 days, respectively.

As of December 31, 2020 and 2019, the fair value (carrying amount) of loaned securities was $859,748,216 and $975,308,040, respectively. As of December 31, 2020 and 2019, the fair value (carrying amount) of cash collateral received by the Fund was $594,408,571 and $596,473,697, respectively. The cash collateral is included as an asset and a corresponding liability on the combining statements of pension plan fiduciary net position and postemployment healthcare plan net position. As of December 31, 2020 and 2019, the fair value (carrying amount) of non–cash collateral received by the Fund was $287,720,165 and $404,530,922, respectively.

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

Indemnification deals with the situation in which a client's securities are not returned due to the insolvency of a borrower. The contract with the lending agent requires indemnification to the Fund if borrowers fail to return the securities or fail to pay the Fund for income distributions by the issuers of securities while the securities are on loan.

	2020	2019
Securities loaned — backed by cash collateral		
U.S. and international equities	$ 358,795,706	$ 446,175,774
U.S. Government and government agency obligations	90,154,039	49,919,899
Exchange traded funds	4,320,584	6,664,738
Corporate and foreign government obligations	126,418,677	77,408,275
Total securities loaned — backed by cash collateral	579,689,006	580,168,686
Securities loaned — backed by non-cash collateral		
U.S. and international equities	201,131,621	333,379,234
U.S. Government and government agency obligations	78,153,339	55,824,110
Exchange traded funds	517,851	5,349,602
Corporate and foreign government obligations	256,399	586,408
Total securities loaned — backed by non-cash collateral	280,059,210	395,139,354
Total	$ 859,748,216	$ 975,308,040

NOTE 10. EMPLOYER'S POSTEMPLOYMENT HEALTHCARE LIABILITY

Plan Description

The Fund administers a Postemployment Group Healthcare Benefit Plan (PGHBP), a single—employer defined benefit postemployment healthcare plan. The PGHBP is administered in accordance with Chapter 40, Article 5/10 of the Illinois Compiled Statutes, which assigns the authority to establish and amend benefit provisions to the Fund's Board of Trustees. PGHBP provides a healthcare benefit to annuitants of Cook County, Illinois (the employer) who elect to participate in the PGHBP.

At December 31, 2020 and 2019, participants consisted of the following:

	2020	2019
Active members	19,102	19,551
Inactive plan members or beneficiaries currently receiving benefit payments	11,905	11,953
Inactive plan members entitled to but not yet receiving benefit payments	1,708	1,510
Total	32,715	33,014

Benefits provided — The PGHBP provides healthcare and vision benefits for annuitants and their dependents.

Contributions — The PGHBP is funded on a "pay–as–you–go" basis. For the valuation of the obligation as of December 31, 2020, the employee and spouse annuitants are expected to pay between 55% — 67% and 48% — 62% of the annual medical costs, respectively, which increased from the prior year ranges by 1% — 10% depending upon Medicare enrollment and coverage selection. The remaining costs are funded by an allocation from the Fund.

Method of Accounting — The PGHBP's financial statements have been combined with the Fund's financial statements and are presented using the accrual basis of accounting. Healthcare expenses are recognized when incurred and estimable.

Employer's Net Postemployment Healthcare Liability

The components of the employer's net postemployment healthcare liability at December 31, 2020 and 2019 were as follows:

	2020	2019
Total postemployment healthcare liability	$ 2,105,154,520	$ 1,900,989,370
Plan fiduciary net position	—	—
Employer's net postemployment healthcare liability	$ 2,105,154,520	$ 1,900,989,370
Plan fiduciary net position as a percentage of the total postemployment healthcare liability	0.00%	0.00%

NOTE 10. EMPLOYER'S POSTEMPLOYMENT HEALTHCARE LIABILITY (continued)

Employer's Net Postemployment Healthcare Liability (Continued)

Contributions for postemployment healthcare benefits are made on a "pay-as-you-go" basis. There are no dedicated assets for healthcare benefits resulting in a 0.00% funded ratio.

See the schedule of changes in the employer's net postemployment healthcare liability and related ratios in the required supplementary information for additional information related to the funded status of the PGHBP.

The net postemployment healthcare liability was determined by actuarial valuation performed as of December 31, 2020 and 2019 using the following actuarial methods and assumptions:

Actuarial valuation date	December 31, 2020	December 31, 2019
Actuarial cost method	Entry Age Normal	Entry Age Normal
Actuarial assumptions:		
Inflation	2.75% per year	2.75% per year
Salary increases	3.50% to 8.00%, based on age	3.50% to 8.00%, based on age
Health care cost trend rates	7.00% in the first year, decreasing by .25% per year until an ultimate rate of 4.75% is reached for pre–Medicare 5.50% in the first year, decreasing by .25% per year until an ultimate rate of 4.75% is reached for post–Medicare	7.25% in the first year, decreasing by .25% per year until an ultimate rate of 4.75% is reached for pre-Medicare 5.75% in the first year, decreasing by .25% per year until an ultimate rate of 4.75% is reached for post–Medicare
Mortality	RP–2014 Blue Collar Mortality Table, base year 2006, Buck (formerly Conduent) Modified MP–2017 projection scale	RP-2014 Blue Collar Mortality Table, base year 2006, Buck (formerly Conduent) Modified MP–2017 projection scale

The actuarial assumptions used in the December 31, 2020 and 2019 valuations were based on the results of an actuarial experience study conducted by Buck Consultants, LLC (formerly Conduent, Inc.) over the period 2013 through 2016.

Discount Rate

The blended discount rate used to measure the total postemployment healthcare liability at December 31, 2020 and 2019 was 2.12% and 2.75%, respectively. The projection of cash flows used to determine the discount rate assumed that the employer's contributions will continue to follow the current funding policy. Based on this assumption, the Fund's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current plan members. Municipal bond rates of 2.12% and 2.75% at December 31, 2020 and 2019, respectively, and the long–term investment rate of return of 0% were used in the development of the blended discount rates. The municipal bond rates for 2019 and 2020 are based on the S&P Municipal Bond 20 Year High Grade Rate Index and Municipal Bond 20–Year Index Rate, respectively.

NOTE 10. EMPLOYER'S POSTEMPLOYMENT HEALTHCARE LIABILITY (continued)

Sensitivity of the Net Postemployment Healthcare Liability to Changes in the Discount Rate

The following is an analysis of the net postemployment healthcare liability's sensitivity to changes in the discount rate at December 31, 2020 and 2019. The following table presents the net postemployment healthcare liability of the employer using the blended discount rate as well as the employer's net postemployment healthcare liability calculated using a discount rate 1 percent lower and 1 percent higher than the current discount rate:

	1% Decrease 1.12%	Current Discount Rate 2.12%	1% Increase 3.12%
Net postemployment healthcare liability as of December 31, 2020	$ 2,508,946,266	$ 2,105,154,520	$ 1,786,550,734

	1% Decrease 1.75%	Current Discount Rate 2.75%	1% Increase 3.75%
Net postemployment healthcare liability as of December 31, 2019	$ 2,252,215,661	$ 1,900,989,370	$ 1,622,569,147

Sensitivity of the Net Postemployment Healthcare Liability to Changes in the Health Care Cost Trend Rate

The following is an analysis of the net postemployment healthcare liability's sensitivity to changes in the health care cost trend rate at December 31, 2020 and 2019. The following table presents the net postemployment healthcare liability of the employer using the health care cost trend rate as well as the employer's net postemployment healthcare liability calculated using a health care cost trend rate 1 percent lower and 1 percent higher than the current health care cost trend rate:

	1% Decrease	Health Care Cost Trend Rate	1% Increase
Net postemployment healthcare liability as of December 31, 2020	$ 1,748,461,101	$ 2,105,154,520	$ 2,574,177,221

	1% Decrease	Health Care Cost Trend Rate	1% Increase
Net postemployment healthcare liability as of December 31, 2019	$ 1,589,836,565	$ 1,900,989,370	$ 2,306,985,201

NOTE 11. RELATED PARTY TRANSACTIONS

The Fund has common Trustees and shares office space with the Forest Preserve District Employees' Annuity and Benefit Fund of Cook County (Forest Fund) who reimburses the Fund for shared administrative services provided by the Fund. During the years ended December 31, 2020 and 2019, the Fund allocated administrative expenditures of $102,610 and $100,658, respectively, to the Forest Fund.

As of December 31, 2020, the Fund owed $686,022 to the Forest Fund. As of December 31, 2019, the Fund was owed $382,786 from the Forest Fund. These amounts include plan transfers from Fund members transferring from one Fund to the other.

NOTE 12. PRONOUNCEMENTS ISSUED EFFECTIVE FISCAL YEAR ENDING DECEMBER 31, 2020

In November 2016, GASB issued Statement No. 83, *Certain Asset Retirement Obligations*. Statement No. 83 addresses accounting and financial reporting for certain asset retirement obligations and establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for asset retirement obligations. Statement No. 83 is effective for the Fund's fiscal year ending December 31, 2020. We evaluated Statement No. 83 and have concluded that the requirements of the statement do not materially impact the financial operations of the Fund. Therefore, the Fund will pass on implementation of the Statement.

In January 2017, GASB issued Statement No. 84, *Fiduciary Activities*. Statement No. 84 improves guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. Statement No. 84 is effective for the Fund's fiscal year ending December 31, 2020. We evaluated Statement No. 84 and confirmed that the Fund is a fiduciary component unit of Cook County, Illinois. Refer to Note 1 for more information.

In June 2017, GASB issued Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*. Statement No. 88 was issued to improve the information that is disclosed in notes to government financial statements related to debt. This Statement also clarifies which liabilities governments should include when disclosing information related to debt. Statement No. 88 is effective for the Fund's fiscal year ending December 31, 2020. We evaluated Statement No. 88 and have concluded that the operations of the Fund do not fall within the scope of Statement No. 88. Therefore, there is no impact on the Fund's financial statements.

In August 2018, GASB issued Statement No. 90, *Major Equity Interests — An Amendment of GASB Statements No. 14 and No. 61*. Statement No. 90 was issued to improve the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. Statement No. 90 is effective for the Fund's fiscal year ending December 31, 2020. We evaluated Statement No. 90 and have concluded that the requirements of Statement No. 90 for a Fiduciary Fund's majority equity interest refer back to GASB Statement No. 72, *Fair Value Measurement*, which requires that a Fiduciary Fund (like the Pension Trust Fund) report majority equity interests as investments and report at fair value. Therefore, the implementation of Statement No. 90 does not change the Fund's reporting of majority equity interests.

NOTE 13. PRONOUNCEMENTS ISSUED NOT YET EFFECTIVE

In June 2020, GASB issued Statement No. 97, *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans—an amendment of GASB Statements No. 14 and No. 84, and a supersession of GASB Statement No. 32*. Statement No. 97 primary objectives are to (1) increase consistency and comparability related to the reporting of fiduciary component units in circumstances in which a potential component unit does not have a governing board and the primary government performs the duties that a governing board typically would perform; (2) mitigate costs associated with the reporting of certain defined contribution pension plans, defined contribution other postemployment benefit (OPEB) plans, and employee benefit plans other than pension plans or OPEB plans (other employee benefit plans) as fiduciary component units in fiduciary fund financial statements; and (3) enhance the relevance, consistency, and comparability of the accounting and financial reporting for Internal Revenue Code (IRC) Section 457 deferred compensation plans (Section 457 plans) that meet the definition of a pension plan and for benefits provided through those plans. The requirements of this Statement No. 97 that are related to the accounting and financial reporting for Section 457 plans are effective for fiscal years beginning after June 15, 2021.

In May 2020, GASB issued Statement No. 96, *Subscription—Based Information Technology Arrangements (SBITAs*). Statement No. 96 requires a government to disclose descriptive information about its SBITAs other than short—term SBITAs, such as the amount of the subscription asset, accumulated amortization, other payments not included in the measurement of a subscription liability, principal and interest requirements for the subscription liability, and other essential information. Statement No. 96 is effective for the Fund's fiscal year ending December 31, 2022.

In May 2020, GASB issued Statement No. 95, *Postponement of the Effective Dates of Certain Authoritative Guidance*. This Statement No. 95 primary objective is to provide temporary relief to governments and other stakeholders in light of the COVID—19 pandemic, and extends the effective dates of certain accounting and financial reporting periods beginning after June 15, 2018. The Fund's effective dates have been updated for each applicable pronouncement according to Statement No. 95.

In June 2017, GASB issued Statement No. 87, *Leases*. Statement No. 87 was issued to improve accounting and financial reporting for leases by governments. This Statement increases the usefulness of governmental financial statements by requiring recognition of certain lease assets and liabilities for leases that were previously classified as operating leases. Statement No. 87 establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Statement No. 87 is effective for the Fund's fiscal year ending December 31, 2022.

NOTE 13. PRONOUNCEMENTS ISSUED NOT YET EFFECTIVE (continued)

In June 2018, GASB issued Statement No. 89, *Accounting for Interest Cost Incurred Before the End of a Construction Period*. Statement No. 89 was issued to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and simplify accounting for interest cost incurred before the end of a construction period. Statement No. 89 is effective for the Fund's fiscal year ending December 31, 2021.

In May 2019, GASB issued Statement No. 91, *Conduit Debt Obligations*. Statement No. 91 was issued to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with commitments extended by issuers, arrangements associated with conduit debt obligations, and related note disclosures. Statement No. 91 is effective for the Fund's fiscal year ending December 31, 2022.

In January 2020, GASB issued Statement No. 92, *Omnibus 2020*. Statement No. 92 was issued to enhance comparability in accounting and financial reporting and to improve the consistency of authoritative literature by addressing practice issues that have been identified during implementation and application of certain GASB Statements. Statement No. 92 is effective for the Fund's fiscal year ending December 31, 2022.

In March 2020, GASB issued Statement No. 93, *Replacement of Interbank Offered Rates*. Statement No. 93 was issued to address the result of global reference rate reform, when London Interbank Offered Rate (LIBOR) is expected to cease to exist in its current form at the end of 2021, and other accounting and financial reporting implications that result from the replacement of an interbank offered rate (IBOR). Statement No. 93 is effective for the Fund's fiscal year ending December 31, 2022.

In March 2020, GASB issued Statement No. 94, *Public–Private and Public–Public Partnerships and Availability Payment Arrangements*. This Statement No. 94 was issued to improve financial reporting by addressing issues related to public–private and public–public partnership arrangements (PPPs). Statement No. 94 is effective for the Fund's fiscal year ending December 31, 2023.

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

NOTE 14. SUBSEQUENT EVENTS

The Fund has been named as a defendant in a class action litigation, entitled *Lori G. Levin, et. al., v. The Retirement Board of the County Employees' and Officers' Annuity and Benefit Fund of Cook County*, in which the plaintiff seeks, on behalf of herself and similarly situated annuitants, the ability to purchase health insurance administered by the Fund, despite her ineligibility under the Board's policy. On June 7, 2019, the Appellate Court reversed the order of the Circuit Court of Cook County affirming the Board's decision denying Ms. Levin's participation in the health insurance program administered by the Fund. The Fund successfully filed a petition for leave to appeal the decision to the Illinois Supreme Court. On May 21, 2020, the Illinois Supreme Court entered a *Per Curiam* Opinion stating that one Justice had recused himself and that it was not able to obtain the constitutionally required concurrence of at least four justices necessary to enter a decision. Accordingly, the appeal was dismissed and the Clerk of the Supreme Court issued a mandate to Appellate and Circuit Courts. Based upon the Appellate Court's decision entered on June 7, 2019, the matter was then remanded to the Retirement Board with specific instructions. The Retirement Board allowed the Plaintiff to participate in the health insurance program as was consistent with the directions from the Appellate Court. Because the Circuit Court was not revested with jurisdiction, Plaintiff's motions to certify the class, issue notice and award damages and attorneys' fees were dismissed for want of jurisdiction and that order was entered as a final order. On April 23, 2021, the Plaintiff filed an appeal from the order entered by the Circuit Court.

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

	2020	2019	2018
Total pension liability			
Service cost	$ 469,652,001	$ 367,986,188	$ 440,682,868
Interest	1,038,868,271	1,078,970,836	1,027,348,255
Difference between expected and actual experience	192,731,447	1,775,621	(278,982,116)
Changes of assumptions	1,766,822,859	2,760,713,592	(1,601,212,188)
Expected benefit payments, including refunds of employee contributions	(905,497,405)	(860,741,164)	(805,394,705)
Net change in total pension liability	2,562,577,173	3,348,705,073	(1,217,557,886)
Total pension liability			
Beginning of year	25,071,941,811	21,723,236,738	22,940,794,624
End of year	$ 27,634,518,984	$ 25,071,941,811	$ 21,723,236,738
Plan fiduciary net position			
Contributions - employer	$ 465,778,715	$ 488,003,692	$ 549,437,252
Contributions - employee	134,157,866	134,837,512	134,159,171
Net investment income	1,465,457,845	1,865,645,039	(424,787,945)
Expected benefit payments, including refunds of employee contributions	(905,497,405)	(860,741,164)	(805,394,705)
Administrative expenses	(5,000,609)	(5,085,445)	(5,134,047)
Other	3,754,806	6,275,804	5,860,613
Net change in plan fiduciary net position	1,158,651,218	1,628,935,438	(545,859,661)
Plan fiduciary net position			
Beginning of year	11,490,959,220	9,862,023,782	10,407,883,443
End of year	$ 12,649,610,438	$ 11,490,959,220	$ 9,862,023,782
Employer's net pension liability	$ 14,984,908,546	$ 13,580,982,591	$ 11,861,212,956
Plan fiduciary net position as a percentage of the total pension liability	45.77%	45.83%	45.40%
Covered payroll	$ 1,532,744,306	$ 1,553,498,503	$ 1,533,721,507
Employer's net pension liability as a percentage of covered payroll	977.65%	874.22%	773.36%

Notes:

This schedule is intended to show information for ten years

The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

Schedule of Changes in the Employer's Net Pension Liability and Related Ratios (continued)

	2017	2016	2015	2014
Total pension liability				
Service cost	$ 478,904,097	$ 559,176,234	$ 496,161,454	$ 491,887,347
Interest	1,082,982,064	1,002,950,495	994,674,970	958,433,835
Difference between expected and actual experience	(152,859,373)	318,014,746	(126,330,351)	—
Changes of assumptions	(950,493,320)	(1,893,474,930)	1,329,087,966	—
Expected benefit payments, including refunds of employee contributions	(757,930,854)	(709,560,225)	(676,470,215)	(622,003,259)
Net change in total pension liability	(299,397,386)	(722,893,680)	2,017,123,824	828,317,923
Total pension liability				
Beginning of year	23,240,192,010	23,963,085,690	21,945,961,866	21,117,643,943
End of year	$ 22,940,794,624	$ 23,240,192,010	$ 23,963,085,690	$ 21,945,961,866
Plan fiduciary net position				
Contributions — employer	$ 511,750,985	$ 414,703,155	$ 136,075,504	$ 146,075,414
Contributions — employee	138,826,184	139,355,592	137,707,719	129,325,318
Net investment income	1,399,625,874	629,442,470	(21,896,696)	488,890,897
Expected benefit payments, including refunds of employee contributions	(757,930,854)	(709,560,225)	(676,470,215)	(622,003,259)
Administrative expenses	(5,406,034)	(5,373,555)	(5,151,110)	(5,010,206)
Other	5,359,418	4,046,158	4,380,293	3,753,960
Net change in plan fiduciary net position	1,292,225,573	472,613,595	(425,354,505)	141,032,124
Plan fiduciary net position				
Beginning of year	9,115,657,870	8,643,044,275	9,068,398,780	8,927,366,656
End of year	$ 10,407,883,443	$ 9,115,657,870	$ 8,643,044,275	$ 9,068,398,780
Employer's net pension liability	$ 12,532,911,181	$ 14,124,534,140	$ 15,320,041,415	$ 12,877,563,086
Plan fiduciary net position as a percentage of the total pension liability	45.37%	39.22%	36.07%	41.32%
Covered payroll	$ 1,567,480,401	$ 1,580,251,254	$ 1,572,417,298	$ 1,514,550,023
Employer's net pension liability as a percentage of covered payroll	799.56%	893.82%	974.30%	850.26%

Notes:

This schedule is intended to show information for ten years.

The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

Schedule of Employer Contributions and Related Notes Last Ten Fiscal Years

	2020	2019	2018	2017	2016
Actuarially determined contribution	$ 536,955,558	$ 523,625,965	$ 562,815,816	$ 514,888,487	$ 519,642,931
Contributions in relation to the actuarially determined contribution	(465,778,715)	(488,003,692)	(549,437,252)	(511,750,985)	(414,703,155)
Contribution deficiency	$ 71,176,843	$ 35,622,273	$ 13,378,564	$ 3,137,502	$ 104,939,776
Covered payroll	$1,532,744,306	$1,553,498,503	$1,533,721,507	$1,567,480,401	$1,580,251,254
Contributions as a percentage of covered payroll	30.39%	31.41%	35.82%	32.65%	26.24%

Notes to Schedule of Employer Contributions

Actuarially determined contribution rates are calculated as of December 31, one year prior to the fiscal year in which contributions are reported.

Valuation Date	December 31, 2020

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar – Open
Remaining amortization period	30 years
Asset valuation method	Five Year Smoothed Average Market
Inflation	2.75% per year, compounded annually
Salary increases	3.50% to 8.00%, based on age
Investment rate of return	7.25% per year, compounded annually
Retirement age	Based on actual past experience, assume all employees retire by age 80 (Tier 1 participants) and 75 (Tier 2 participants)
Mortality	RP-2014 Blue Collar Mortality Table, base year 2006, Buck Modified MP-2017 projection scale
Postretirement annuity increases:	Tier 1 participants — 3.0% compounded annually
	Tier 2 participants — the lesser of 3.0% or one half of the increase in the Consumer Price Index

See Report of Independent Auditors.

Schedule of Employer Contributions and Related Notes Last Ten Fiscal Years (continued)

	2015	2014	2013	2012	2011
Actuarially determined contribution	$ 595,370,046	$ 540,218,287	$ 493,724,370	$ 454,327,461	$ 352,850,988
Contributions in relation to the actuarially determined contribution	(136,075,504)	(146,075,414)	(147,720,014)	(152,734,539)	(160,652,118)
Contribution deficiency	$ 459,294,542	$ 394,142,873	$ 346,004,356	$ 301,592,922	$ 192,198,870
Covered payroll	$ 1,572,417,298	$ 1,514,550,023	$ 1,484,269,715	$1,478,253,368	$1,456,444,123
Contributions as a percentage of covered payroll	8.65%	9.64%	9.95%	10.33%	11.03%

Schedule of Investment Returns

	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	12.50%	19.07%	-3.79%	15.35%	7.67%	-0.10%	5.90%

Notes:

This schedule is intended to show information for ten years.

The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

Schedule of Changes in the Employer's Net Postemployment Healthcare Liability and Related Ratios

	2020	2019
Total postemployment healthcare liability		
Service cost	$ 66,338,671	$ 46,682,354
Interest	53,508,403	64,502,784
Changes in benefit terms	(65,649,811)	(81,634,771)
Difference between expected and actual experience	(15,827,767)	(9,467,033)
Changes of assumptions	209,226,099	385,089,639
Benefit payments	(43,430,445)	(38,237,172)
Net change in total postemployment healthcare liability	204,165,150	366,935,801
Total postemployment healthcare liability		
Beginning of year	1,900,989,370	1,534,053,569
End of year	$ 2,105,154,520	$ 1,900,989,370
Plan fiduciary net position		
Contributions — employer	$ 43,430,445	$ 38,237,172
Benefit payments — net	(43,430,445)	(38,237,172)
Net change in plan fiduciary net position	—	—
Plan fiduciary net position		
Beginning of year	—	—
End of year	$ —	$ —
Employer's net postemployment healthcare liability	$ 2,105,154,520	$ 1,900,989,370
Plan fiduciary net position as a percentage of the total postemployment healthcare liability	0.00%	0.00%
Covered payroll	$ 1,583,198,305	$ 1,603,347,918
Employer's net postemployment healthcare liability as a percentage of covered payroll	132.97%	118.56%

Notes:

This schedule is intended to show information for ten years.

The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

Schedule of Changes in the Employer's Net Postemployment Healthcare Liability and Related Ratios (continued)

	2018	2017
Total postemployment healthcare liability		
Service cost	$ 40,557,095	$ 82,344,830
Interest	68,565,681	84,911,522
Changes in benefit terms	(292,725,744)	(79,293,990)
Difference between expected and actual experience	(92,253,919)	(55,814,160)
Changes of assumptions	(300,028,016)	(66,330,809)
Benefit payments	(38,310,969)	(47,454,621)
Net change in total postemployment healthcare liability	(614,195,872)	(81,637,228)
Total postemployment healthcare liability		
Beginning of year	2,148,249,441	2,229,886,669
End of year	$ 1,534,053,569	$ 2,148,249,441
Plan fiduciary net position		
Contributions — employer	$ 38,310,969	$ 47,454,641
Benefit payments — net	(38,310,969)	(47,454,641)
Net change in plan fiduciary net position	—	—
Plan fiduciary net position		
Beginning of year	—	—
End of year	$ —	$ —
Employer's net postemployment healthcare liability	$ 1,534,053,569	$ 2,148,249,441
Plan fiduciary net position as a percentage of the total postemployment healthcare liability	0.00%	0.00%
Covered payroll	$ 1,576,658,158	$ 1,602,986,483
Employer's net postemployment healthcare liability as a percentage of covered payroll	97.30%	134.02%

Notes:

This schedule is intended to show information for ten years.

The additional years' information will be displayed as it becomes available.

See Report of Independent Auditors.

Schedule of Employer Contributions and Related Notes Last Ten Fiscal Years

	2020	2019	2018	2017	2016
Actuarially determined contribution	$ 172,996,709	$ 157,705,345	$ 133,228,086	$ 187,348,423	$ 206,678,514
Contributions in relation to the actuarially determined contribution	(43,430,445)	(38,237,172)	(38,310,969)	(47,454,621)	(49,565,249)
Contribution deficiency	$ 129,566,264	$ 119,468,173	$ 94,917,117	$ 139,893,802	$ 157,113,265
Covered payroll	$ 1,583,198,305	$1,603,347,918	$1,576,658,158	$1,602,986,483	$1,609,559,234
Contributions as a percentage of covered payroll	2.74%	2.38%	2.43%	2.96%	3.08%

Notes to Schedule of Employer Contributions

Actuarially determined contribution rates are calculated as of December 31, one year prior to the fiscal year in which contributions are reported.

Valuation Date: December 31, 2020

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar – Open Remaining amortization period 30 years
Inflation	2.75% per year
Salary increases	3.50% to 8%, based on age
Health care cost trend rate	7.00% in the first year, decreasing by .25% per year until an ultimate rate of 4.75% is reached for pre-Medicare 5.50% in the first year, decreasing by .25% per year until an ultimate rate of 4.75% is reached for post-Medicare
Retirement age	Based on actual past experience, assume all employees retire by age 80 (Tier 1 participants) and 75 (Tier 2 participants)
Mortality	RP-2014 Blue Collar Mortality Table, base year 2006, Buck (formerly Conduent) Modified MP-2017 projection scale

See Report of Independent Auditors.

Schedule of Employer Contributions and Related Notes Last Ten Fiscal Years (continued)

	2015	2014	2013	2012	2011
Actuarially determined contribution	$ 190,871,452	$ 189,907,202	$ 178,698,965	$ 156,700,388	$ 165,176,771
Contributions in relation to the actuarially determined contribution	(50,756,817)	(43,957,458)	(40,097,630)	(37,986,237)	(38,185,306)
Contribution deficiency	$ 140,114,635	$ 145,949,744	$ 138,601,335	$ 118,714,151	$ 126,991,465
Covered payroll	$1,597,597,077	$1,514,550,023	$1,484,269,715	$1,478,253,368	$1,456,444,123
Contributions as a percentage of covered payroll	3.18%	2.90%	2.70%	2.57%	2.62%

See Report of Independent Auditors.

Schedules of Net Administrative Expenses and Professional and Consulting Fees

Years Ended December 31, 2020 and 2019

	2020	2019
Administrative expenses		
Bank charges	$ 33,890	$ 33,150
Election expense	73,721	105,612
Employee benefits	520,752	515,339
Insurance - fidelity, fiduciary and liability	141,315	185,141
Maintenance of equipment, systems, software and support	323,703	447,247
Membership, conference and training	15,610	22,257
Office expense	46,373	67,273
Postage	105,421	92,010
Printing and stationery	56,400	47,144
Professional and consulting fees	567,149	533,833
Recovery site expense	37,142	32,608
Regulatory filing fees	8,000	8,000
Rent	528,745	526,635
Salaries	2,644,998	2,569,854
Total	5,103,219	5,186,103
Less administrative expenses allocated to Forest Preserve District Employees' Annuity and Benefit Fund of Cook County	(102,610)	(100,658)
Net administrative expenses	$ 5,000,609	$ 5,085,445

	2020	2019
Professional and consulting fees		
Actuarial service	$ 67,202	$ 90,335
Audit	67,400	67,200
Consulting	227,426	231,680
Legal	177,464	116,937
Lobbyist	27,657	27,681
Total	$ 567,149	$ 533,833

Schedules of Investment Expenses

Years Ended December 31, 2020 and 2019	2020	2019
Investment manager expense		
Adelante Capital Management	$ 500,639	$ 539,997
Angelo Gordon	263,969	246,596
Ariel Investments	694,121	678,862
Artemis Real Estate Partners	440,954	313,434
Blackstone Alternative Asset Management	5,892,178	5,677,392
CastleArk Management	695,878	656,740
CBRE Global Investors	333,780	355,312
Channing Capital Management	1,038,148	1,124,165
Clarion Partners	992,912	—
Franklin Templeton Investments	2,556,229	2,845,937
Frontier Capital Management	1,142,388	1,181,541
Garcia Hamilton	214,648	166,157
Great Lakes Advisors, Inc.	466,193	477,712
J.P. Morgan Asset Management	2,786,838	3,255,713
LaSalle Investment Management	627,514	94,680
Lazard Asset Management, LLC	782,617	716,271
LM Capital Group, LLC	709,485	655,518
MacKay Shields	912,491	1,039,832
Mellon Capital	141,109	129,983
Mesirow Financial	3,462,051	3,381,152
Mondrian Investment Partners, Ltd.	1,113,435	1,105,729
Muller and Monroe Asset Management	286,058	321,028
NCM Capital	440,193	442,471
New Century Investment Management	287,544	269,937
PGIM Investments	858,933	803,037
Progress Investment Management	159,991	2,238,364
Prudential Real Estate Investors	1,990,541	2,001,087
RhumbLine Advisers	237,313	217,221
Russell Investments	182,279	216,041
SPC Capital Management	15,993	41,427
Strategic Global Advisors	666,907	683,272
State Street Global Advisors	383,980	384,621
The Rock Creek Group	1,442,330	1,426,769
Wells Capital Management	1,544,922	1,470,332
William Blair & Company	864,429	777,626
	35,128,990	35,935,956
Investment consulting fees		
Callan LLC	391,878	386,431
Investment custodian fees		
BNY Mellon	502,705	505,295
Total investment expenses	$ 36,023,573	$ 36,827,682

Additions by Source

Year Ended December 31,	Employer Contributions	Employee Contributions	Net Investment and Net Securities Lending Income (1)	Other (2)	Total Additions
2015	$ 186,832,321	$ 137,707,719	$ (21,896,696)	$ 11,457,843	$ 314,101,187
2016	464,268,404	139,355,592	629,442,470	14,019,340	1,247,085,806
2017	559,205,626	138,826,184	1,399,625,874	23,321,813	2,120,979,497
2018	587,748,221	134,159,171	(424,787,945)	27,479,205	324,598,652
2019	526,240,864	134,837,512	1,865,645,039	35,158,714	2,561,882,129
2020	509,209,160	134,157,866	1,465,457,845	35,954,901	2,144,779,772

Deductions by Type

Year Ended December 31,	Benefits	Refunds	Net Administrative Expenses	Total Deductions
2015	$ 701,031,411	$ 33,273,171	$ 5,151,110	$ 739,455,692
2016	742,396,434	26,702,222	5,373,555	774,472,211
2017	790,352,526	32,995,364	5,406,034	828,753,924
2018	831,661,745	33,662,521	5,134,047	870,458,313
2019	890,115,295	37,745,951	5,085,445	932,946,691
2020	950,137,294	30,990,651	5,000,609	986,128,554

[1] Includes realized and unrealized net gain or loss on investments and net securities lending income.

[2] Includes employer federal subsidized programs, EQWP/Medicare Part D, prescription/repayment plan rebates and miscellaneous income.

Schedule of Employer Contributions Receivable December 31, 2020

Contribution Year	Contributions Receivable	Uncollected Balance	Reserved	Net Contributions Receivable
2019	$ 209,506,965	$ 538,712	$ 38,399	$ 500,313
2020	200,939,168	200,939,168	6,390,937	194,548,231
		$ 201,477,880	$ 6,429,336	$ 195,048,544

Notes:

Employer contributions are funded primarily through property taxes levied by Cook County, Illinois.

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INVESTMENT
Section

This section includes an Investment Report, Investment Consultant's Commentary, the Master Custodian's Certification, Summary of Investment Policy, asset allocation and historical investment returns, and summary tables of investment data.

June 11, 2021

To the Retirement Board and Fund Members:

The County Employees' and Officers' Annuity and Benefit Fund of Cook County ("the Fund") employs a prudent investment strategy to meet its long-term actuarial objective of growing fund assets to support member benefits. Together with fund staff and the investment consultant, Callan LLC, the Retirement Board oversees the investment strategy through ongoing study of the portfolio structure, return assumptions, and projected funding needs to support member benefits.

In 2020, the Fund experienced a strong investment year returning 12.74% on a net of investment management fee basis despite the impact of a worldwide lockdown due to the coronavirus pandemic. The United States experienced its sharpest equity market decline ever during the first half of 2020. However, the equity market also recovered in record time as the prospect and announcement of a vaccine became clearer in the second half of 2020. This market momentum helped the Fund's domestic, international and private equity asset classes generate positive double digit returns in 2020. Including the fixed income asset class, these four investment asset classes have returned well above their 10-year assumed rates of return. In total, in 2020, investments earned $1.5 billion for the Fund and increased investment assets from $11.2 billion at the end of 2019 to just over $12.4 billion at December 31, 2020.

In 2020, supplemental contributions from the employer enhanced the Fund's financial situation. During the year, supplemental employer contributions of $306.2 million resulting from a one-year Intergovernmental Agreement (IGA) supported the Fund in meeting benefit obligations.

The Fund continues to implement strategies towards policy allocation targets with the additional funding.

The Consultant's Commentary; Master Custodian's certification letter; Summary of the Fund's Investment Policy; and selected investment schedules follow for your review.

Sincerely,

Regina Tuczak

Regina Tuczak
Executive Director

Data provided to the Fund by its investment consultant form the basis of the information that is presented throughout the Investment Section. All portfolio rates of return are presented using time and asset-weighted returns. Returns are calculated net of investment manager fees, unless otherwise noted.

Callan

Callan LLC
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Suite 2400
Chicago, IL 60602

Main 312.346.3536
Fax 312.346.1356

www.callan.com

June 11, 2021

Board of Trustees
County Employees' and Officers' Annuity and Benefit Fund of Cook County
70 W. Madison Street, Suite 1925
Chicago, IL 60602

Dear Trustees:

Callan LLC is pleased to present the County Employees' and Officers' Annuity and Benefit Fund of Cook County ("Fund") summary for fiscal year ended December 31, 2020. As of year-end, the Fund reported a fair value of $12.5 billion, an increase of approximately $1.2 billion since December 31, 2019. This increase in value included approximately $305.6 million in net withdrawals.

The year of 2020 will be remembered as a tumultuous period with the COVID pandemic wreaking havoc on the world economies, and the monetary and fiscal interventions taken to stem the tide. After the precipitous sell-off in the spring, markets rallied with some U.S. stock indices hitting record highs going into year-end, and yields on high yield bonds reaching record lows. The final estimate for 4th quarter U.S. GDP was 4.3% bringing its full year estimate to -3.5%, the largest decline since 1946.

The passage of the aptly titled CARES Act provided a needed boost, but many economists feel that more is required. The Fed contributed as they cut rates to 0%-0.25% as the U.S. Treasury yields fell to record lows. The unemployment rate, which had peaked at 14.7% in April, fell to 6.7% by December. Inflation remained contained at 1.4% in December. The Fed introduced a new policy of "average inflation targeting" as the central bank will permit the inflation rate to run ahead of the Fed's goal of 2% "for some time" following periods where it has run below that objective.

U.S. stocks surged following the first quarter of 2020 and the S&P 500 Index hit a record high going into year end after generating an 18.4% return for the year. Since the market low in March, the index was up over 70%, with all sectors posting increases greater than 40%.

The pandemic cast a pall over certain sectors while rewarding others; online retail stocks soared 69% in 2020, but hotels/cruise lines, airlines, and retail REITs dropped roughly 30%. Megacaps accounted for a disproportionate amount of the index and returns; the five largest stocks (Apple, Microsoft, Amazon, Facebook, and Alphabet) accounted for over 12% of the 18.4% S&P 500 Index return. Smaller capitalization securities also performed strongly, as the Russell 2000 Index was up 20.0% for the year.

Non-U.S. developed markets trailed the U.S. markets, but still performed strongly in 2020 as measured by the MSCI ACWI ex-USA IMI Index which returned 11.1%. Emerging markets outperformed developed markets with an 18.3% annual return.

Fixed income markets posted another strong year in 2020 fueled by both falling interest rates and strong investor demand. The Bloomberg Barclays US Aggregate Bond Index rose 7.5%. U.S Treasuries which comprise 37% of the aforementioned index returned 8.0%, while corporate credit made up 27% of the index and was up almost 9.9%.

The COVID pandemic significantly disrupted the commercial real estate markets in 2020. The NCREIF Open Diversified Core Equity Index (ODCE Value-weighted Net) returned 0.3% for the year. Of the four primary commercial real estate sectors, the Housing and Retail sectors were the hardest hit. The exception to the downturn was warehouse properties, which remained healthy due in large part to e-commerce sales. Some encouraging economic news did emerge in the second half of the year with gains in housing and rising consumer sentiment; however, transaction volumes remained down significantly from 2019 levels.

Given the market conditions of 2020 that witnessed a sudden liquidity collapse in the first quarter followed by a stimulus-fueled rally in the last three quarters, hedge funds performed well overall, but with a great deal of disparity depending on the type of strategy. Illiquid credit strategies, particularly those related to the U.S. housing market trailed while more-equity sensitive strategies thrived.

Cook County's hedge fund program suffered notable losses that were subsequently recovered along with additional gains. However, the losses and subsequent gains were more muted than those of the broader equity and credit markets.

Similar to growth assets across the global economy, private equity activity experienced a significant decline and pronounced resurgence. Attention from portfolio triage back to making deals. Private equity partnerships final closes raised $645 billion globally across 1,163 partnerships. The dollar amount declined only 12% from 2019's near record total.

Total Fund Fiscal Year End Performance (net of fees)

The Fund experienced another strong year with a total return of 12.74% net of investment manager fees for the year ended December 31, 2020, yet trailed the 13.27% return of the Fund's Total Fund Benchmark (Policy Benchmark). On a gross of fees basis, the Fund ranked in the top quartile of a comparable peer universe of funds with assets greater than $1 billion.

Private Equity investments led the way with a 31.6% return for the year. Public Equities generated strong absolute returns, but had difficulty keeping up with their benchmarks. U.S Public Equities put on a strong showing with a 19.16% return net of manager fees, while non-U.S. Equity investments posted a 10.86% return for the year. Real Estate investments produced more modest absolute returns, but outperformed their benchmarks by a significant margin. Hedge Fund Investments were positive for the year with a 3.42% return, but trailed its absolute return benchmark of Libor +4%.

For the trailing three years, the Fund generated an 8.90% annualized return which trailed its 9.37% benchmark return. On a gross of fee basis, the Fund ranked in the 25th percentile (1% being the highest, 100% being the lowest) of a comparable gross of fee peer group. In the last five years, the Fund posted a 9.91% annualized return versus the 9.85% return of the benchmark. Furthermore, relative to its peer universe, the Fund ranked in the 23rd percentile, thus outperforming 77% of its peers.

Asset Class Fiscal Year End Performance (net of fees)

The U.S. composite equity portfolio posted a return of 19.16% for the year ended December 31, 2020, trailing the Domestic Equity Benchmark, the Russell 3000 Index, return of 20.89%. The portfolio benefited from the active management in the small capitalization space; however, active management in large and SMID capitalization asset classes detracted overall. For the three-year period, the domestic portfolio generated an annualized 13.15% return, yet trailed the 14.49% return of the benchmark. For the last five years, domestic equities added 14.73% per annum, yet trailed the strong benchmark return of 15.43%.

The non-U.S. equity portfolio posted a return of 10.86% for the one year period ending December 31, 2020, but trailed the ACWI ex US IMI Index return of 11.12%. International Small Capitalization provided a 10.21% return while Emerging Market strategies contributed with its 25.05% performance versus its underlying benchmark return of 18.31%.

The fixed income portfolio posted a return of 6.73% for the one year period ending December 31, 2020, underperforming the 7.09% return of the Bloomberg Barclays US Aggregate Index. The portfolio was negatively impacted by its global fixed income exposure while the core/core plus strategies outperformed.

Within the real estate portfolio, public REITS ended the year with a -5.16% return, yet outperformed the -8.00% return of the NAREIT Index. The private real estate strategies fared better with a 3.26% which outperformed the 0.34%return posted by the NFI-ODCE Index.

The private equity portfolio contributed a 31.60% return for the year ended December 31, 2020. Approximately 96% of the portfolio is invested in a single fund of funds program that has generated an annualized since inception IRR of 26.0% since Cook County's first investment in 2013. Approximately, 82% of committed capital has been drawn.

The hedge fund composite portfolio posted a 3.42% return that trailed its Libor +4% target. The complementary underlying funds delivered mixed performances. The more equity beta-oriented strategy outperformed while the more credit-centric fund trailed.

Investment Manager Changes

Two new real estate accounts were added in 2020: Clarion Partners (Lion Industrial Trust) and LaSalle Income & Growth VIII.

Progress Investment Management Company dissolved their organization in 2020.

Methodology

All performance returns for the Fund presented in this report have been calculated by Callan LLC using a time-weighted rate of return calculation for accounts with daily pricing and a modified BAI calculation for accounts without daily pricing.

Sincerely,

John P. Jackson

John P. Jackson, CFA
Senior Vice President, Callan LLC

BNY MELLON

Asset Servicing

Maurice Campbell
Director

June 14, 2021

To the Board of Trustees and the Executive Director of the County Employees' and Officers' Annuity & Benefit Fund of Cook County:

BNY Mellon as custodian of the County Employees' and Officers' Annuity & Benefit Fund of Cook County (the "client") has established an "Account" that holds the clients property in safekeeping facilities of the Custodian (or other custodian banks or clearing operations), provided the recordkeeping of certain property of the client and completed the annual accounting certification for the year January 1, 2020 through December 31, 2020.

In addition, in accordance with the terms of the Custody Agreement dated, November 1, 2007, BNY Mellon also provides the following services as Custodian:

- Market settlement of purchases and sales and engage in other transactions, including free receipts and deliveries, exchanges and other voluntary corporate actions, with respect to securities or property received by the Custodian
- Take actions necessary to settle transactions in futures and/or options contracts, short selling programs, foreign exchange or foreign exchange contracts, swaps and other derivative investments with third parties
- Lend the assets of the Account in accordance with a separate Securities Lending Agreement.
- Invest available cash in any collective fund, including a collective investment fund maintained by the Custodian or and affiliate of the Custodian for collective investment of employee benefit trusts or deposit in an interest bearing account of banking department of Custodian.
- Appoint subcustodians, including affiliates of the custodian, as to part or all of the Account.
- Hold property in nominee name, in bearer form or in book entry form, in a clearinghouse corporation or in a depository.
- Take all action necessary to pay for, and settle authorized transactions.
- Collect income payable to and distributions due to the Account.
- Collect all proceeds from securities, certificates of deposit or other investments which may mature or be called.
- Forward to the authorized party as designated by the client, proxies or ballots that are to be a voted by the authorized party.
- Attend to corporate actions that have no discretionary decision requirement.
- Report the value of the Account as agreed upon by the client and custodian.
- Credit the account with income and maturity proceeds on securities contractual payment date.

Sincerely,

Maurice Campbell

Maurice Campbell
Relationship Executive

Investment Authority

The County Employees' and Officers' Annuity and Benefit Fund of Cook County ("Fund") is a statutorily created public defined benefit plan. The Fund was established on January 1, 1926 and is governed by the Illinois Pension Code [40 ILCS 5] (Code). The Fund was designed to provide retirement, death and disability benefits for Cook County employees and their surviving spouses, children and certain other dependents.

Overview

Under the guidance and direction of the Board and governed by the "prudent man rule," it is the mission of the Fund and the Investment Staff to optimize the total return of the Fund's investment portfolio through a policy of diversified investments using parameters of prudent risk management as measured on the total portfolio, acting at all times in the exclusive interest of the participants and beneficiaries of the Fund. Investments made by the Fund shall satisfy the conditions of the Illinois Pension Code and applicable Illinois law and, in particular, the "prudent man" fiduciary standard set forth in section1-109 of the code [40 ILCS 5/1-109].

Subject to these fiduciary standards, the Board of Trustees ("Board") and Investment Staff shall endeavor at all times to execute their responsibilities in a manner consistent with the stated mission of the Fund, while ensuring transparency and compliance with all applicable laws and regulations:

- Establish a clear understanding of all involved parties of the investment goals and objectives of the Fund
- Define and assign the responsibilities of all involved parties
- Establish the relevant investment horizon for which the Fund assets will be managed
- Establish risk parameters governing assets of the Fund
- Establish target asset allocation and re-balancing procedures
- Establish a methodology and criteria for selecting, retaining and terminating Investment Service Providers
- Offer specific guidance to and define limitations for all Investment Managers regarding the investment of Fund assets

In summary, the purpose of the Investment Policy Statement ("IPS") is to formalize the Board's investment objectives, policies and procedures and to define the duties and responsibilities of the various entities involved in the investment process. The IPS is intended to serve as a guide, reference tool and a communications link between the Board, Investment Staff and Investment Service Providers.

Roles and Responsibilities

The Board is a fiduciary and has original and exclusive jurisdiction over all matters relating to the Fund, including benefits administration and the investment of the assets. As a fiduciary, the Board will discharge its duties in the sole interest of the participants and beneficiaries of the Fund.

Investment Committee

The Board has established an Investment Committee ("IC"), which is a committee of the whole. The IC reviews and makes recommendations of investment-related policies to the Board for approval. The IC works with Investment Staff and Investment Consultant(s) to implement all Board approved investment policies, evaluate investment performance and comply with the IPS.

Investment Staff

The Executive Director ("ED") along with other staff are responsible for the implementation of investment strategy approved by the Board, making recommendations to the Board and Investment Committee as appropriate and for the coordination of all investment activities on behalf of the Fund.

Investment Consultant

The Board may hire Investment Consultant(s) to assist the Board, its Committees and Staff in developing and implementing a prudent process for establishing, monitoring and evaluating the Fund's investment policy.

Investment Managers

Manage assets in accordance with the guidelines and objectives and consistent with each investment manager's stated investment philosophy and style.

Objectives

The Fund's assets will be invested for the sole interests of the participants and beneficiaries of the Fund and in accordance with the following objectives:

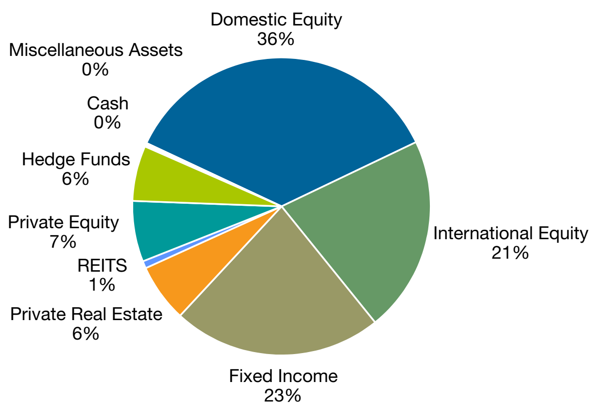
- Ensure that the current and future obligations of the Fund are met when due
- Ensure the assets of the Fund are invested with the care, skill, and diligence that a prudent person acting in a like capacity would undertake
- Ensure the assets of the Fund are invested in a manner that manages and controls the costs incurred in administering and managing the assets
- Diversify the investment of the assets to minimize the risk of large losses
- Attain the actuarial assumed annual rate of return over a long-term time horizon
- Exceed an asset policy weighted composite benchmark (Policy Target) over a market cycle (typically, 5 to10 years)

In establishing the asset allocation policy, the Board takes into consideration the actuarial rate of return, the nature of the Fund's liabilities, the cash flow needs, the return and risk expectations for the capital markets, as well as any applicable legislation and statutes governing the Fund. The asset allocation policy reflects the Board's return objectives at a prudent level of risk.

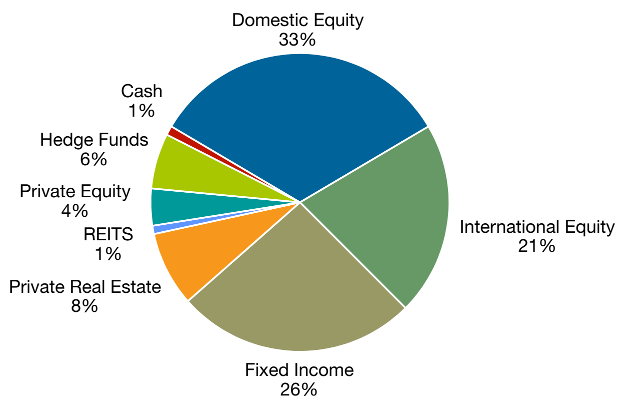
2020 Asset Allocation

As of December 31, 2020, compared to the target allocation, the Fund was allocated within its target ranges. An overweight to U.S Equity and Non-U.S. Equity was offset by its underweight to Fixed Income. The Fund's asset allocation at the end of 2020 is shown below. .

Actual Asset Allocation

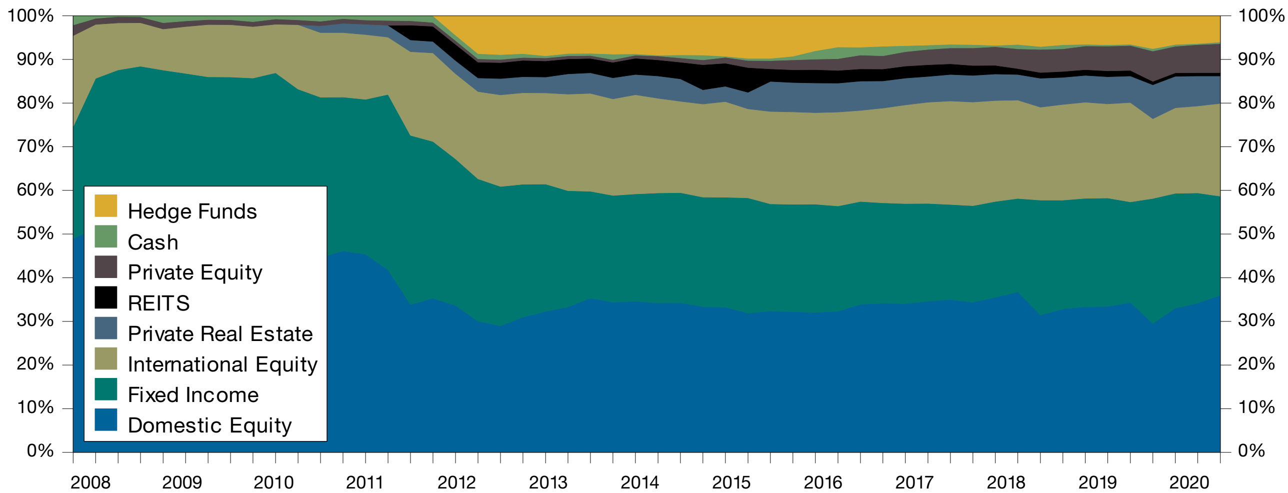


Target Asset Allocation



Historical Allocation by Asset Class

The chart below illustrates the historical asset allocation of the Fund



Annual and Trailing Investment Returns (net of fees) – December 31, 2020. Below is a detailed analysis of the Fund's net of fee performance on a trailing and calendar year basis. Calculations are prepared utilizing a time weighted rate of return.

Historical Calendar Year Investment Returns (Net of Fees)

Below is a detailed analysis of the Fund's net of fee investments performance on a calendar year basis. Calculations were prepared utilizing a time-weighted rate of return methodology.

Asset Class	2020	2019	2018	2017	2016	2015	2014	2013	2012
Net of Fee Returns									
Domestic Equity	**19.16%**	**30.42%**	**-6.78%**	**19.78%**	**14.57%**	**-1.61%**	**9.84%**	**35.13%**	**14.94%**
Domestic Equity Benchmark (2)	20.89%	31.02%	-5.24%	21.13%	12.74%	0.48%	12.56%	33.55%	16.42%
International Equity	**10.86%**	**22.33%**	**-13.59%**	**28.67%**	**2.92%**	**-1.36%**	**-4.44%**	**18.25%**	**19.36%**
International Equity Benchmark (3)	11.12.%	21.63%	-14.76%	27.19%	4.50%	-5.66%	-3.87%	15.29%	16.98%
Fixed Income	**6.73%**	**8.25%**	**-0.49%**	**4.13%**	**4.11%**	**-0.58%**	**5.57%**	**-2.03%**	**5.96%**
Fixed Income Benchmark (4)	7.09%	8.72%	0.01%	3.54%	2.65%	0.55%	5.97%	-2.02%	4.48%
REITS	**-5.16%**	**27.29%**	**-6.21%**	**7.90%**	**6.33%**	**1.15%**	**27.17%**	**1.29%**	**17.89%**
NAREIT Equity Index	-8.00%	26.00%	-4.62%	5.23%	8.52%	3.20%	30.14%	2.47%	18.06%
Private Real Estate	**3.26%**	**5.95%**	**8.68%**	**5.24%**	**9.97%**	**13.74%**	**11.73%**	**10.08%**	**11.00%**
NCREIF NFI-ODCE Value Weight Net	0.34%	4.39%	7.36%	6.66%	7.79%	13.95%	11.46%	12.90%	9.79%
Private Equity	**31.60%**	**22.81%**	**29.77%**	**13.07%**	**11.49%**	**-2.95%**	**-9.46%**	**4.52%**	**4.45%**
Hedge Funds	**3.42%**	**6.35%**	**1.75%**	**7.06%**	**2.68%**	**1.77%**	**5.99%**	**8.80%**	**—**
LIBOR + 4%	4.64%	6.35%	6.35%	5.26%	4.75%	4.30%	4.23%	4.28%	4.47%
HFRI Fund of Funds Index	8.68%	4.90%	-1.52%	7.74%	-0.79%	0.52%	4.34%	8.83%	2.98%
Total Cook County Fund	**12.74%**	**19.07%**	**-3.79%**	**15.35%**	**7.67%**	**-0.25%**	**5.51%**	**14.97%**	**12.51%**
Total Fund Benchmark (1)	13.27%	19.00%	-2.93%	14.40%	6.88%	0.27%	6.85%	12.96%	11.72%

Investment results are calculated and presented using standard performance evaluation methods in a manner consistent with the investment industry in general and public pension funds in particular. Rates of return were determined using a modified time-weighted return calculation.

1. The Total Fund Benchmark is as follows:

   12/31/19 – 12/31/2020: 33.0% Russell 3000 Index, 21.0% MSCI ACWI ex U.S. IMI, 23.4% Blmbg Aggregate, 2.6% Blmbg Govt/Credit 1-3 Year; 9% Custom Real Estate Index, 6% (3 Month Libor+ 4.0%), 4.0% Private Equity Custom Index, 1% U.S. 90 Day T-Bill.

   12/31/17 – 12/31/19: 33.0% Russell 3000 Index, 21.0% MSCI ACWI ex U.S. IMI, 26% Blmbg Aggregate, 9% Custom Real Estate Index, 6% (3 Month Libor+ 4.0%), 4.0% Private Equity Custom Index, 1% U.S. 90 Day T-Bill.

   12/31/13 – 12/31/16: 25% Russell 3000 Index; 20% MSCI ACWI ex U.S. Index, 32% Blmbg Aggregate Index, 8% Custom Real Estate Index 9% (3 Month Libor+ 4.0%), 6% Private Equity Custom Index.

   12/31/12: 26% Russell 3000 Index; 20% MSCI ACWI ex U.S. Index, 40% Custom Fixed Income Index, 8% Custom Real Estate Index, 6% Private Equity Custom Index.

   12/31/11: 30% Russell 3000 Index; 20% MSCI ACWI ex U.S. Index, 40% Custom Fixed Income Index, 5% Custom Real Estate Index, 5% Private Equity Custom Index.
2. Domestic Equity Benchmark: Russell 3000 since 10/1/2011; custom blend previously.
3. International Benchmark: MSCI ACWI ex-US IMI since 1/1/18; MSCI ACWI ex-U.S. since 1/1/13; custom blend previously.
4. Fixed Income Benchmark: Bloomberg Aggregate Index since 1/1/13; custom blend previously.

Current Year and Annualized Returns

Asset Class	For the Year Ended December 31, 2020	Annualized Returns 3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Net of Fee Returns				
Domestic Equity	19.16%	13.15%	14.73%	12.78%
Domestic Equity Benchmark (2)	20.89%	14.49%	15.43%	13.66%
International Equity	10.86%	5.43%	9.19%	6.17%
International Equity Benchmark (3)	11.12%	4.83%	8.90%	4.78%
Fixed Income	6.73%	4.76%	4.50%	3.88%
Fixed Income Benchmark (4)	7.09%	5.20%	4.35%	3.84%
REITS	-5.16%	4.23%	5.37%	—
NAREIT Equity Index	-8.00%	3.40%	4.77%	8.31%
Private Real Estate	3.26%	5.94%	6.59%	9.63%
NCREIF NFI-ODCE Value Weight Net	0.34%	3.99%	5.27%	8.87%
Private Equity	31.60%	28.00%	21.46%	11.11%
Hedge Funds	3.42%	3.82%	4.23%	—
LIBOR + 4%	4.64%	5.78%	5.47%	4.89%
HFRI Fund of Funds Index	8.68%	3.93%	3.72%	3.17%
Total Cook County Fund	**12.74%**	**8.90%**	**9.91%**	**8.25%**
Total Fund Benchmark (1)	13.27%	9.37%	9.85%	8.10%

Investment results are calculated and presented using standard performance evaluation methods in a manner consistent with the investment industry in general and public pension funds in particular. Rates of return were determined using a modified time-weighted return calculation.

1. The Total Fund Benchmark is as follows:

   12/31/19 – 12/31/2020: 33.0% Russell 3000 Index, 21.0% MSCI ACWI ex U.S. IMI, 23.4% Blmbg Aggregate, 2.6% Blmbg Govt/Credit 1-3 Year; 9% Custom Real Estate Index, 6% (3 Month Libor+ 4.0%), 4.0% Private Equity Custom Index, 1% U.S. 90 Day T-Bill.

   12/31/17 – 12/31/19: 33.0% Russell 3000 Index, 21.0% MSCI ACWI ex U.S. IMI, 26% Blmbg Aggregate, 9% Custom Real Estate Index, 6% (3 Month Libor+ 4.0%), 4.0% Private Equity Custom Index, 1% U.S. 90 Day T-Bill.

   12/31/13 – 12/31/16: 25% Russell 3000 Index; 20% MSCI ACWI ex U.S. Index, 32% Blmbg Aggregate Index, 8% Custom Real Estate Index 9% (3 Month Libor+ 4.0%), 6% Private Equity Custom Index.

   12/31/12: 26% Russell 3000 Index; 20% MSCI ACWI ex U.S. Index, 40% Custom Fixed Income Index, 8% Custom Real Estate Index, 6% Private Equity Custom Index.

   12/31/11: 30% Russell 3000 Index; 20% MSCI ACWI ex U.S. Index, 40% Custom Fixed Income Index, 5% Custom Real Estate Index, 5% Private Equity Custom Index.
2. Domestic Equity Benchmark: Russell 3000 since 10/1/2011; custom blend previously.
3. International Benchmark: MSCI ACWI ex-US IMI since 1/1/18; MSCI ACWI ex-U.S. since 1/1/13; custom blend previously.
4. Fixed Income Benchmark: Bloomberg Aggregate Index since 1/1/13; custom blend previously.

Schedule of Investment Summary and Asset Allocation

	For Year Ended December 31, 2020			For Year Ended December 31, 2019		
Asset Class	**Fair Value**	**Percent of Total**	**Target**	**Fair Value**	**Percent of Total**	**Target**
Domestic Equity	$ 4,741,659,322	38%	33%	$ 4,145,691,869	37%	33%
International Equity	2,279,476,850	18%	21%	2,229,083,575	20%	21%
Fixed Income	2,731,679,476	22%	26%	2,457,940,308	22%	26%
Real Estate	776,471,639	6%	9%	689,481,138	6%	9%
Hedge Funds of Funds	740,040,004	6%	4%	730,203,620	6%	4%
Private Equity	938,804,581	8%	6%	678,909,985	6%	6%
Short-Term Investments	267,036,118	2%	1%	330,944,641	3%	1%
Total Investments	$ 12,475,167,990	100%	100%	$ 11,262,255,136	100%	100%

Schedule of Top Ten Largest Holdings (Excludes Commingled Funds)

For year ended December 31, 2020

Top 10 Domestic Equity Holdings	Sector	Shares	Fair Value	% of Total
Apple Inc.	Technology	1,868,687	$ 247,956,078	5.2%
Microsoft Corp.	Technology	876,365	194,921,103	4.1%
Amazon.com Inc.	Consumer Discretionary	49,494	161,198,493	3.4%
Alphabet Inc.	Communication	68,527	120,077,416	2.5%
Facebook Inc.	Communication	290,685	79,403,515	1.7%
Tesla Inc.	Automotive	86,966	61,369,297	1.3%
Berkshire Hathaway Inc.	Insurance	225,600	52,309,872	1.1%
United Health Group Inc.	Healthcare	126,204	44,257,219	0.9%
Visa Inc.	Financial Services	196,267	42,929,481	0.9%
Comcast Corp.	Media	759,369	39,790,936	0.8%
Total Top 10 Domestic Equity Holdings		4,548,164	$ 1,044,213,410	22.0%
Total Domestic Equity			$ 4,741,659,322	100.0%

Top 10 International Equity Holdings	Sector	Shares	Fair Value	% of Total
Tencent Holdings LTD (China)	Internet	393,400	$ 28,615,152	1.3%
Nintendo Co., LTD (Japan)	Games	43,800	27,927,299	1.2%
Roche Holding AG (Switzerland)	Healthcare	79,591	27,822,410	1.2%
Nestle SA (Switzerland)	Consumer Goods	200,635	23,664,466	1.0%
Taiwan Semiconductor Manufacture (Taiwan)	Electronics	1,123,389	21,189,984	0.9%
AIA Group LTD (Hong Kong)	Insurance	1,714,222	21,002,610	0.9%
Sanofi (France)	Healthcare	176,000	16,947,636	0.7%
Rio Tinto PLC. (United Kingdom)	Mining	221,839	16,587,382	0.7%
Samsung Electronic Co. LTD (South Korea)	Electronics	221,450	16,512,427	0.7%
ASML Holding NV (Netherlands)	Semiconductors	29,066	14,138,351	0.6%
Total Top 10 International Equity Holdings		4,203,392	$ 214,407,717	9.4%
Total International Equity			$ 2,279,476,850	100.0%

Top 10 Fixed Income Holdings	Sector	Par	Fair Value	% of Total
U.S. Treasury Bond 1.625% 11/15/2050	US Governments	22,055,000	$ 21,972,294	0.8%
U.S. Treasury Note VAR RT 04/30/2022	US Governments	20,300,000	20,316,037	0.7%
U.S. Treasury Note 2.375% 05/15/2029	US Governments	14,000,000	15,822,240	0.6%
U.S. Treasury Note VAR RT 12/20/2028	Corporate	11,394,000	12,869,979	0.5%
U.S. Treasury Note 2.875% 05/15/2028	US Governments	10,600,000	12,281,054	0.4%
Federal Farm Credit Bank 1.990% 07/30/2040	US Agencies	12,100,000	12,101,815	0.4%
U.S. Treasury Bond 4.500% 02/15/2036	US Governments	8,000,000	11,740,960	0.4%
Federal Home loan Bank 1.990% 07/30/2040	US Agencies	9,800,000	11,719,624	0.4%
Federal National Mortgage Association 0.875% 08/05/2030	US Agencies	11,500,000	11,286,513	0.4%
U.S. Treasury Note 2.250% 08/15/2027	US Governments	10,000,000	11,088,300	0.4%
Total Top 10 Fixed Income Holdings		129,749,000	$ 141,198,816	5.2%
Total Fixed Income			$ 2,731,679,476	100.0%

Schedule of Investment Manager Fees and Assets Under Management

For year ended December 31, 2020

Asset Category	Investment Manager Fees	Assets Under Management
Equity		
Adelante Capital Management	$ 500,639	$ 93,945,695
Ariel Investments	694,121	120,592,946
CastleArk Management	695,878	147,254,263
Channing Capital Management	1,038,148	238,488,927
Franklin Templeton Investments	1,840,719	389,244,964
Frontier Capital Management	1,142,388	204,685,376
Great Lakes Advisors, Inc.	466,193	396,705,574
J.P. Morgan Asset Management	549,988	194,790,436
Lazard Asset Management, LLC	782,617	425,534,763
Mesirow Financial	272,781	53,215,200
Mondrian Investment Partners, Ltd.	1,113,435	184,256,995
Progress Investment Management	149,623	97,650
Strategic Global Advisors	666,907	118,188,267
RhumbLine Advisers	237,313	2,682,790,661
Russell Implementation Services, Inc.	182,279	555,585,815
State Street Global Advisors	383,980	904,317,667
Wells Capital Management	1,544,922	259,775,034
William Blair & Company	864,429	149,427,553
Total Global Equity	$ 13,126,360	$ 7,118,897,786
Fixed Income		
Franklin Templeton Investments	$ 715,510	$ 244,996,202
Garcia Hamilton	214,648	149,265,614
LM Capital Group, LLC	709,485	479,653,170
MacKay Shields	912,491	455,782,388
Mellon Capital	141,109	624,794,995
New Century Investment Management	287,544	148,294,717
PGIM Investments	858,933	453,637,338
Progress Investment Management *	10,368	—
Xponance (Formerly Piedmont Investment Advisors)	440,193	282,367,679
Total Fixed Income	$ 4,290,281	$ 2,838,792,103

* Progress Investment Management dissolved in 2020.

Schedule of Investment Manager Fees and Assets Under Management (continued)

For year ended December 31, 2020

Asset Category	Investment Manager Fees	Assets Under Management
Real Estate		
Angelo Gordon & Co.	$ 263,969	$ 20,612,416
Artemis Real Estate Partners	440,954	12,652,489
Blackstone Alternative Asset Management	787,259	34,091,168
CBRE Global Investors	333,780	28,501,790
Clarion Partners	992,912	87,429,033
J.P. Morgan Asset Management	2,236,850	267,959,235
LaSalle Investment Management	627,514	14,480,463
Mesirow Financial	601,302	62,579,350
Prudential Real Estate Investors	1,990,541	248,165,695
Total Real Estate	$ 8,275,081	$ 776,471,639
Hedge Funds of Funds		
Blackstone Alternative Asset Management	$5,104,919	$533,277,504
The Rock Creek Group	1,442,330	206,762,500
Total Hedge Funds	$ 6,547,249	$ 740,040,004
Private Equity **		
Legacy direct	$ —	$ 544,390
Mesirow Financial	2,587,968	926,861,720
Muller and Monroe Asset Management	286,058	29,027,023
SPC Capital Management	15,993	2,118,932
Total Private Equity	$ 2,890,019	$ 958,552,065
Short-Term Investments		
BNY Mellon ***	$ —	$ 42,414,393
Total	$ 35,128,990	$ 12,475,167,990

** Fees shown are for fund-of-fund managers and do not reflect fees of underlying managers of investments, which are reflected in the net income from the related investment.

*** Investments are held in commingled funds and/or publicly traded funds, and related investment returns are net of fees.

Schedule of Brokerage Commissions

For Year Ended December 31, 2020

Broker Name	Number of Shares	Commissions	Cost per Share
Domestic Equity Commissions			
Loop Capital Markets, LLC*	7,942,320	$ 224,279	$ 0.028
Cabrera Capital Markets*	5,654,628	126,953	0.022
Williams Capital Group *	2,422,404	52,710	0.022
Penserra Securities*	3,080,880	49,011	0.016
Stiffel Nicolaus	1,663,581	45,317	0.027
Baird, Robert W & Co.	1,529,849	43,508	0.028
Raymond James & Associates, Inc.	1,326,506	36,642	0.028
Goldman Sachs & Co.	1,225,837	36,164	0.030
Piper Jaffray & Co.	912,656	32,695	0.036
Liquident, Inc.	1,756,380	32,327	0.018
J.P. Morgan Securities	1,104,828	30,623	0.028
CL King & Associates *	1,226,433	28,071	0.023
Jefferies, LLC	1,064,649	26,245	0.025
Instinet Clearing Service, Inc.	1,121,934	23,898	0.021
Keybanc Capital Markets, Inc.	819,297	21,161	0.026
National Financial Services Corp.	865,596	19,313	0.022
Wells Fargo Securities, LLC.	735,874	18,391	0.025
Blaylock & Co Inc.*	756,979	17,788	0.023
Pershing, LLC	544,135	16,510	0.030
William Blair & Co.	608,081	15,481	0.025
Credit Suisse	543,215	15,102	0.028
RBC Capital Market, LLC	492,317	14,043	0.029
CastleOak Securities, LP *	554,525	12,264	0.022
Keefe, Bruyette & Woods, Inc.	400,380	10,693	0.027
ISI Group, Inc.	338,757	10,628	0.031
Brokers with < $10,000 of Commission	6,488,210	155,229	0.024
Total Domestic Equity Commissions	45,180,251	$ 1,115,046	$ 0.025

* Women/minority-owned brokerage firm. The Retirement Board's brokerage policy encourages investment managers, as they search for best possible trade execution, to utilize women/minority-owned enterprises, specifically firms headquartered in the State of Illinois.

Schedule of Brokerage Commissions (continued)

For Year Ended December 31, 2020

Broker Name	Number of Shares	Commissions	Cost per Share
International Equity Commissions			
Loop Capital Markets, LLC *	9,264,129	$ 58,287	$ 0.006
Credit Suisse	4,715,683	46,350	0.010
Morgan Stanley & Co.	4,879,657	37,693	0.008
Citigroup Global Markets, Inc.	1,099,479	26,704	0.024
UBS Warburg	7,996,562	26,004	0.003
Penserra Securities*	2,460,704	23,621	0.010
Merrill Lynch Securities	3,183,266	21,375	0.007
Goldman Sachs & Co.	3,308,865	20,606	0.006
Societe Generale	2,215,599	16,812	0.008
J.P. Morgan Securities	2,263,931	14,462	0.006
Mischler Financial Group, Inc.*	1,169,220	14,437	0.012
Jefferies, LLC	2,727,980	14,283	0.005
Barclays Capital	865,131	10,849	0.013
Investment Technology Group LTD	1,601,883	10,668	0.007
Instinet Europe Limited	2,189,717	10,430	0.005
RBC Dominion Security Services	1,208,326	10,044	0.008
Daiwa Capital Markets America, Inc.	457,400	9,782	0.021
North South Capital, LLC *	911,350	9,465	0.010
Credit Lyonnais Sec	1,207,870	7,093	0.006
Joh. Berenberg, Gossler & Co.	90,577	6,735	0.074
Cabrera Capital Markets*	453,428	6,440	0.014
Bofa Securities, Inc.	581,337	6,187	0.011
Citigroup Global Markets, Inc.	2,852,495	5,326	0.002
Brokers with < $5,000 of Commission	40,850,808	172,326	0.004
Total International Equity Commissions	98,555,397	$ 585,979	$ 0.006

* Women/minority-owned brokerage firm. The Retirement Board's brokerage policy encourages investment managers, as they search for best possible trade execution, to utilize women/minority-owned enterprises, specifically firms headquartered in the State of Illinois.

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ACTUARIAL Section

This section includes the actuarial reports and summarizes actuarial liability and unfunded actuarial liability. Schedules of data summarizing information about members and beneficiaries, actuarial assumptions, and principal provisions, and a glossary of terms are also included.

June 3, 2021

Board of Trustees
County Employees' and Officers' Annuity and Benefit Fund of Cook County
Chicago, Illinois

RE: December 31, 2020 Actuarial Valuation

Ladies and Gentlemen:

In accordance with your request, we have completed an actuarial valuation of the County Employees' and Officers' Annuity and Benefit Fund of Cook County ("CEABF" or "the Fund") as of December 31, 2020. The major findings of the valuation are contained in this report.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the CEABF's staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information provided in prior years. The valuation results depend on the integrity of this information. The benefits considered are those delineated in the Fund. The CEABF was established on July 1, 1926 and is governed by legislation contained in the Illinois Compiled statutes, particularly Chapter 40, as amended and restated effective December 31, 2020. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

Cavanaugh Macdonald performs the actuarial valuation annually. All exhibits, except Summary of Fair Value of Assets and Changes in Fair Value of Assets were prepared by the actuary.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: experience differing from that anticipated by the economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the CEABF's funded status); and changes in fund provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions prior to the next experience study.

The CEABF is funded by Employer and Member Contributions. The County levies a tax annually equal to the total amount of contributions made by the members in the calendar year 2 years prior to the year of the levy, multiplied by 1.54. This funding mechanism is insufficient to meet the needs of the CEABF. We project that the CEABF will become insolvent in 2045.

We recommend that a funding policy be legislated that is sufficient to pay the Normal Costs of active Fund members, Fund expenses, and amortize the Unfunded Actuarial Accrued Liability as a level percent of payroll (or salary) over a period no longer than 30 years.

The economic and demographic assumptions used in the valuation were adopted by the Board and first reflected in the December 31, 2017 valuation. The Board's recent practice is to review the experience of the CEABF at least once every four years to determine if any changes to the valuation assumptions are warranted. The assumptions used in the valuation meet the parameters set by the Actuarial Standards of Practice and are based on recommendations made and approved by the Board as part of an Experience Study covering plan years from January 1, 2013 through December 31, 2016. We recommend performing an Experience Study covering plan years from January 1, 2017 through December 31, 2020 to compare economic and demographic experience against the actuarial assumptions used in the valuation. The implementation of updated assumptions would occur during the December 31, 2021 valuation. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown beginning on page 110.

Actuarial computations presented in this report are for purposes of determining the actuarial contribution rates for funding the Fund based on the Board's funding policy report and all supporting schedules to meet the parameters and requirements for disclosure of Governmental Accounting Standards Board (GASB) Statement No. 67 and No. 68. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Fund's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

In order to prepare the results in this report we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We have prepared required accounting information for GASB Statement Nos. 67 and 68 for the measurement year ending December 31, 2020, based on valuation dates of December 31, 2019 and December 31, 2020.

The actuary prepared, or assisted in preparing, the following supporting information for the actuarial valuation:

- Comparative Summary of Key Actuarial Valuation Results
- Actuarial Liabilities and Normal Cost
- Actuarial Contributions
- Calculation of Actuarial (Gain)/Loss
- Analysis of Experience
- Actuarial Balance Sheet
- History of UAAL and Funded Ratio
- Solvency Test
- Reconciliation of Change in Unfunded Actuarial Liability
- Determination of Actuarial Value of Assets
- GASB 67 Schedule of Changes in Net Pension Liability
- GASB 67 Net Pension Liability (Asset)
- GASB 67 Sensitivity of Net Pension Liability
- GASB 67 and 68 Actuarial Assumptions and Methods
- Membership Data
- Summary of Benefit Provisions
- Description of Actuarial Methods and Valuation Procedures
  - Actuarial Cost Method
  - Asset Valuation Method
  - Valuation Procedures
- Summary of Actuarial Assumptions

The actuaries who worked on this assignment are pension actuaries. CMC's advice is not intended to be a substitute for qualified legal or accounting counsel.

This is to certify that Larry Langer and Wendy Ludbrook are members of the American Academy of Actuaries, have experience in performing valuations for public retirement plans, and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board and the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement fund and on actuarial assumptions that are internally consistent and reasonable based on the actual experience of the Fund and future expectations. However, the Board of Trustees has the final decision regarding the selection of the assumptions and adopted them as indicated in Appendix C.

Respectfully submitted,

Larry Langer, ASA, EA, FCA, MAAA
Consulting Actuary

Wendy T. Ludbrook, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

Ryan Gundersen
Senior Consultant

Overview

The County Employees' and Officers' Annuity and Benefit Fund of Cook County ("CEABF" or "the Fund") provides pension and ancillary benefit payments to the active, retired and separated employees of Cook County. A Retirement Board comprised of retiree, employee, and appointed representatives is responsible for administering the Fund and providing oversight of the investment policy. This report presents the results of the actuarial valuation of the Fund benefits as of the valuation date of December 31, 2020.

Purpose

An actuarial valuation is performed on the Fund annually as of the end of the fiscal year. The primary purposes of performing the valuation are:

- to estimate the liabilities for the future benefits expected to be provided by the Fund;
- to determine the actuarial contribution rate, based on the Fund's funding policy;
- to measure and disclose various asset and liability measures;
- to monitor any deviation between actual Fund experience and experience predicted by the actuarial assumptions so that recommendations for assumption changes can be made when appropriate;
- to analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

Membership

Actives: As of December 31, 2020, there were 19,102 employees in active service (including 176 on disability) covered under the provisions of the Fund. The significant age, service, salary and accumulated contribution information for these employees is summarized below, along with comparative figures from the last actuarial valuation one year earlier.

	December 31, 2020	December 31, 2019
Number of active employees	19,102	19,551
Average age	47.9	47.8
Average years of service	13.6	13.9
Total annual payroll for year ended	$ 1,532,744,306	$ 1,553,498,503
Average annual salary	80,240	79,459
Total accumulated contributions	$ 1,785,730,980	$ 1,812,755,798
Average accumulated contributions	93,484	92,719

The number of active members decreased by 2.3% from the previous valuation date. The average age of the active members increased by 0.1 years, and the average service decreased by 0.3 years. The total annual salary decreased by 1.3%. The average salary increased by 1.0% from the previous valuation.

Disabilities: There were 176 disabled members (included in the active data). There were 159 disabilities in the prior year.

Retirees and Beneficiaries: In addition to the active members, there were 16,572 retired members and 2,870 beneficiaries who are receiving monthly benefit payments on the valuation date. The significant age and annual benefit information for these members are summarized below with comparative figures from the last actuarial valuation performed one year earlier.

	December 31, 2020	December 31, 2019
Number of members receiving payments		
Retirees	16,572	16,305
Beneficiaries	2,870	2,838
Total	19,442	19,143
Average age	72.4	72.3
Annual benefit amounts		
Retirees	$ 822,906,583	$ 778,302,518
Beneficiaries	66,240,474	62,084,048
Total	$ 889,147,057	$ 840,386,566
Average annual benefit payments	$ 45,733	$ 43,900

The number of retired members and beneficiaries increased by 1.6% from the previous valuation date. The average age of the retired members increased by 0.1 years. The total annual benefit payments for these members increased by 5.8% from the previous valuation date.

Inactives: In addition to the active and retired members, there were 16,404 inactive members who did not elect to receive their accumulated contributions when they left covered employment. The age information for these inactive members is summarized below with comparative figures from the last actuarial valuation one year earlier.

	December 31, 2020	December 31, 2019
Number of inactive members	16,404	15,422
Average age	49.9	49.1

The number of inactive members increased by 6.4% from the previous valuation. The average age of the inactive members increased by 0.8 years.

In our opinion, the membership data collected and prepared for use in this actuarial valuation meets the data quality standards required under Actuarial Standards of Practice No. 23.

Fund Assets

The Fund's assets are held in trust and invested for the exclusive benefit of Fund members. The trust is funded by member and employer contributions, and pays benefits directly to eligible members in accordance with Fund provisions. The assets are audited annually and are reported at fair value. On a fair value basis, the Fund has a Net Position Available for Benefits of $12.6 billion as of December 31, 2020. This includes an increase of $1.1 billion from the Net Position Available for Benefits of $11.5 billion as of December 31, 2019. During the prior year, the fair value of assets experienced an investment rate of return of 12.7% (net of investment expenses), as reported by the investment consultant.

In order to reduce the volatility investment gains and losses can have on the Fund's actuarially required contribution and funded status, the Board has adopted a five-year smoothing method to determine the actuarial value of assets used for funding purposes. This method recognizes gains and losses, i.e. the difference between actual investment return during the year and the expected return based on the valuation interest rate, on a level basis over a five year period. In our opinion, this method complies with Actuarial Standards of Practice No. 44.

As of December 31, 2020, the assets available for benefits on an actuarial value basis were $11.8 billion. This includes an increase of $0.8 billion over the actuarial value of assets of $11.0 billion as of December 31, 2019. During 2020, the actuarial value of assets experienced an actuarial rate of return of 10.1% which is based on a five-year averaging of investment returns.

A summary of the assets held for investment, a summary of changes in assets, and the development of the actuarial value of assets is shown beginning on page 98.

Actuarial Experience

Differences between the expected experience based on the actuarial assumptions and the actual experience create changes in the actuarial accrued liability, actuarial value of assets, and the unfunded actuarial accrued liability from one year to the next. These changes create an actuarial gain if the experience is favorable and an actuarial loss if the experience is unfavorable. The Fund experienced a total net actuarial gain of $346.8 million during the prior year. This net gain is about 2.0% of the Fund's prior year actuarial accrued liability. The net gain is a combination of two principal factors, demographic experience and investment performance under actuarial smoothing. Below is a more detailed discussion.

The demographic experience tracks actual changes in the Fund's population compared to the assumptions for decrements such as mortality, turnover, and retirement, as well as pay increases. The Fund experienced a demographic gain of $43.1 million during the year ending December 31, 2020. This gain decreased the unfunded actuarial accrued liability by $43.1 million and increased the funded ratio by 0.2%.

There were 17,342 active members who were also reported active in the December 31, 2019 actuarial valuation. The total pensionable salary for this group increased by 3.2%, which was lower than the 3.9% increase that was expected.

Actuarial Experience (continued)

Continued tracking of the demographic experience is warranted in order to confirm the appropriateness of the actuarial assumptions. Details of the demographic, economic, and other assumptions used to value the Fund liabilities and normal cost can be found beginning on page 110. In our opinion, the economic assumptions comply with Actuarial Standards of Practice No. 27 and the demographic assumptions comply with Actuarial Standards of Practice No. 35.

On the asset side, the rate of return on the fair value of assets for the year ending December 31, 2020 was reported to be 12.7%, which was higher than the assumed rate of 7.25%.

The Fund experienced a gain on an actuarial value of assets basis. The rate of return on the actuarial value of Fund assets for the year ending December 31, 2020 was approximately 10.1% compared to the assumption of 7.25%, resulting in an asset gain of $303.6 million. This gain decreased the unfunded actuarial accrued liability by $303.6 million and increased the funded ratio by 1.7%.

The rate of return on the fair value of assets for the year ending December 31, 2020 was higher than the assumed rate of 7.25%. The actuarial value of the assets recognizes only 20% of the 2020 unexpected change in fair value, delaying the recognition of the remaining 80% over the next four years. Moreover, the actuarial value of assets also recognizes deferred portions of prior years' gains and losses on fair value. The investment gain recognized this year is primarily due to the investment gains in 2020, 2019 and 2017. It should be noted that the Fund's assumed asset return of 7.25% during 2020 is a long-term rate and short-term performance is not necessarily indicative of expected long-term future returns.

A summary of the actuarial gains and losses experienced during the prior year is shown on page 95.

Actuarial Contributions

The current contribution mechanism is not sufficient to fund the CEABF in an actuarially sound manner. The County levies a tax annually equal to the total amount of contributions made by the members in the calendar year 2 years prior to the year of the levy, multiplied by 1.54. This funding policy is insufficient to meet the needs of the CEABF. We project that the CEABF will become insolvent in 2045. We recommend that a funding policy be legislated that is sufficient to pay the Normal Costs of active Fund members, Fund expenses, and amortize the unfunded actuarial accrued liability as a level percent of payroll (or salary) over a period no longer than 30 years. We summarize those costs based on 30 years in the next paragraph.

The normal cost represents the cost of the benefits that accrue during the year for active members under the Entry Age Actuarial Cost Method. It is determined as a level percentage of pay which, if paid from entry age to the assumed retirement age, assuming all the actuarial assumptions are exactly met by experience, would accumulate to a fund sufficient to pay all benefits provided by the Fund. The expected member contributions are subtracted from this amount to determine the employer normal cost. The employer normal cost for 2021 has been determined to be $72.2 million, or 4.54% of pay. This represents a decrease in the employer normal cost rate of 0.14% of pay from last year's employer normal cost rate of 4.68%.

The cost method also determines the actuarial accrued liability which represents the value of all accumulated past normal cost payments. This amount is compared to the actuarial value of assets to determine if the Fund is ahead or behind in funding as of the valuation date. The difference between the total actuarial accrued liability and the actuarial value of assets equals the amount of unfunded actuarial accrued liability or surplus (if negative) on the valuation date. This amount is amortized and added to the employer normal cost plus Fund expenses to determine the annual actuarially required employer contribution for the year.

The unfunded actuarial accrued liability as of December 31, 2020 is $5.6 billion. This represents an decrease of $0.4 billion in the unfunded actuarial accrued liability from last year's amount of $6.0 billion. The annual payment required to amortize the unfunded actuarial accrued liability of $5.6 billion, over a period of 30 years, as of December 31, 2020 is $450.3 million, or 28.3% of pay.

The annual actuarially required employer contribution for fiscal year ending December 31, 2022 is $522.5 million, or 32.9% of pay. This represents an decrease of $27.9 million in the employer contribution amount of $550.4 million for fiscal year ending December 31, 2021, or a decrease of 1.4% of pay from last year's employer contribution rate of 34.3%.

The actuarial liabilities and development of the annual actuarial employer contribution is beginning on page 93.

In our opinion, the measurement of the benefit obligations and determination of the actuarial cost of the Fund is performed in compliance with Actuarial Standards of Practice No. 4.

Funded Status

The funded status is a measure of the progress that has been made in funding the Fund as of the valuation date. It is determined as a ratio of the actuarial value of assets divided by the total actuarial accrued liability on the valuation date. A ratio of over 100% represents a Fund that is ahead in funding, and a ratio of less than 100% represents a Fund that is behind in funding on the valuation date.

As of December 31, 2020 the funded ratio of the Fund is 67.58%. This represents an increase of 2.75% from last year's funded ratio of 64.83% as of December 31, 2019.

Where presented, references to "funded ratio" and "unfunded accrued liability" are typically measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the Fund if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities. A history of the unfunded actuarial accrued liability and the funded ratio is shown on page 96.

Accounting Information

The Governmental Accounting Standards Board (GASB) issues statements which establish financial reporting standards for defined benefit pension Funds and accounting for the pension expenditures and expenses for governmental employers. The required financial reporting information for the Fund and the Employer under GASB No. 67 and 68 can be found beginning on page 102.

Changes in Fund Provisions

None, there were no changes in benefits or other Fund provisions considered in this actuarial valuation since the last valuation performed as of December 31, 2019.

Changes in Actuarial Assumptions, Methods, or Procedures

None, the assumptions used in this valuation were developed as part of an Experience Study covering plan years from January 1, 2013 through December 31, 2016 and first used in the December 31, 2017 actuarial valuation. A description of these assumptions can be found beginning on page 110.

All results presented in this report for years prior to the December 31, 2018 were performed by the prior actuary(s).

Comparative Summary of Key Actuarial Valuation Results
Principal Valuation Results

Actuarial Valuation as of	December 31, 2020	December 31, 2019
Summary of Member Data		
Number of Members Included in the Valuation:		
Active Members	19,102	19,551
Retirees and Beneficiaries	19,442	19,143
Inactive Members	16,404	15,422
Total	54,948	54,116
Annual Payroll		
Average	$ 80,240	$ 79,459
Annual Benefit Payments		
Retirees and Beneficiaries (Average) [1]	$ 45,733	$ 43,900
Investment Returns		
Fair Value Rate of Return (net of investment expenses)[2]	12.74%	19.10%
Actuarial Value Rate of Return	10.06%	6.80%
Summary of Assets and Liabilities		
Total Actuarial Accrued Liability	$ 17,410,026,961	$ 16,941,207,568
Actuarial Value of Assets	11,765,568,459	10,983,364,279
Unfunded Actuarial Accrued Liability	$ 5,644,458,502	$ 5,957,843,289
Funded Ratio	67.58%	64.83%

Fiscal Year Ending	December 31, 2022	December 31, 2021
Employer Actuarial Required Contribution[3]		
Employer Normal Cost including Administrative Expenses	$ 72,162,148	$ 75,113,745
Amortization of Unfunded Actuarial Accrued Liability (Surplus)	450,305,055	475,306,346
Employer Actuarial Required Contribution	$ 522,467,203	$ 550,420,091

1 The average annual benefit payments for retirees only is $49,656 as of December 31, 2020 and $47,734 as of December 31, 2019.

2 Rate of return Provided by the CCPF.

3 As of the date of the actuarial valuation without adjustment.

Actuarial Liabilities and Normal Cost

Actuarial Liabilities	Tier 1	Tier 2	Total	December 31, 2019 Total
1. Present Value of Projected Benefits				
a. Retirement Benefits	$ 6,910,302,805	$ 431,681,337	$ 7,341,984,142	$ 7,549,300,520
b. Withdrawal Benefits	168,171,122	172,582,890	340,754,012	344,928,388
c. Death Benefits	75,095,438	12,370,517	87,465,955	89,659,409
Total	**$ 7,153,569,365**	**$ 616,634,744**	**$ 7,770,204,109**	**$ 7,983,888,317**
2. Retired Members and Beneficiaries Receiving Benefits	10,188,163,162	660,632	10,188,823,794	9,685,006,939
3. Inactive Members with Deferred Benefits	847,374,278	31,370,940	878,745,218	751,344,628
4. Total Present Value of Projected Benefits (1. + 2. + 3.)	**$ 18,189,106,805**	**$ 648,666,316**	**$18,837,773,121**	**$18,420,239,884**
5. Present Value of Future Normal Costs	1,074,415,596	353,330,564	1,427,746,160	1,479,032,316
6. Total Actuarial Accrued Liability	**$ 17,114,691,209**	**$ 295,335,752**	**$17,410,026,961**	**$16,941,207,568**
a. Active Members	6,079,153,769	263,304,180	6,342,457,949	6,504,856,001
b. Retired Members and Beneficiaries Receiving Benefits	10,188,163,162	660,632	10,188,823,794	9,685,006,939
c. Inactive Members with Deferred Benefits	847,374,278	31,370,940	878,745,218	751,344,628

Normal Cost as of December 31, 2020	Tier 1		Tier 2		Total		December 31, 2019 Total	
Projected Capped Payroll for Fiscal Year 2021	**$ 1,066,106,440**		**$ 523,951,398**		**$ 1,590,057,838**		**$ 1,605,389,532**	
1.Total Normal Cost	**Amount**	**% of Pay**	**Amount**	**% of Pay**	**Amount**	**% of Pay**	**Amount**	**% of Pay**
a. Retirement Benefits	$136,227,965	12.78%	$33,556,431	6.40%	$169,784,396	10.68%	$174,496,175	10.87%
b. Withdrawal Benefits	12,959,153	1.22%	10,762,018	2.05%	23,721,171	1.49%	24,076,366	1.50%
c. Duty Disability Benefits	39,577	0.00%	—	0.00%	39,577	0.00%	5,885	0.00%
d. Ordinary Disability Benefits	5,447,843	0.51%	—	0.00%	5,447,843	0.34%	4,536,495	0.28%
e. Death Benefits	2,368,204	0.22%	959,069	0.18%	3,327,273	0.21%	3,383,788	0.21%
f. Administrative Expenses	3,520,463	0.33%	1,730,176	0.33%	5,250,639	0.33%	5,339,717	0.33%
Total	**$160,563,205**	**15.06%**	**$47,007,694**	**9.02%**	**$207,570,899**	**13.05%**	**$211,838,426**	**13.20%**
2.Expected Member Contributions	**$ 90,819,861**	**8.52%**	**$44,588,890**	**8.51%**	**$135,408,751**	**8.52%**	**$136,724,682**	**8.52%**
3.Employer Normal Cost (1. - 2.)	**$ 69,743,344**	**6.54%**	**$ 2,418,804**	**0.46%**	**$ 72,162,148**	**4.54%**	**$ 75,113,745**	**4.68%**

Actuarial Contributions*

Valuation Date	December 31, 2020	December 31, 2019
1. Projected Payroll for Year Beginning	$ 1,590,057,838	$ 1,605,389,532
2. Total Actuarial Accrued Liability	$ 6,124,386,864	$ 6,284,209,993
a. Active Members	154,052,762	154,963,388
i. Retirement Benefits	64,018,323	65,682,620
ii. Withdrawal Benefits	$ 6,342,457,949	$ 6,504,856,001
iii. Death Benefits	$ 10,188,823,794	$ 9,685,006,939
iv. Total	878,745,218	751,344,628
b. Retired Members and Beneficiaries Receiving Benefits	$ 17,410,026,961	$ 16,941,207,568
c. Inactive Members with Deferred Benefits	11,765,568,459	10,983,364,27
d. Total (2a. + 2b. + 2c.)	$ 5,644,458,502	$ 5,957,843,289
3.Actuarial Value of Assets	67.58%	64.83%
4. Unfunded Actuarial Accrued Liability (UAAL) (2d. - 3.)	354.98%	371.12%
5. Funded Ratio (3. / 2d.)		
6. UAAL as a Percent of Annual Payroll (4. / 1.)		

Development of Employer Contribution*	Fiscal Year Ending December 31, 2022	Fiscal Year Ending December 31, 2021
7 Amortization Payment for UAAL (30 year amortization)		
a. Amount	$ 450,305,055	$ 475,306,346
b. As a % of pay (7a. / 1.)	28.32%	29.61%
8. Employer Normal Cost		
a. Amount	$ 72,162,148	$ 75,113,745
b. As a % of pay (8a. / 1.)	4.54%	4.68%
9. Employer Actuarial Required Contribution		
a. Amount (8a + 7a)	$ 522,467,203	$ 550,420,091
b. As a % of pay (9a. / 1.)	32.86%	34.29%

* Amount needed to fund the CEABF in an actuarially responsible manner. These amounts have not been adjusted to account for the difference in Valuation Date and Fiscal Year End.

Calculation of Actuarial (Gain)/Loss

Development of Actuarial (Gain) / Loss		Amount
1. Expected Actuarial Accrued Liability		
a. Actuarial Accrued Liability at December 31, 2019	$	16,941,207,568
b. Normal Cost at December 31, 2019		206,498,709
c. Interest on a. + b. to End of Year		1,243,208,705
d. Benefit Payments and Refunds, with Interest to End of Year		937,747,382
e. Expected Actuarial Accrued Liability Before Changes (a. + b. + c. - d.)		17,453,167,600
f. Change in Actuarial Accrued Liability at December 31, 2020 due to:		
i. Change in Actuarial Assumptions		—
ii. Change in Actuarial Methods		—
g. Expected Actuarial Accrued Liability at December 31, 2020 (e. + f.i. + f.ii.)	$	17,453,167,600
2. Actuarial Accrued Liability at December 31, 2020		17,410,026,961
3. Liability (Gain) / Loss (2. – 1.g.)	$	**(43,140,639)**
4. Expected Actuarial Value of Assets		
a. Actuarial Value of Assets at December 31, 2019	$	10,983,364,279
b. Interest on a. to End of Year		796,923,910
c. Contributions Paid During 2020		603,691,387
d. Interest on c. to End of Year		21,500,927
e. Benefit Payments, Refunds and Administrative Expenses, with Interest to End of Year	$	942,926,092
f. Change in Actuarial Value of Assets at December 31, 2020 due to:		
i. Change in Asset Method		—
g. Expected Actuarial Value of Assets at December 31, 2020 (a. + b. + c. + d. – e. – f.i.)	$	11,461,924,411
5. Actuarial Value of Assets as of December 31, 2020		11,765,568,459
6. Actuarial Asset (Gain) / Loss (4.g. - 5.)	**$**	**(303,644,048)**
7. Actuarial (Gain) / Loss (3. + 6.)	**$**	**(346,784,687)**

Analysis of Experience

Type of (Gain) or Loss		Year Ending December 31, 2020	As a % of Last Year's AAL
1. (Gain) or Loss During the Year from Experience:			
a. Salary	$	(48,554,330)	– 0.29%
b. Investment		(303,644,048	– 1.79%
c. Retiree Mortality		(61,669,787	– 0.36%
d. Other (turnover, retirement ages, service purchase, etc.)		67,083,478	0.40%
e. Total Experience (Gain) or Loss (a. + b. + c. + d.)	$	(346,784,687)	– 2.04%
2. Assumption and Method Changes		—	0.00%
3. Total (Gain) or Loss During Year (1.e. + 2.)	$	(346,784,687)	– 2.04%

Actuarial Balance Sheet

Financial Resources	December 31, 2020
1. Actuarial Value of Assets	$ 11,765,568,459
2. Present Value of Future Contributions	
a. Expected Member Contributions	931,389,348
b. Employer Normal Cost	496,356,812
c. Total	$ 1,427,746,160
3. Unfunded Actuarial Accrued Liability/(Reserve)	$ 5,644,458,502
4. Total Assets [1. + 2.c. + 3.]	$ 18,837,773,121

Benefit Obligations	December 31, 2020
1. Present Value of Future Benefits	
a. Active Members	$ 7,770,204,109
b. Retirees and Beneficiaries	10,188,823,794
c. Inactive Members	878,745,218
d. Total	$ 18,837,773,121

History of UAAL and Funded Ratio

Valuation Date	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Funded Ratio (AVA as a % of AAL)	Unfunded Actuarial Accrued Liability (UAAL)
December 31, 2011	$ 12,628,274,561	$ 7,897,102,116	62.54%	$ 4,731,172,445
December 31, 2012	13,418,486,943	7,833,882,926	58.38%	5,584,604,017
December 31, 2013	13,636,576,177	8,381,444,287	61.46%	5,255,131,890
December 31, 2014	14,140,547,353	8,810,509,070	62.31%	5,330,038,283
December 31, 2015	14,936,591,336	8,991,018,918	60.19%	5,945,572,418
December 31, 2016	15,456,773,985	9,488,223,349	61.39%	5,968,550,636
December 31, 2017	15,671,756,443	10,148,203,833	64.75%	5,523,552,610
December 31, 2018	16,314,389,047	10,512,756,514	64.44%	5,801,632,533
December 31, 2019	16,941,207,568	10,983,364,279	64.83%	5,957,843,289
December 31, 2020	17,410,026,961	11,765,568,459	67.58%	5,644,458,502

Reconciliation of Change In Unfunded Actuarial Liability

Development of Unfunded Actuarial Liability		Amount
1. Unfunded Actuarial Accrued Liability as of December 31, 2019	$	5,957,843,289
2. Total Normal Cost Paid During 2020		218,853,926
3. Interest on 1. and 2.		439,738,287
4. Employer Contribution Requirement of Normal Cost Plus Interest on Unfunded Liability for Period January 1, 2020 to December 31, 2020	$	658,592,213
5. Total Contribution for the Year (Includes Misc. Contribution)*		603,691,387
6. Interest on 5.		21,500,927
7. Increase/(Decrease) in Unfunded Liability Due to Employer Contribution Plus Interest Being Greater Than Normal Cost Plus Interest on Unfunded Liability (4. - (5.+6.))	$	33,399,899
8. Increase/(Decrease) in Unfunded Liability Due to:		
a. Investment Return Lower/(Higher) Than Assumed		(303,644,048)
b. Salary Increases Higher/(Lower) Than Assumed		(48,554,330)
c. Assumption changes		—
d. Other Sources		5,413,692
9. Net Increase/(Decrease) in Unfunded Liability for the Year (7. + 8a. + 8b. + 8c. + 8d.)		(313,384,787)
10. Unfunded Actuarial Accrued Liability as of December 31, 2020 (1. + 9.)	$	5,644,458,502

* Includes an additional $309.2 million in supplemental contribution from the employer.

Summary of Fair Value of Assets

	Fair Value as of December 31, 2020		Fair Value as of December 31, 2019	
Asset Category	Amount	%	Amount	%
1. Short-Term Investments	$ 267,036,118	2.04%	$ 330,944,641	2.79%
2. Investments at Fair Value				
a. U.S. and International Equities	$ 6,930,194,686	53.03%	$ 6,282,967,633	52.98%
b. U.S. Government and Government Agency Obligations	1,021,751,132	7.82%	1,051,214,578	8.86%
c. Corporate Bonds	1,424,006,422	10.90%	1,106,718,809	9.33%
d. Collective International Equity Fund	82,904,306	0.63%	83,116,013	0.70%
e. Commingled Fixed Income Fund	40,925,720	0.31%	41,141,429	0.35%
f. Exchange Traded Funds	8,037,180	0.06%	8,691,798	0.07%
g. Private Equities	1,183,800,783	9.06%	937,775,477	7.91%
h. Hedge Funds	740,040,004	5.66%	730,203,620	6.16%
i. Real Estate	776,471,639	5.94%	689,481,138	5.81%
j. Total	$ 12,208,131,872	93.41%	$ 10,931,310,495	92.18%
3. Collateral Held for Securities Lending	$ 594,408,571	4.55%	$ 596,473,697	5.03%
4. Total Assets (1. + 2.j + 3.)	$ 13,069,576,561	100.00%	$ 11,858,728,833	100.00%
5. Receivables				
a. Interest and Dividends	$ 35,002,953		$ 33,186,100	
b. Investments Sold	116,443,382		126,392,197	
c. Other Receivables	203,262,815		212,862,900	
d. Total	$ 354,709,150		$ 372,441,197	
6. Payables				
a. Investments Purchased	$ 173,498,440		$ 135,043,608	
b. Securities Lending Collateral	594,408,571		596,473,697	
c. Other Payables	6,768,262		8,693,505	
d. Total	$ 774,675,273		$ 740,210,810	
7. Net Position for Pension Benefits [4. + 5.d – 6.d.]	**$ 12,649,610,438**		**$ 11,490,959,220**	

Changes in Fair Value of Assets

Transactions	December 31, 2020	December 31, 2019
Additions		
1. Contributions		
a. Contributions from Employers	$ 465,778,715	$ 488,003,692
b. Contributions from Plan Members	134,157,866	134,837,512
c. Total	$ 599,936,581	$ 622,841,204
2. Net Investment Income		
a. Interest and Dividends	$ 193,553,569	$ 217,929,216
b. Net Appreciation (Depreciation)	1,305,533,430	1,681,234,945
c. Net Securities Lending Income	2,394,419	3,308,560
d. Total	$ 1,501,481,418	$ 1,902,472,721
e. Less Investment Expense	36,023,573	36,827,682
f. Net Investment Income (Loss)	$ 1,465,457,845	$ 1,865,645,039
g. Miscellaneous	4,469,465	6,023,398
h. Employee Transfers	(714,659)	252,406
3. Total Additions (1c. + 2f. + 2g. + 2.h)	$ 2,069,149,232	$ 2,494,762,047
Deductions		
4. Benefits and Expenses		
a. Retirement Benefits	$ 874,506,754	$ 822,995,213
b. Refund of Contributions	30,990,651	37,745,951
c. Administrative Expenses	5,000,609	5,085,445
5. Total Deductions	$910,498,014	$865,826,609
6. Net Increase (Decrease) (3. - 5.)	$ 1,158,651,218	$ 1,628,935,438
Net Position Held in Trust for Pension Benefits		
a. Beginning of Year	$ 11,490,959,220	$ 9,862,023,782
b. End of Year	$ 12,649,610,438	$ 11,490,959,220

Determination of Actuarial Value of Assets

1. Actuarial Value of Assets as of December 31, 2019	$ 10,983,364,279
2. Unrecognized Return as of December 31, 2019	507,594,941
3. Fair Value of Assets as of December 31, 2019 (1. + 2.)	$ 11,490,959,220
4. Contributions	
a. Member (includes purchased service)	$ 134,157,866
b. Employer	465,778,715
c. Miscellaneous contributions	3,754,806
d. Total	$ 603,691,387
5. Distributions	
a. Benefit payments	$ 874,506,754
b. Refund of contributions	30,990,651
c. Administrative expenses	5,000,609
d. Total	$ 910,498,014
6. Expected Return at 7.25% on	
a. Item 1.	$ 796,293,910
b. Item 2.	36,800,633
c. Item 4.d.	21,500,927
d. Item 5.d.	32,428,078
e. Total (a. + b. + c. - d.)	$ 822,167,392
7. Actual Return on Fair Value for Fiscal Year, net of Investment Expenses	$ 1,465,457,845
8. Return to be Spread for Fiscal year (7. - 6e.)*	$ 643,290,453
9. Total Fair Value of Assets as of December 31, 2020	$ 12,649,610,438
10. Return to be Spread	

Fiscal Year	Return to be Spread	Unrecognized Percent	Unrecognized Return
2020	$ 643,290,453	80.00%	$ 514,632,362
2019	1,159,078,907	60.00%	695,447,344
2018	(1,175,047,434)	40.00%	(470,018,974)
2017	719,906,235	20.00%	143,981,247
2016	(13,011,088)	0.00%	—
			$ 884,041,979

11. Actuarial Value of Assets (9. —10.)	$ 11,765,568,459
12. Recognized rate of return for the Year on Actuarial Value of Assets	10.06%
13. Rate of Return for the Year on Market Value of Assets (reported by Cook County — net of inv. expenses)	12.74%

* Annual Return to be Spread calculation is based on assumed 7.25% investment return which includes an assumption that all expenses and revenues are paid mid-year on average.

Schedule of Funding Progress

The liabilities and assets resulting from the last ten actuarial valuations are as follows:

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (Actuarial Value) (b-a)	Funded Ratio (Actuarial Value) (a/b)	Covered Payroll (c)	Percentage of Covered Payroll (Fair Value) (b-a)/(c)
2011	$ 7,897,102,116	$ 12,628,274,561	$ 4,731,172,445	62.54%	$1,456,444,123	324.8%
2012	7,833,882,926	13,418,486,943	5,584,604,017	58.38%	1,478,253,368	377.8%
2013	8,381,444,287	13,636,576,177	5,255,131,890	61.46%	1,484,269,715	354.1%
2014	8,810,509,070	14,140,547,353	5,330,038,283	62.31%	1,514,550,023	351.9%
2015	8,991,018,918	14,936,591,336	5,945,572,418	60.19%	1,572,417,298	378.1%
2016	9,488,223,349	15,456,773,985	5,968,550,636	61.39%	1,580,251,254	377.7%
2017	10,148,203,834	15,671,756,443	5,523,552,609	64.75%	1,567,480,401	352.4%
2018	10,512,756,514	16,314,389,047	5,801,632,533	64.44%	1,533,721,507	378.3%
2019	10,983,364,279	16,941,207,568	5,957,843,289	64.83%	1,553,498,503	383.5%
2020	11,765,568,459	17,410,026,961	5,644,458,502	67.58%	1,532,744,306	368.3%

Schedule of Employer Contributions

The required contributions and actual percentages contributed over the last ten years are as follows:

Fiscal year Ended December 31,	Actuarially Determined Contribution (ADC)	Employer Contribution	Percentage Contributed
2011	$ 352,850,988	$ 160,652,118	45.53%
2012	454,327,461	152,734,539	33.62%
2013	493,724,370	147,720,014	29.92%
2014	540,218,287	146,075,414	27.04%
2015	595,370,046	136,075,504	22.86%
2016	519,642,931	414,703,155	79.81%
2017	514,888,487	511,750,985	99.39%
2018	562,815,816	549,437,252	97.62%
2019	523,625,965	488,003,692	93.20%
2020	536,955,558	465,778,715	86.74%

GASB 67 Schedule of Changes in Net Pension Liability

	2020	2019	2018	2017	2016	2015
Total Pension Liability						
Service Cost	469,652,001	367,986,188	440,682,868	478,904,097	559,176,234	496,161,454
Interest	1,038,868,271	1,078,970,836	1,027,348,255	1,082,982,064	1,002,950,495	994,674,970
Benefit changes	0	0	0	0	0	0
Difference between expected and actual experience	192,731,447	1,775,621	(278,982,116)	(152,859,373)	318,014,746	(126,330,351)
Changes of assumptions	1,766,822,859	2,760,713,592	(1,601,212,188)	(950,493,320)	(1,893,474,930)	1,329,087,966
Benefit payments, including refund of contributions	(905,497,405)	(860,741,164)	(805,394,705)	(757,930,854)	(709,560,225)	(676,470,215)
Net change in Total Pension Liability	2,562,577,173	3,348,705,073	(1,217,557,886)	(299,397,386)	(722,893,680)	2,017,123,824
Total Pension Liability — beginning	25,071,941,811	21,723,236,738	22,940,794,624	23,240,192,010	23,963,085,690	21,945,961,866
Total Pension Liability — ending (a)	27,634,518,984	25,071,941,811	21,723,236,738	22,940,794,624	23,240,192,010	23,963,085,690
Plan Fiduciary Net Position						
Contributions — employer	465,778,715	488,003,692	549,437,252	511,750,985	414,703,166	136,075,504
Contributions — member	134,157,866	134,837,512	134,159,171	138,826,184	139,355,592	137,707,719
Net investment income	1,465,457,845	1,865,645,039	(424,787,945)	1,399,625,874	629,442,470	(21,896,696)
Benefit payments, including refund of contributions	(905,497,405)	(860,741,164)	(805,394,705)	(757,930,854)	(709,560,225)	(676,470,215)
Administrative expense	(5,000,609)	(5,085,445)	(5,134,047)	(5,406,034)	(5,373,555)	(5,151,110)
Other	3,754,806	6,275,804	5,860,613	5,359,418	4,046,147	4,380,293
Net change in Plan Fiduciary Net Position	1,158,651,218	1,628,935,438	(545,859,661)	1,292,225,573	472,613,595	(425,354,505)
Plan Fiduciary Net Position – beginning	11,490,959,220	9,862,023,782	10,407,883,443	9,115,657,870	8,643,044,275	9,068,398,780
Plan Fiduciary Net Position – ending (b)	12,649,610,438	11,490,959,220	9,862,023,782	10,407,883,443	9,115,657,870	8,643,044,275
Net Pension Liability – ending (a) – (b)	14,984,908,546	13,580,982,591	11,861,212,956	12,532,911,181	14,124,534,140	15,320,041,415

GASB 67 Net Pension Liability (Asset)

	2020	2019	2018	2017	2016	2015
Total Pension Liability	27,634,518,984	25,071,941,811	21,723,236,738	22,940,794,624	23,240,192,010	23,963,085,690
Plan Fiduciary Net Position	12,649,610,438	11,490,959,220	9,862,023,782	10,407,883,443	9,115,657,870	8,643,044,275
Net Pension Liability	14,984,908,546	13,580,982,591	11,861,212,956	12,532,911,181	14,124,534,140	15,320,041,415
Ratio of Plan Fiduciary Net Position to Total Pension Liability	45.77%	45.83%	45.40%	45.37%	39.22%	36.07%
Covered-employee payroll	1,532,744,306	1,553,498,503	1,533,721,507	1,567,480,401	1,580,251,254	1,572,417,298
Net Pension Liability as a percentage of covered-employee payroll	977.65%	874.22%	773.36%	799.56%	893.82%	974.30%

GASB 67 Sensitivity of Net Pension Liability

	1% Decrease (2.68%)	Current Discount Rate (3.68%)	1% Increase (4.68%)
Total Pension Liability	$ 32,147,892,263	$ 27,634,518,984	$ 24,002,196,657
Fiduciary Net Position	12,649,610,438	12,649,610,438	12,649,610,438
Net Pension Liability	$ 19,498,281,825	$ 14,984,908,546	$ 11,352,586,219

The discount rate used to measure the total pension liability was 3.68%. The discount rate used to measure the total pension liability at December 31, 2019 was 4.14%. The projection of cash flows used to determine the discount rate assumed that CEABF contributions will continue to follow the current funding policy, which levies a tax annually equal to the total amount of contributions made by the members in the calendar year 2 years prior to the year of the levy, multiplied by 1.54. Based on this assumption, the Fund's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current Fund members. A municipal bond rate of 2.12% was used in the development of the blended GASB discount rate after that point. The 2.12% rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2019. The rate used for this purpose is the monthly average of the Bond Buyers General Obligation 20-year Municipal Bond Index Rate (formerly published monthly by the Board of Governors of the Federal Reserve System). Based on the long-term rate of return of 7.25% and the municipal bond rate of 2.12%, the blended GASB discount rate would be 3.68%. Please see the supporting exhibits for additional detail.

GASB 67 AND 68 Actuarial Assumptions and Methods

Measurement Date:	December 31, 2020	December 31, 2019
Valuation Date (VD):	December 31, 2019	December 31, 2018
Membership Data:		
Retirees	16,305	15,820
Beneficiaries	2,838	2,782
Inactive Vested Members	15,422	14,898
Active Employees	19,551	19,671
Total	54,116	53,171
Single Equivalent Interest Rate (SEIR):		
Long-Term Expected Rate of Return	7.25%	7.25%
Municipal Bond Index Rate at Measurement Date	2.12%	2.75%
Fiscal Year in which Fiduciary Net Position is Projected to be Depleted	2045	2043
Single Equivalent Interest Rate at Measurement Date	3.68%	4.14%
Actuarial Assumptions:		
– Projected Salary Increases	3.50%-8.00%	3.50%-8.00%
– Inflation Assumption	2.75%	2.75%

The projection of cash flows used to determine the discount rate assumed that CEABF contributions will continue to follow the current funding policy based on the tax levy. Based on this assumption, the Fund's fiduciary net position is projected to be insufficient to make all projected future benefit payments of current fund members. A municipal bond rate of 2.12% was used in the development of the blended GASB discount rate after that point. The 2.12% rate is based on the 20-year tax-exempt municipal bond (rating AA/Aa or higher) rate (Municipal Bond Index Rate). The rate used for this purpose is the monthly average of the Bond Buyers General Obligation 20-year Municipal Bond Index Rate (formerly published monthly by the Board of Governors of the Federal Reserve System). Based on the long-term rate of return of 7.25% and the municipal bond rate of 2.12%, the blended GASB discount rate would be 3.68%. See the preceding exhibits for more detail.

GASB 67 AND 68 Actuarial Assumptions and Methods (continued)

Investment Rate of Return Detail

The long-term expected rate of return on the Fund's investments was determined based on the results of an experience review. The results of the experience review were presented to the Board at the Board's March 2018 Meeting and adopted at a subsequent meeting. The rate of return assumption was based on the target asset allocation of the fund. In the experience review, best estimate ranges of expected future real rates of return (net of inflation) for the portfolio were developed, based on the expected returns of each major asset class and their weights in the portfolio. An econometric model that forecasts a variety of economic environments and then calculates asset class returns based on functional relationships between the economic variables and the asset classes was then used. Expected Investment expenses were subtracted and expected inflation was added to arrive at the long term expected nominal return. A value for the expected long term expected return was selected for the portfolio such that there was a better than 50% likelihood of the emerging returns exceeding the expected return.

Best estimates of arithmetic real rates of return (net of inflation) for each major asset class included in the Fund's target asset allocation as of December 31, 2020 are listed in the table below:

Asset Category	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Equities	33.00%	5.58%
International Equities	21.00%	5.88%
Fixed Income	26.00%	1.43%
Real Estate Funds	9.00%	4.52%
Private Equity	4.00%	6.91%
Hedge Funds	6.00%	2.91%
Short-Term Investment	1.00%	0.03%
Total	100.00%	

Summary of Benefit Provisions

Participant. A person employed by Cook County whose salary or wages is paid in whole or in part by the Cook County. An employee in service on or after January 1, 1984 shall be deemed as a participant regardless of when he or she became an employee.

Service. For all purposes except the minimum retirement annuity and ordinary disability benefit, service during four months in any calendar year constitutes one year of service. For the minimum retirement annuity, all service is computed in whole calendar months. Service for any 15 days in a calendar month shall constitute a month of service.

For purposes of the minimum retirement annuity, service shall include:

a. Any time during which the employee performed the duties of his or her position and contributed to the Fund.
b. Vacations and leaves of absence with whole or part pay.
c. Periods during which the employee receives a disability benefit from the Fund, and
d. Certain periods of accumulated sick leave.

Retirement Annuity — Eligibility. An employee who withdraws from service with 10 or more years of service is entitled to a retirement annuity upon attainment of age 50.

Retirement Annuity — Amount

Money Purchase Annuity. The amount of annuity based on the sum accumulated from the employee's salary deductions for age and service annuity plus 1/10 of the sum accumulated from the contributions by the County for age and service annuity for each completed year of service after the first 10. Except that when the employee retires after age 60, the full amount of contributions by the Employer are used.

Minimum Formula Annuity. The amount of annuity provided is equal to 2.4% of final average salary for each year of service. Final average salary is the highest average monthly salary for any 48 consecutive months within the last 10 years of service. Salary for pension purposes is actual salary earned exclusive of overtime or extra salary. The maximum amount of annuity is 80% of final average salary.

If an employee retires before age 60, the annuity is reduced by .5% for each full month or fraction thereof that the employee is under age 60 when the annuity begins, unless the employee has 30 or more years of service, in which case there is no reduction for retirement before age 60.

If the Minimum Formula Annuity is greater than the Money Purchase Annuity, the employee is entitled to receive the Minimum Formula Annuity.

Automatic Increase in Retirement Annuity. Employees who retire from service having attained age 60 or more, or, if retirement occurs on or after January 1, 1991, with at least 30 years of service, 3% of the annuity beginning January of the year following the year in which the first anniversary of retirement occurs. If retirement is before age 60 with less than 30 years of service, increases begin in January of the year immediately following the year in which age 60 is attained. Beginning January 1, 1998, increases are calculated as 3% of the monthly annuity payable at the time of the increase.

Summary of Benefit Provisions (continued)

Optional Plan of Contributions and Benefits. During the period through June 30, 2005, an employee may establish optional credit for additional benefits by making additional contributions of 3% of salary. The additional benefit is equal to 1% of final average salary for each year of service for which optional contributions have been paid. The additional benefit shall be included in the calculation of the automatic annual increase and the calculation of the survivor's annuity.

Alternate Annuity for County Officers. An alternate annuity is available for county officers elected on or before January 1, 2008. The amount of this alternate annuity is equal to 3% of final salary for the first 8 years of service, 4% for the next 4 years of service, and 5% thereafter, subject to a maximum of 80% of final salary. The elected county officer is required to contribute an additional 3% of salary to be eligible for the alternate annuity. The alternate survivor's annuity for survivors of elected county officers is 66-2/3% of the amount of the elected county officer's earned retirement annuity on the date of death, subject to a minimum payment of 10% of salary.

Annuities for Members of the Cook County Police Department. In lieu of the regular minimum retirement annuity, a deputy sheriff who is a member of the County Police Department may be entitled to the following annuity:

Upon withdrawal from service after having attained age 50 in service with 20 or more years of service credit as a police officer, the officer shall be entitled to an annuity computed as follows: 50% of final average salary, plus 2% of final average salary for each year of service in excess of 20 years, subject to a maximum of 80% of final average salary.

Surviving Spouse's Annuity — Death in Service

Money Purchase Annuity. The amount of annuity based on the accumulated salary deductions and County contributions for both the employee and the spouse.

Minimum Formula Annuity. A minimum annuity is provided for the eligible surviving spouse of an employee who dies in service with any number of years of service. The amount of such minimum spouse's annuity is equal to 65% of the annuity the employee would have been entitled to as of the date of death, provided the spouse on such date is age 55 or older, or that the employee had 30 or more years of service. If the spouse is under age 55 and the employee had less than 30 years of service, the amount of the spouse's annuity shall be discounted by .5% for each month that the spouse is less than age 55 on the date of the employee's death. The amount of the surviving spouse's annuity shall not be less than 10% of the employee's final average salary as of the date of death.

If the Minimum Formula Annuity is greater than the Money Purchase Annuity, the surviving spouse shall be entitled to receive the Minimum Formula Annuity

Summary of Benefit Provisions (continued)

Surviving Spouse's Annuity — Death after Retirement. The amount of the annuity is the greater of the money purchase annuity or the minimum formula annuity. The surviving spouse of an annuitant who dies on or after July 1, 2002 shall be entitled to an annuity of 65% of the employee's annuity at the time of death if the employee had at least 10 years of service, reduced by .5% per month that the spouse is under age 55 at the time of the employee's death. There is no reduction for age if the employee had at least 30 years of service.

Automatic Annual Increase in Surviving Spouse's Annuity. On the January 1 occurring on or immediately after the first anniversary of the deceased employee's death, the surviving spouse's annuity shall be increased by 3% of the amount of annuity payable at the time of the increase. On each January 1, thereafter, the annuity shall be increased by an additional 3% of the amount of annuity payable at the time of the increase.

Child's Annuity. Annuities are provided for unmarried children of a deceased employee who are under age 18. An adopted child is entitled to the child's annuity if such child was legally adopted at least one year before the child's annuity becomes payable. The child's annuity is payable under the following conditions:

(a) the death of the employee was a duty related death; or (b) if the death is not a duty related death, the employee died while in service and had completed at least four years of service from the date of his or her original entrance in service and at least two years from the latest re-entrance: or (c) if the employee died while in receipt of an annuity, he or she must have withdrawn from service after attainment of age 50.

The amount of the annuity is the greater of 10% of the employee's final salary at the date of death or $140 per month for each child.

Duty Disability Benefits. Duty disability benefits are payable to an employee who becomes disabled as a result of an accidental injury incurred while in the performance of an act of duty. Benefits begin on the first regular and normal work date for which the employee does not receive a salary. The amount of the duty disability benefit is equal to 75% of the employee's salary at the date of injury, reduced by the amount the employee receives from Workers' Compensation. However, if the disability, in any measure has resulted from any physical defect or disease that existed at the time such injury was sustained, the duty disability benefit shall be 50% of salary. The 8.5% (9% for County Police) of salary normally contributed by the employee for pension purposes is contributed on their behalf during the period of approved disability.

If the disability commences prior to age 60, duty disability benefits are payable during disability until the employee attains age 65. If the disability begins after age 60, the benefit is payable during disability for a period of 5 years.

Recipients of duty disability benefits also have a right to receive child's disability benefits of $10 per month on account of each unmarried child less than age 18. Total children's disability benefits shall not exceed 15% of the employee's salary.

Summary of Benefit Provisions (continued)

Ordinary Disability Benefits. Ordinary disability benefits are provided for employees who become disabled as the result of any cause other than injury incurred in the performance of an act of duty. The amount of the benefit is 50% of the employee's annual salary at the time of disability. The 8.5% (9% for County Police) of salary normally contributed by the employee for pension purposes is contributed on their behalf during the period of approved disability.

Ordinary disability benefits are payable after the first 30 days of disability provided the employee is not then in receipt of salary. Ordinary disability benefits are payable until the first of the following shall occur:

a. the disability ceases; or

b. the date that total payments equal the lesser of (1) 1/4 of the total service rendered prior to disability, and (2) five years.

An employee unable to return to work at the expiration of ordinary disability benefit is entitled to an annuity beginning on the date of the employee's withdrawal from service regardless of age on such date.

Death Benefit. Upon the death of an active or retired employee, a death benefit of $1,000 is payable to the employee's designated beneficiary or to the employee's estate if no beneficiary has been designated.

Refund to Employee upon Withdrawal From Service. Upon withdrawal from service, an employee under the age of 55, or anyone with less than 10 years of service is eligible for a refund. The employee is entitled to a refund of the amount accumulated to his or her credit for age and service annuity and the survivor's annuity together with the total amount contributed for the automatic annual increase, without interest. Upon receipt of such refund, the employee forfeits all rights to benefits from the Fund.

Election of Refund in Lieu of Annuity. If an employee's annuity or spouse's annuity is less than $150.00 per month, such employee or spouse annuitant may elect a refund of the employee's accumulated contributions in lieu of a monthly annuity.

Refund For Surviving Spouse's Annuity. If an employee is unmarried at the time of retirement, all contributions for surviving spouse's annuity will be refunded with interest at the rate of 3% per year, compounded annually.

Refund of Remaining Amounts. In the event that the total amount accumulated to the account of an employee from employee contributions for annuity purposes has not been paid to the employee and surviving spouse as a retirement or surviving spouse's annuity before the death of the survivor(s) of the employee, a refund of any excess amount shall be paid to the children of the employee, in equal parts, or if there are no children, to the beneficiaries of the employee or the administrator of the estate.

Employee Contributions. Employees contribute through salary deductions 8.5% (9% for County Police) of salary to the Fund, 6.5% (7% for County Police) being for the retirement annuity. 1.5% being for the surviving spouse's annuity, and .5% being for the automatic increase in retirement annuity.

Employer Contributions. The County levies a tax annually equal to the total amount of contributions made by employees in the calendar year 2 years prior to the year of the levy, multiplied by 1.54.

Summary of Benefit Provisions (continued)

Employer Pick-up of Employee Contributions. Since April 15, 1982, regular employee contributions have been designated for federal income tax purposes as being made by the employer. The employee's W-2 salary is therefore reduced by the amount of contribution. For pension purposes, the salary remains unchanged. For purposes of benefits, refunds, and financing, these contributions are treated as employee contributions.

Persons Who First Become Participants On or After January 1, 2011

The following changes to the aforementioned provisions apply to persons who first become participants on or after January 1, 2011:

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 2011, the annual salary is limited to the Social Security wage base of $106,800. Limitations for future years shall automatically be increased by the lesser of 3% or one-half of percentage change in the Consumer Price Index-U for the 12 months ending in September.
3. A participant is eligible to retire with unreduced benefits at 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 one-half of 1% for each month that his or her age is under 67.
4. The initial survivor's annuity is equal to 66-2/3% 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 for the 12 months ending in September, based on the originally granted survivor's annuity.
5. Automatic annual increases in the retirement annuity then being paid 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.
6. Refund upon withdrawal from service. Upon withdrawal from service, an employee who withdraws from service before age 62 regardless of length of service or withdraws with less than 10 years of service regardless of age is entitled to a refund of total contributions made by the employee without interest.

Description of Actuarial Methods and Valuation Procedures

Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the **Entry Age Actuarial Cost Method** of funding.

Sometimes called a “funding method,” this is a particular technique used by actuaries for establishing the amount and incidence of the annual actuarial cost of pension Fund benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily the annual contribution to the Fund is comprised of (1) the normal cost and (2) an amortization payment on the unfunded actuarial accrued liability.

Under the Entry Age Actuarial Cost Method, the **Normal Cost** is computed as the level percentage of pay which, if paid from the earliest time each Member would have been eligible to join the Fund if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the Fund.

Actuarial Cost Method (continued)

The Normal Cost for the Fund is determined by summing individual results for each active Member and determining an average normal cost rate by dividing the summed individual normal costs by the total payroll of Members before assumed retirement age.

The **Actuarial Accrued Liability** under this method at any point in time is the theoretical amount of the fund that would have accumulated had annual contributions equal to the Normal Cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date).

The **Unfunded Actuarial Accrued Liability** is the excess of the Actuarial Accrued Liability over the Actuarial Value of Fund Assets actually on hand on the valuation date. The Unfunded Actuarial Accrued Liability is amortized as a level percent of payroll over an open 30-year period.

Under this method experience gains or losses, i.e. decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the Unfunded Actuarial Accrued Liability.

Asset Valuation Method

The actuarial value of assets is based on a five-year smoothing method and is determined by spreading the effect of each year's investment return in excess of or below the expected return. The Fair Value of assets at the valuation date is reduced by the sum of the following:

(i) 80% of the return to be spread during the first year preceding the valuation date,

(ii) 60% of the return to be spread during the second year preceding the valuation date,

(iii) 40% of the return to be spread during the third year preceding the valuation date, and

(iv) 20% of the return to be spread during the fourth year preceding the valuation date.

The return to be spread is the difference between (1) the actual investment return on Fair Value and (2) the expected return on Fair Value.

Valuation Procedures

No actuarial liability is included for members who terminated non-vested prior to the valuation date, except those due a refund of contributions.

Annual increases in salary were limited to the dollar amount defined under Internal Revenue Code Section 401(a)(17) for affected members.

Description of Actuarial Methods and Valuation Procedures (continued)

Summary of Actuarial Assumptions

The actuarial assumptions used for the December 31, 2020 actuarial valuation are summarized below.

The mortality rate, termination rate, retirement rate, and salary assumptions are based on an experience analysis of the Fund over the period 2013 through 2016. These assumptions were adopted by the Board as of December 31, 2017, based on the recommendation from the actuary.

Mortality Rates. The RP-2014 Blue Collar table with the following adjustments:

Pre-commencement: adjust all rates by 75%

Post-commencement: adjust rates as follows:

Age	Adjustment Factor
Less than 50	No adjustment
50 - 64	150%
65-69	130%
70-79	110%
80 and over	No adjustment

Fully generational mortality improvement projection assumptions are applied to the above table from base year 2006 using the Buck Modified MP-2017 projection scale. The substantive difference between the Buck scale and that published by the SOA is that the Buck scale reaches an ultimate improvement rate of 0.75% versus the SOA's scale which reaches an ultimate improvement rate of 1.0%.

Termination Rates. Termination rates based on the recent experience of the Fund were used. The following is a sample of the termination rates used:

	Age at Entry							
	Male				Female			
Attained Age	22	27	32	37	22	27	32	37
22	.330				.321			
27	.075	.174			.122	.161		
32	.028	.117	.140		.030	.128	.158	
37	.028	.037	.093	.200	.030	.033	.096	.200
42	.028	.037	.034	.070	.030	.033	.034	.056
47	.028	.037	.034	.025	.030	.033	.034	.026

Summary of Actuarial Assumptions (continued)

Retirement Rates. For persons who became participants prior to January 1, 2011, rates of retirement for each age from 50 to 80 based on the recent experience of the Fund. The following are samples of the rates of retirement used:

	Male		Female	
Age	Less than 30 years of service	30 or more years of service	Less than 30 years of service	30 or more years of service
<50	0.0%	0.0%	0.0%	0.0%
50	2.5%	40.0%	2.0%	38.0%
51	2.5%	40.0%	2.0%	30.0%
52-53	2.5%	35.0%	2.0%	30.0%
54	4.0%	30.0%	3.0%	30.0%
55-56	4.0%	30.0%	4.5%	30.0%
57	6.0%	30.0%	4.5%	30.0%
58	7.0%	30.0%	5.0%	30.0%
59	12.5%	32.0%	10.0%	35.0%
60	15.0%	25.0%	15.0%	35.0%
61	12.5%	18.0%	12.0%	30.0%
62	12.5%	24.0%	12.0%	30.0%
63	12.5%	30.0%	13.0%	30.0%
64	15.0%	22.5%	16.0%	30.0%
65	20.0%	24.0%	22.0%	35.0%
66	20.0%	30.0%	20.0%	30.0%
67-68	20.0%	24.0%	20.0%	30.0%
69	20.0%	24.0%	20.0%	30.0%
70	25.0%	35.0%	24.0%	35.0%
71	28.0%	35.0%	20.0%	24.0%
72	25.0%	35.0%	28.0%	28.0%
73	30.0%	60.0%	24.0%	25.0%
74-75	30.0%	75.0%	25.0%	30.0%
76-77	40.0%	75.0%	40.0%	40.0%
78-79	50.0%	75.0%	50.0%	50.0%
80+	100.0%	100.0%	100.0%	100.0%

Summary of Actuarial Assumptions (continued)

Retirement Rates. For persons who became or will become participants on or after January 1, 2011, rates of retirement for each age from 62 to 75 were used. The following are samples of the rates of retirement that were used:

	Rates of Retirement	
Age	Males	Females
62	.400	.350
64	.225	.150
67	.400	.350
70	.450	.200
75	1.000	1.000

Retirement rates. For Deputy Sheriffs who are members of the Cook County Police Department with 20 or more years of service at retirement.

Age	Rate
50	10.0%
51	10.0%
52	10.0%
53	10.0%
54	10.0%
55	10.0%
56	15.0%
57	25.0%
58	10.0%
59	10.0%
60	35.0%
61	35.0%
62	35.0%
63	35.0%
64	35.0%
65	100.0%

Interest Rate. 7.25% per year, compounded annually.

Inflation Rate. 2.75% per year, compounded annually.

Summary of Actuarial Assumptions (continued)

Salary Rate (net of inflation):

Age	Rate
20	5.25%
25	4.85%
30	4.25%
35	2.75%
40	1.50%
45+	0.75%

Loading for Reciprocal Benefits. Costs and liabilities of active employees were loaded by 1% for reciprocal annuities where the County is the last employer. It was assumed that 50% of inactive members with one or more year of service would receive a reciprocal annuity where the County is not the last employer. These reciprocal annuities were valued as of the member's retirement date as 10 times an inactive member's accumulated contributions.

Marital Status. 70% of participants were assumed to be married.

Spouse's Age. The spouse of a male employee was assumed to be four years younger than the employee. The spouse of a female employee was assumed to be four years older than the age of the employee.

Inactives. For inactives with 10 or more years of service benefits were estimated based on service and pay and valued as deferred to 55 annuities.

Glossary of Terms

Actuarial Accrued Liability	Total accumulated cost to fund pension benefits arising from service in all prior years.
Actuarial Cost Method	Technique used to assign or allocate, in a systematic and consistent manner, the expected cost of a pension Fund for a group of Fund members to the years of service that give rise to that cost.
Actuarial Present Value of Future Benefits	Amount which, together with future interest, is expected to be sufficient to pay all future benefits.
Actuarial Valuation	Study of probable amounts of future pension benefits and the necessary amount of contributions to fund those benefits.
Actuary	Person who performs mathematical calculations pertaining to pension and insurance benefits based on specific procedures and assumptions.
Annual Determined Contribution	Disclosure measure of annual pension cost.
GASB 67	Governmental Accounting Standards Board Statement Number 67
Maturity Ratio	The ratio of the actuarial accrued liability for members who are no longer active to the total actuarial accrued liability. A ratio of over 50% indicates a mature Fund. The higher the maturity ratio, the more volatile the contribution rate will be from year to year given actuarial gains and losses.
Normal Cost	That portion of the actuarial present value of benefits assigned to a particular year in respect to an individual participant or the Fund as a whole.
Vested Benefits	Benefits which are unconditionally guaranteed regardless of employment status.

June 3, 2021

Board of Trustees
County Employees' and Officers' Annuity and Benefit Fund of Cook County
Chicago, Illinois

RE: December 31, 2020 Actuarial Valuation

Ladies and Gentlemen:

Presented in this report is information to assist the County Employees' and Officers' Annuity and Benefit Fund of Cook County ("CEABF" or "the Fund" or "the Plan") in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statements No. 74 and 75 for the December 31, 2020 Measurement Date. The calculations in this report have been made on a basis that is consistent with our understanding of this accounting standard (GASB 74 and 75). Please note that the discount rate used to determine the Total OPEB Liability (TOL) changed from 2.75% at the Prior Measurement Date to 2.12% at the current Measurement Date.

The information is based on an actuarial valuation performed by Cavanaugh Macdonald (CMC) as of December 31, 2020, with plan asset information provided by CEABF for its fiscal year ended December 31, 2020. CMC performs the actuarial valuation annually.

The valuation was based upon data, furnished by CEABF staff, concerning active, inactive and retired members along with pertinent financial information. This information was reviewed for completeness and internal consistency but was not audited by us. The valuation results depend on the integrity of the data. If any of the information is inaccurate or incomplete our results may be different, and our calculations may need to be revised. Please see the actuarial valuation for additional details on the funding requirements for CEABF including actuarial assumptions and methods and the funding policy.

To the best of our knowledge, the information contained in this report is complete and accurate. The calculations were performed by qualified actuaries according to generally accepted actuarial principles and practices, as well as in conformity with Actuarial Standards of Practice issued by the Actuarial Standards Board. The calculations are based on the current provisions of CEABF, and on actuarial assumptions that are internally consistent and individually reasonable based on the actual experience of CEABF. In addition, the calculations were completed in compliance with applicable law and, in our opinion, meet the requirements of GASB 74 and 75.

These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 74 and 75 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

In order to prepare the results in this report we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions prior to the next experience study.

The actuary prepared, or assisted in preparing, the following supporting information for the actuarial valuation:

- Changes in the GASB 74/75 Total OPEB Liability (TOL)
- GASB 74 Components of the Net OPEB Liability
- GASB 74 Schedule of Employer Contributions
- GASB 74 Schedule of Changes in Net OPEB Liability
- GASB 74 Schedule of Net OPEB Liability
- GASB 74 Sensitivity of Net OPEB Liability
- Membership Data
- Solvency Test
- Summary of Substantive Plan Provisions
- Summary of Assumptions and Methods
- Description of Actuarial Methods

On May 21, 2020, the Levin case was decided in the plaintiff's favor. As of the date of the report, no new people have enrolled in FPEABF retiree health care plan as a result of the Levin case while a minimum number have enrolled in CEABF. Given the limited amount of elections, we have not included additional cost impact of the Levin case beyond those in submitted for the valuation.

We, Larry F. Langer, ASA, Wendy T. Ludbrook, FSA, and Bradley R. Wild, ASA are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in this report or to provide explanations or further details as may be appropriate.

Respectfully submitted

Wendy Ludbrook

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

Wendy T. Ludbroook, FSA, EA, FCA, MAAA
Consulting Actuary

Bradley R. Wild, ASA, EA, FCA, MAAA
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Ryan Gundersen
Senior Consultant

Overview

The County Employees' and Officers' Annuity and Benefit Fund of Cook County ("CEABF" or "the Fund" or "the Plan") offers health benefits to retired employees of Cook County and their eligible dependents. This report presents the results of the actuarial valuation of the Fund benefits as of the valuation date of December 31, 2020.

Purpose

This report had been prepared at the request of the Fund for use in financial reporting of CEABF under GASB 74 and GASB 75. It may not be appropriate for other purposes, such as analyzing proposed design alternatives, funding, pricing or option evaluation. Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies or inapplicability of the report for that purpose. No one may make any representations or warranties based on any statements or conclusions contained in this report without the written consent of Cavanaugh Macdonald.

Membership

	Year Ended December 31,	
Summary of Membership Data	**2020**	**2019**
Annuitants Currently Receiving Benefits	9,198	9,210
Covered Spouses of Annuitants Currently Receiving Benefits	2,707	2,743
Separated Employees Entitled To Benefits But Not Yet Receiving Them	1,708	1,510
Active Employees	19,102	19,551
Total Number of Members	32,715	33,014

Changes in Plan Provisions

The following changes in benefits and other plan provisions in the Retiree Health Insurance actuarial valuation have been made since the last valuation performed as of December 31, 2019:

- The 2021 subsidy for member health benefits was changed from 34% to 33% for annuitants in the Choice Plus Plan Medicare.
- The 2021 subsidy for member health benefits was changed from 48% to 45% for annuitants in the Choice Plan non-Medicare, and from 43% to 42% for annuitants in the Choice Plus Plan non-Medicare.
- The 2021 subsidy for survivor health benefits was changed from 48% to 38% for survivors in the Choice Plan Medicare, and from 44% to 38% for survivors in the Choice Plus Plan Medicare.
- The 2021 subsidy for survivor health benefits was changed from 58% to 52% for survivors in the Choice Plan non-Medicare, and from 53% to 48% for survivors in the Choice Plus Plan non-Medicare.
- The following plan changes became effective as of January 1, 2021:
    - Prior authorization/Medical Necessity required for some care received by non- Medicare members.
    - Choice Plus deductibles were increased to $500 Individual/$1,000 Family for In- Network and $1,000 Individual/$2,000 Family for Out-of-Network.
    - Prescription copays for 30-day supply increased to $45 for Preferred Brand and $70 for non-Preferred Brand.
    - Prescription copays for 90-day supply increased to $90 for Preferred Brand and $140 for non-Preferred Brand for CVS or Caremark Mail Order and $135 for Preferred Brand and $210 for non-Preferred Brand for non-CVS Pharmacy.

Changes in Actuarial Assumptions, Methods, or Procedures

The following changes in the actuarial assumptions or valuation procedures in the Retiree Health Insurance actuarial valuation have been made since the last valuation performed as of December 31, 2019:

- The per capita plan costs were updated to reflect the most recent year of claims experience, drug rebates and Employer Group Waiver Plan (EGWP) subsidies. Additionally, working premium rates were updated for 2021.
- The discount rate used to measure the Total OPEB Liability was changed from 2.75% as of the December 31, 2019 valuation to 2.12% as of the December 31, 2020 valuation, based on the Municipal Bond 20-year Index Rate as of December 31, 2020. The 2.12% rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2020. The rate used for this purpose is the monthly average of the Bond Buyers General Obligation 20-year Municipal Bond Index Rate (formerly published monthly by the Board of Governors of the Federal Reserve System).

Changes in the GASB 74/75 Total OPEB Liability (TOL)

	TOL	% Change
December 31, 2019	**$ 1,900,989,370**	
Expected Growth Due to Passage of Time	76,416,629	4.0%
Demographic Experience	(53,696,311)	-2.8%
Updated Per Capita Health Plan Experience	37,868,544	2.0%
Change in Plan Provisions	(65,649,811)	-3.5%
Change in Discount Rate	209,226,099	11.0%
Total Change in TOL	**$ 204,165,150**	**10.7%**
December 31, 2020	**$ 2,105,154,520**	**10.7%**

GASB 74 Components of the Net OPEB Liability

Valuation Date (VD):	December 31, 2020
Prior Measurement Date:	December 31, 2019
Measurement Date (MD):	December 31, 2020
Membership Data:	
Retirees and Beneficiaries	9,198
Inactive Members Eligible for Allowances	1,708
Active Employees	19,102
Total	30,008
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	7.25%
Municipal Bond Index Rate at Prior Measurement Date	2.75%
Municipal Bond Index Rate at Measurement Date	2.12%
Year in which Fiduciary Net Position is Projected to be Depleted	2020
Single Equivalent Interest Rate at Prior Measurement Date	2.75%
Single Equivalent Interest Rate at Measurement Date	2.12%
Net OPEB Liability:	
Total OPEB Liability (TOL)	$2,105,154,520
Fiduciary Net Position (FNP)	—
Net OPEB Liability (NOL = TOL – FNP)	$2,105,154,520
FNP as a percentage of TOL	0.00%

Fiscal Year Ending December 31, 2020

Total OPEB Liability	$2,105,154,520
Fiduciary Net Position	—
Net OPEB Liability	$2,105,154,520
Ratio of Fiduciary Net Position to Total OPEB Liability	0.00%

GASB 74 Schedule of Employer Contributions

	2020	2019	2018	2017
Actuarially determined employer contribution	$ 172,996,709	$ 157,705,345	$ 133,228,086	$ 187,348,423
Actual employer contributions	43,430,445	38,237,172	38,310,969	47,454,621
Annual contribution deficiency (excess)	$ 129,566,264	$ 119,468,173	$ 94,917,117	$ 139,893,802
Covered employee payroll	$ 1,583,198,35	$1,603,347,918	$1,576,658,158	$1,602,986,483
Actual contributions as a percentage of covered payroll	2.74%	2.38%	2.43%	2.96%

GASB 74 Schedule of Changes in Net OPEB Liability

	2020	2019	2018	2017
Total OPEB Liability				
Service Cost	$ 66,338,671	$ 46,682,354	$ 40,557,095	$82,344,830
Interest	53,508,403	64,502,784	68,565,681	84,911,522
Benefit changes	(65,649,811)	(81,634,771)	(292,725,744)	(79,293,990)
Difference between expected and actual experience	(15,827,767)	(9,467,033)	(92,253,919)	(55,814,160)
Changes of assumptions	209,226,099	385,089,639	(300,028,016)	(66,330,809)
Benefit payments	(43,430,445)	(38,237,172)	(38,310,969)	(47,454,621)
Net change in Total OPEB Liability	$ 204,165,150	$ 366,935,801	$ (614,195,872)	$ (81,637,228)
Total OPEB Liability – beginning	$ 1,900,989,370	$ 1,534,053,569	$ 2,148,249,441	$ 2,229,886,669
Total OPEB Liability – ending (a)	$ 2,105,154,520	$ 1,900,989,370	$ 1,534,053,569	$ 2,148,249,441
Plan Fiduciary Net Position				
Employer contributions	$ 43,430,445	$ 38,237,172	$ 38,310,969	$ 47,454,621
Net investment income	—	—	—	—
Net Benefit payments	(43,430,445)	(38,237,172)	(38,310,969)	(47,454,621)
Administrative expense	—	—	—	—
Other	—	—	—	—
Net change in Plan Fiduciary Net Position	$ —	$ —	$ —	$ —
Plan Fiduciary Net Position – beginning	$ —	$ —	$ —	$ —
Plan Fiduciary Net Position – ending (b)	$ —	$ —	$ —	$ —
Net OPEB Liability – ending (a) – (b)	$ 2,105,154,520	$ 1,900,989,370	$ 1,534,053,569	$ 2,148,249,441

GASB 74 Schedule of the Net OPEB Liability

	2020	2019	2018	2017
Total OPEB Liability	$2,105,154,520	$1,900,989,370	$1,534,053,569	$2,148,249,441
Plan Fiduciary Net Position	—	—	—	—
Net OPEB Liability	$2,105,154,520	$1,900,989,370	$1,534,053,569	$2,148,249,441
Ratio of Plan Fiduciary Net Position to Total OPEB Liability	0.00%	0.00%	0.00%	0.00%
Covered employee payroll	$1,583,198,305	$1,603,347,918	$1,576,658,158	$1,602,986,483
Net OPEB Liability as a percentage of covered employee payroll	132.97%	118.56%	97.30%	134.02%

GASB 74 Sensitivity of the Net OPEB Liability

Sensitivity of the Net OPEB Liability to changes in the discount rate. The following presents the Net OPEB Liability as of December 31, 2020, calculated using the discount rate of 2.12%, as well as what the Plan's Net OPEB Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (1.12%) or 1-percentage-point higher (3.12%) than the current rate:

	1% Decrease (1.12%)	Current Discount Rate (2.12%)	1% Increase (3.12%)
Total OPEB Liability	$ 2,508,946,266	$ 2,105,154,520	$ 1,786,550,734
Fiduciary Net Position	—	—	—
Net OPEB Liability	$ 2,508,946,266	$ 2,105,154,520	$ 1,786,550,734

Sensitivity of the Net OPEB Liability to changes in the healthcare cost trend rates. The following presents the Net OPEB Liability as of December 31, 2020, calculated using the healthcare cost trend rates as summarized in this report, as well as what the Plan's Net OPEB Liability would be if it were calculated using trend rates that are 1-percentage-point lower or 1- percentage-point higher than the current healthcare cost trend rates:

	1% Decrease	Current Trend Rate	1% Increase
Total OPEB Liability	$ 1,748,461,101	$ 2,105,154,520	$ 2,574,177,221
Fiduciary Net Position	—	—	—
Net OPEB Liability	$ 1,748,461,101	$ 2,105,154,520	$ 2,574,177,221

Summary of Substantive Plan Provisions

Eligibility. Tier 1 retirement (hired before January 1, 2011)

- Age 50 and 10 years of service

Tier 2 retirement (hired on or after January 1, 2011)

- Age 62 and 10 years of service

All active employee members who separate with 10 or more years of service can receive postretirement health benefits under the Plan upon receipt of annuity benefits. In some cases employees that retire with less than 10 years of service with Cook County may be eligible for Health Benefits due to reciprocity or if they are Tier 1 and qualify for Money Purchase annuity benefits.

Surviving dependents of actively employed members and surviving dependents of annuitants are eligible for postretirement health benefits under the Plan upon receipt of annuity benefits.

Annuitants may cover their spouses and dependent children under the age of 26 and all disabled children (no age limitation).

Effective January 1, 2019, all future plan participants who are ineligible for free Medicare Part A must purchase Medicare Part A and Part B in order to receive coverage under the CEABF health plan. CEABF will provide a reduced monthly premium for annuitants and spouses who are ineligible for premium free Medicare Part A.

Medical Plans.

Non-Medicare retirees can choose from:

- United Healthcare Choice PPO
- United Healthcare Choice Plus PPO

Medicare eligible retirees can choose from:

- United Healthcare Choice PPO
- United Healthcare Choice Plus PPO

When Medicare is primary, the medical benefits coordinate by reducing the plan allowed charge amount by Medicare's payment, and then subsequently applying any applicable plan copays, coinsurances or deductibles to the remainder. A retail and mail pharmacy benefit through CVS/Caremark is included with the election of any medical plan. For Medicare primary participants, prescriptions are provided via an Employer Group Waiver Plan, with the same copays as the commercial prescription plan.

Summary of Substantive Plan Provisions (continued)

Contributions.

CEABF pays the following percentage subsidies of the total premium, including the cost of family coverage:

	Participant		Fund	
	Choice PPO	Choice Plus PPO	Choice PPO	Choice Plus PPO
Retiree Annuitant w/o Medicare	55%	58%	45%	42%
Retiree Annuitant with Medicare	62%	67%	38%	33%
Survivor Annuitant w/o Medicare	48%	52%	52%	48%
Survivor Annuitant with Medicare	62%	62%	38%	38%

The following are the annual working rates effective January 1, 2021. These rates represent an estimated cost of self-insured coverage and include administrative expenses.

	Choice PPO	Choice Plus PPO
Single w/o Medicare	$ 17,062	$ 23,648
Two w/o Medicare	$ 34,124	$ 47,297
Single with Medicare	$ 4,994	$ 4,191
Two with Medicare	$ 9,987	$ 8,382

Summary of Assumptions and Methods

The actuarial assumptions used for the December 31, 2020 actuarial valuation are summarized below. The mortality rates, termination rates, retirement rates, salary, inflation, participation, and Medicare primary assumptions are based on an experience analysis of CEABF, over the period 2013 through 2016. These assumptions were adopted by the Board on April 5, 2018. Per capita cost and medical trend rate assumptions are revisited annually. The next experience analysis is scheduled to occur after the December 31, 2020 actuarial valuation, with expected implementation of updated assumptions for the December 31, 2021 actuarial valuation. This analysis will cover the four-year period from 2017 through 2020.

Valuation Date. December 31, 2020

Measurement Date. December 31, 2020

Discount Rate. 2.12% at December 31, 2020 (Municipal Bond Index Rate) 2.75% at December 31, 2019 (Municipal Bond Index Rate)

Benefit payments are funded on a pay-as-you-go basis. The discount rate is the single equivalent rate which results in the same present value as discounting future benefit payments made from assets at the long term expected rate of return and discounting future benefit payments funded on a pay-as-you-go basis on the Municipal Bond 20-year Index Rate.

Mortality Rates. The RP-2014 Blue Collar table with the following adjustments:
Pre-commencement: adjust all rates by 75%

Post-commencement: adjust rates as follows:

Age	Adjustment Factor
Less than 50	No adjustment
50 - 64	150%
65-69	130%
70-79	110%
80 and over	No adjustment

Fully generational mortality improvement projection assumptions are applied to the above table from base year 2006 using the Buck Modified MP-2017 projection scale. The substantive difference between the Buck scale and that published by the SOA is that the Buck scale reaches an ultimate improvement rate of 0.75% versus the SOA's scale which reaches an ultimate improvement rate of 1.0%.

Summary of Assumptions and Methods (continued)

Termination Rates. Termination rates based on the recent experience of the Fund were used. The following is a sample of the termination rates used:

	Age at Entry							
	Male				Female			
Attained Age	22	27	32	37	22	27	32	37
22	.330				.321			
27	.075	.174			.122	.161		
32	.028	.117	.140		.030	.128	.158	
37	.028	.037	.093	.200	.030	.033	.096	.200
42	.028	.037	.034	.070	.030	.033	.034	.056
47	.028	.037	.034	.025	.030	.033	.034	.026

Summary of Assumptions and Methods (continued)

Retirement Rates. For persons who became participants prior to January 1, 2011, rates of retirement for each age from 50 to 80 based on the recent experience of the Fund. The following are samples of the rates of retirement used:

	Male		Female	
Age	Less than 30 years of service	30 or more years of service	Less than 30 years of service	30 or more years of service
<50	0.0%	0.0%	0.0%	0.0%
50	2.5%	40.0%	2.0%	38.0%
51	2.5%	40.0%	2.0%	30.0%
52-53	2.5%	35.0%	2.0%	30.0%
54	4.0%	30.0%	3.0%	30.0%
55-56	4.0%	30.0%	4.5%	30.0%
57	6.0%	30.0%	4.5%	30.0%
58	7.0%	30.0%	5.0%	30.0%
59	12.5%	32.0%	10.0%	35.0%
60	15.0%	25.0%	15.0%	35.0%
61	12.5%	18.0%	12.0%	30.0%
62	12.5%	24.0%	12.0%	30.0%
63	12.5%	30.0%	13.0%	30.0%
64	15.0%	22.5%	16.0%	30.0%
65	20.0%	24.0%	22.0%	35.0%
66	20.0%	30.0%	20.0%	30.0%
67-68	20.0%	24.0%	20.0%	30.0%
69	20.0%	24.0%	20.0%	30.0%
70	25.0%	35.0%	24.0%	35.0%
71	28.0%	35.0%	20.0%	24.0%
72	25.0%	35.0%	28.0%	28.0%
73	30.0%	60.0%	24.0%	25.0%
74-75	30.0%	75.0%	25.0%	30.0%
76-77	40.0%	75.0%	40.0%	40.0%
78-79	50.0%	75.0%	50.0%	50.0%
80+	100.0%	100.0%	100.0%	100.0%

Summary of Assumptions and Methods (continued)

Retirement Rates. For persons who became or will become participants on or after January 1, 2011, rates of retirement for each age from 62 to 75 were used. The following are samples of the rates of retirement that were used:

	Rates of Retirement	
Age	**Males**	**Females**
62	.400	.350
64	.225	.150
67	.400	.350
70	.450	.200
75	1.000	1.000

Retirement Rates. For Deputy Sheriffs who are members of the Cook County Police Department with 20 or more years of service at retirement.

Age	Rate
50	10.0%
51	10.0%
52	10.0%
53	10.0%
54	10.0%
55	10.0%
56	15.0%
57	25.0%
58	10.0%
59	10.0%
60	35.0%
61	35.0%
62	35.0%
63	35.0%
64	35.0%
65	100.0%

Inflation Rate. 2.75% per year, compounded annually.

Summary of Assumptions and Methods (continued)

Salary Rate (net of inflation):

Age	Rate
20	5.25%
25	4.85%
30	4.25%
35	2.75%
40	1.50%
45+	0.75%

Disability Rates. Included in termination and retirement rates.

Anticipated Plan Participation. 65% of eligible employees are assumed to elect retiree medical benefits. Of those who elect retiree medical benefits, 94% are assumed to be eligible for free Medicare Part A. For those assumed to be ineligible for free Medicare Part A, a reduced premium will be provided by CEABF.

40% of vested terminated employees are assumed to elect retiree medical benefits upon retirement, and are assumed to retire at age 61.

Based on recent experience, future annuitants are assumed to elect from among the available plans as follows:

% Who Elect	Choice PPO	Choice Plus PPO
Pre-Medicare	95%	5%
Post-Medicare	77%	23%

Current annuitants who elect coverage are assumed to remain in coverage. Current annuitants who have waived or deferred coverage are not assumed to participate in the future.

Dependent Coverage.

35% of future annuitants are assumed to cover a dependent. 35% of surviving dependents are assumed to elect coverage upon the death of an actively employed member and are assumed to commence benefits when the actively employed member would have reached age 61. Males are assumed to be 4 years older than females. Actual ages were used for dependents of current annuitants.

Medicare Coordination.

Medicare is assumed to remain the primary payer for current and future retirees and spouses who are at least age 65 and who are currently on Medicare. Medicare is assumed to become primary for 100% of retirees and spouses who retired before January 1, 2019 and who are not yet age 65, when they attain that age. However, five percent of this group is assumed to be ineligible for free Medicare Part A and a reduced premium will be provided by CEABF. For all other retirees and spouses, Medicare is assumed to be the primary payer at the time they reach age 65.

Summary of Assumptions and Methods (continued)

Per Capita Health Plan Costs.

Estimated net annual per capita incurred claim costs per covered adult for fiscal year 2021 at age 65, reflecting administrative expenses, drug rebates and EGWP subsidies.

	Choice PPO	Choice Plus PPO
Not Medicare Eligible	$19,819	$30,247
Medicare Eligible	$4,615	($4,295)

Per capita medical costs were developed using claims, enrollment, drug rebates and EGWP subsidies for the period from January 1, 2020 through December 31, 2020 provided by the Fund. The resulting costs were adjusted for age morbidity.

The valuation relies on the accuracy of the rate calculations. We understand that the rates represent medical and prescription drug benefit costs only for annuitants under the Fund.

Age-based Morbidity.

Per capita costs are adjusted to reflect expected cost differences due to age and gender. The morbidity factors for pre-Medicare morbidity were developed from “Health Care Costs—From Birth to Death” sponsored by the Society of Actuaries and prepared by Dale H. Yamamoto (May 2013). Table 4 from Mr. Yamamoto’s study formed the basis of Medicare morbidity factors that are gender distinct and assumed a cost allocation of 60% for pharmacy, 20% for inpatient, 10% for outpatient, and 10% for professional services. Adjustments were made to Table 4 factors for inpatient costs at age 70 and below to smooth out what appears to be a spike in utilization for Medicare retirees gaining healthcare for the first time through Medicare. While such retirees were included in the study, their specific experience is not applicable for a valuation of an employer retiree medical plan where participants had group active coverage before retirement. Morbidity factors at sample ages are shown below:

Age	Male	Female
50	0.4612	0.5736
55	0.6085	0.6667
60	0.7829	0.7791
65	1.0000	0.9438
70	1.1873	1.1094
75	1.2752	1.2009
80	1.3381	1.2697
85	1.3479	1.3171
90	1.3235	1.3303

Summary of Assumptions and Methods (continued)

Health Care Cost Trend Rates.

Health care cost trend rates apply to expected claims, premiums and retiree contributions:

Year	Pre- Medicare	Post- Medicare
2021	7.00%	5.50%
2022	6.75%	5.25%
2023	6.50%	5.00%
2024	6.25%	4.75%
2025	6.00%	4.75%
2026	5.75%	4.75%
2027	5.50%	4.75%
2028	5.25%	4.75%
2029	5.00%	4.75%
2030+	4.75%	4.75%

Census Data.

The active, deferred vested and retiree census were provided by the Fund.

Actuarial Cost Method.

The entry age actuarial cost as a percentage of earnings was used.

Amortization Method.

30 years open, level dollar.

Assets.

The valuation assumes CEABF or the County has not set aside any assets to prefund its retiree medical liabilities.

Retiree Drug Subsidy and Employer Group Waiver Plan.

CEABF will no longer be receiving the Retiree Drug Subsidy due to their switch to an EGWP plan effective January 1, 2017. Per capita claims costs for fiscal year 2021 include approximately 25% savings due to drug rebates and EGWP subsidies.

IBNR.

The calculations do not include any explicit amount for incurred but not reported claims (IBNR).

Miscellaneous.

The valuation was prepared on an on-going plan basis. This assumption does not imply that an obligation to continue the plan actually exists.

Summary of Assumptions and Methods (continued)

Considerations of the Patient Protection and Affordable Care Act (PPACA)

Summary of Effects of Selected Provisions:

Expansion of Child Coverage to Age 26. The impact of covering retiree children to age 26 is assumed to be reflected in the working rates provided and in the claims experience.

Medicare Part D Retiree Drug Subsidy. CEABF will no longer be receiving the Retiree Drug Subsidy due to their switch to an EGWP plan effective January 1, 2017. Per capita claims costs for fiscal year 2021 include approximately 25% savings due to drug rebates and EGWP subsidies.

Affordable Care Act. The impact of the Affordable Care Act (ACA) was addressed in this valuation. Review of the information currently available did not identify any specific provisions of the ACA that are anticipated to significantly impact results other than plan design features and fees currently mandated by the ACA and incorporated in the plan designs, which are included in the current baseline claims costs. Continued monitoring of the ACA's impact on the Plan's liability will be required.

Benefits Not Valued. On May 21, 2020, the Levin case was decided in the plaintiff's favor. As of the date of the report, no new people have enrolled in FPEABF retiree health care plan as a result of the Levin case while a minimum number have enrolled in CEABF. Given the limited amount of elections, we have not included additional cost impact of the Levin case beyond those in submitted for the valuation.

Description of Actuarial Methods

Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the **Entry Age Actuarial Cost Method** of funding.

Sometimes called a "funding method," this is a particular technique used by actuaries for establishing the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily the annual contribution to the plan is comprised of (1) the normal cost and (2) an amortization payment on the unfunded actuarial accrued liability.

Under the Entry Age Actuarial Cost Method, the **Normal Cost** is computed as the level percentage of pay which, if paid from the earliest time each Member would have been eligible to join the Plan if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the Plan.

The **Actuarial Accrued Liability** under this method at any point in time is the theoretical amount of funding that would have accumulated had annual contributions equal to the Normal Cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date).

The **Unfunded Actuarial Accrued Liability** is the excess of the Actuarial Accrued Liability over the Actuarial Value of Plan Assets on hand on the valuation date. The Unfunded Actuarial Accrued Liability is amortized as a level dollar amount over an open 30-year period.

Under this method experience gains or losses, i.e., decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the Unfunded Actuarial Accrued Liability.

Glossary of Terms

Actuarially determined contribution	A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Actuarial present value of projected benefit payments	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial valuation	The determination, as of a point in time (the actuarial valuation date), of the service cost, total OPEB liability, and related actuarial present value of projected benefit payments for OPEB performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial valuation date	The date as of which an actuarial valuation is performed.
Ad hoc postemployment benefit changes	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Automatic hoc postemployment benefit changes	Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority.
Covered-employee payroll	The payroll for employees that are provided with OPEB through the OPEB plan.
Discount rate	The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following: a. The actuarial present value of benefit payments projected to be made in future periods in which (1) the amount of the OPEB plan's fiduciary net position is projected (under the requirements of this Statement) to be greater than the benefit payments that are projected to be made in that period and (2) OPEB plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on OPEB plan investments. b. The actuarial present value of projected benefit payments not included in (a), calculated using a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale).

Glossary of Terms (continued)

Entry age actuarial cost method	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the Actuarial accrued liability
Healthcare cost trend rates	The rates of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.
Inactive employees	Individuals no longer employed by an employer in the OPEB plan, or the beneficiaries of those individuals. Inactive employees include individuals who have accumulated benefits under the terms of an OPEB plan but are not yet receiving benefit payments.
Measurement period	The period between the prior and the current measurement dates.
Net OPEB liability	The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit OPEB plan that meets the criteria in paragraph 4 of GASB Statement Nos. 74 and 75. Other postemployment benefits (OPEB) (such as death benefits, life insurance, disability, and long- term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.
Projected benefit payments	All benefits estimated to be payable through the OPEB plan (including amounts to be paid by employers or non-employer contributing entities as the benefits come due) to current active and inactive employees as a result of their past service and their expected future service.
Real rate of return	The rate of return on an investment after adjustment to eliminate inflation.
Service costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Total OPEB liability	The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service.

Schedule of Active Member Valuation Data — Pension Benefits

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Increase In Average Pay
12/31/2011	22,037	$1,456,444,123	$66,091	2.5%
12/31/2012	21,447	1,478,253,368	68,926	4.3%
12/31/2013	21,287	1,484,269,715	69,727	1.2%
12/31/2014	21,656	1,514,550,023	69,937	0.3%
12/31/2015	21,596	1,572,417,298	72,811	4.1%
12/31/2016	20,969	1,580,251,254	75,361	3.5%
12/31/2017	20,349	1,567,480,401	77,030	2.2%
12/31/2018	19,671	1,533,721,507	77,969	1.2%
12/31/2019	19,551	1,553,498,503	79,459	1.9%
12/31/2020	19,102	1,532,744,306	80,240	1.0%

Schedule of Retirees and Beneficiaries Added To and Removed From Rolls — Pension Benefits

	Added-To-Rolls		Removed-From-Rolls		Rolls-End-of-Year			
Year Ended	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	Average Annual Benefit	% Increase in Average Annual Benefit
2011	1,158	$ 55,308,088	580	$ 12,124,191	15,432	$ 480,324,519	$ 31,125	5.8%
2012	1,374	58,601,319	632	14,697,753	16,174	524,228,085	32,412	4.1%
2013	992	52,564,737	489	10,006,848	16,677	566,785,974	33,986	4.9%
2014	929	52,208,075	530	11,628,617	17,076	607,365,432	35,568	4.7%
2015	1,323	69,890,199	802	22,262,895	17,597	654,992,736	37,222	4.7%
2016	968	58,252,392	656	18,067,979	17,909	695,177,149	38,817	4.3%
2017	902	57,971,733	594	16,538,820	18,217	736,610,062	40,435	4.2%
2018	1,109	68,372,858	724	22,268,886	18,602	782,714,034	42,077	4.1%
2019	1,223	78,654,100	682	20,981,568	19,143	840,386,566	43,900	4.3%
2020	1,142	78,187,840	843	29,427,349	19,442	889,147,057	45,733	4.2%

Schedule of Retirees and Beneficiaries Added To and Removed From Rolls — Postemployment Healthcare

	Added-To-Rolls		Removed-From-Rolls		Rolls-End-of-Year			
Year Ended	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	Average Annual Benefit	% Increase in Average Annual Benefit
2011	752	$ 4,513,262	381	$ 2,509,723	7,925	$ 46,904,340	$ 5,919	-0.4%
2012	640	3,715,909	386	6,655,532	8,179	43,964,717	5,375	-9.2%
2013	703	3,970,847	346	3,986,309	8,536	43,949,255	5,149	-4.2%
2014	556	6,767,482	501	2,229,694	8,591	48,487,043	5,644	9.6%
2015	631	8,261,563	439	2,119,662	8,783	54,628,944	6,220	10.2%
2016	570	989,701	399	1,962,607	8,954	53,656,038	5,992	-3.7%
2017	540	(3,945,464)*	497	2,255,953	8,997	47,454,621	5,275	-12.0%
2018	567	(6,942,823)*	479	2,200,829	9,085	38,310,969	4,217	-20.10%
2019	591	1,748,045	466	1,821,842	9,210	38,237,172	4,152	-1.50%
2020	602	7,791,538	614	2,598,265	9,198	43,430,445	4,722	13.70%

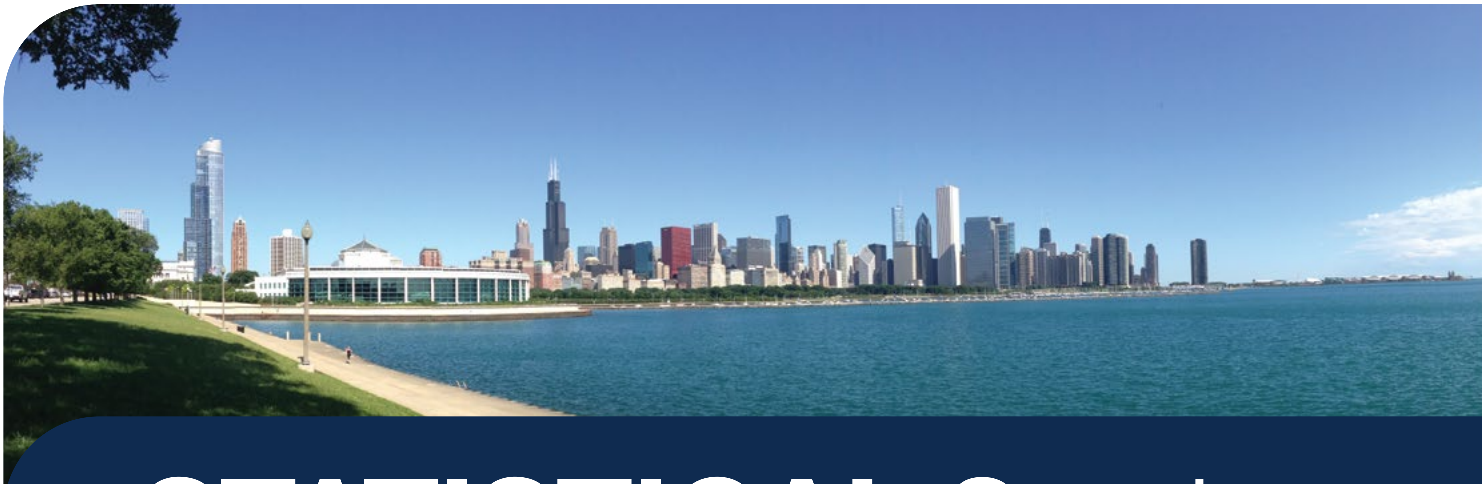
*Employer contribution decreased, resulting in reduction of employer paid benefits from the level in prior years

Solvency Test — Pension Benefits

	Accrued Liabilities For				Percent of Accrued Liabilities Covered By Assets		
Fiscal Year	(1) Active and Inactive Member Accumulated Contributions	(2) Member Currently Receiving Benefits	(3) Active and Inactive Member Employer Portion	Actuarial Value of Assets	(1)	(2)	(3)
2011	$ 1,662,273,117	$ 5,902,779,764	$ 5,063,221,680	$ 7,897,102,116	100%	100%	7%
2012	1,821,792,594	6,431,295,762	5,168,398,587	7,833,882,926	100%	93%	0%
2013	1,854,155,647	6,822,552,230	4,959,868,300	8,381,444,287	100%	96%	0%
2014	1,897,951,260	7,295,515,219	4,947,080,874	8,810,509,070	100%	95%	0%
2015	1,914,569,837	7,864,534,443	5,157,487,056	8,991,018,918	100%	90%	0%
2016	1,967,965,799	8,305,339,574	5,183,468,612	9,488,223,349	100%	91%	0%
2017	2,001,714,112	8,583,373,041	5,086,669,289	10,148,203,834	100%	95%	0%
2018	2,020,570,657	9,050,032,658	5,243,785,732	10,512,756,514	100%	94%	0%
2019	2,016,337,278	9,685,006,939	5,239,863,351	10,983,364,279	100%	93%	0%
2020	2,013,381,600	10,188,823,794	5,207,821,567	11,765,568,459	100%	96%	0%

Solvency Test — Postemployment Healthcare

	Accrued Liabilities For				Percent of Accrued Liabilities Covered By Assets		
Fiscal Year	(1) Active and Inactive Member Accumulated Contributions	(2) Member Currently Receiving Benefits	(3) Active and Inactive Member Employer Portion	Actuarial Value of Assets	(1)	(2)	(3)
2011	$ —	$ 605,375,403	$ 1,073,195,985	$ —	0%	0%	0%
2012	—	776,395,244	1,069,213,888	—	0%	0%	0%
2013	—	818,201,554	1,160,565,936	—	0%	0%	0%
2014	—	826,052,274	1,154,036,343	—	0%	0%	0%
2015	—	879,319,447	1,254,787,260	—	0%	0%	0%
2016	—	825,328,625	1,132,476,063	—	0%	0%	0%
2017	—	811,486,860	1,075,129,583	—	0%	0%	0%
2018	—	701,048,505	833,005,063	—	0%	0%	0%
2019	—	898,168,059	1,002,821,312	—	0%	0%	0%
2020	—	1,008,020,323	1,097,134,196	—	0%	0%	0%



STATISTICAL Section

This section contains additional schedules that are designed to supplement the information in the Comprehensive Annual Financial Report:

Statements of Changes in Plan Net Position — Pension and Postemployment Healthcare provide details on the specific sources and uses of funds.

Schedules of Retired Members by Benefit Type — Pension and Postemployment Healthcare provide details on the monthly pension amounts for retirement and survivor members, including those with postemployment healthcare.

Schedules of Average Benefit Payments — Pension Benefits and Postemployment Healthcare provide details on years of credited service, average monthly pension, average monthly final average salary, and the number of new retirees, including those with postemployment healthcare.

Schedule of Principal Participating Employers — Pension Benefits and Postemployment Healthcare provides details on employers who participate in the Plan.

Additional Schedules Required by Employer provide details on historical financial, investment and actuarial performance.

For year ended December 31, 2020, with comparative totals for 9 years

	2020	2019	2018	2017	2016
Additions:					
Employer contributions	$ 465,778,715	$ 488,003,692	$ 549,437,252	$ 511,750,985	$ 414,703,155
Employee contributions	134,157,866	134,837,512	134,159,171	138,826,184	139,355,592
Net investment and net securities lending income (loss)	1,465,457,845	1,865,645,039	(424,787,945)	1,399,625,874	629,442,470
Other	3,754,806	6,275,804	5,860,613	5,359,418	4,046,158
Total additions	2,069,149,232	2,494,762,047	264,669,091	2,055,562,461	1,187,547,375
Deductions:					
Benefits					
Retirement	799,105,038	751,788,339	704,246,643	661,594,080	624,231,419
Survivors	64,617,964	60,115,798	55,983,104	51,874,102	47,919,324
Disability	10,783,752	11,091,076	11,502,437	11,467,308	10,707,260
Refunds					
Death	4,151,318	4,884,365	3,961,280	4,511,674	2,792,846
Separation	12,737,441	17,610,985	16,909,520	16,792,901	13,967,392
Other	14,101,892	15,250,601	12,791,721	11,690,790	9,941,984
Net administrative and miscellaneous expenses	5,000,609	5,085,445	5,134,047	5,406,034	5,373,555
Total deductions	910,498,014	865,826,609	810,528,752	763,336,888	714,933,780
Net increase (decrease)	1,158,651,218	1,628,935,438	(545,859,661)	1,292,225,573	472,613,595
Net Position:					
Beginning of period	11,490,959,220	9,862,023,782	10,407,883,443	9,115,657,870	8,643,044,275
End of period	$12,649,610,438	$11,490,959,220	$9,862,023,782	$10,407,883,443	$9,115,657,870

For year ended December 31, 2020, with comparative totals for 9 years (continued)

	2015	2014	2013	2012	2011
Additions:					
Employer contributions	$ 136,075,504	$ 146,075,414	$ 147,720,014	$ 152,734,539	$ 162,667,160
Employee contributions	137,707,719	129,325,318	127,593,220	128,869,508	127,577,473
Net investment and net securities lending income (loss)	(21,896,696)	488,890,897	1,179,440,119	887,687,519	82,701,033
Other	4,380,293	3,753,960	4,041,145	4,212,209	3,380,437
Total additions	256,266,820	768,045,589	1,458,794,498	1,173,503,775	376,326,103
Deductions:					
Benefits					
Retirement	587,861,744	543,274,840	507,494,409	469,398,775	429,527,599
Survivors	45,002,859	41,865,298	38,761,919	35,762,286	33,003,057
Disability	10,332,441	10,515,760	10,909,478	12,265,257	13,961,631
Refunds					
Death	4,983,186	3,187,363	3,461,166	4,636,647	3,036,462
Separation	14,486,833	13,082,086	15,180,523	16,740,836	15,813,775
Other	13,803,152	10,077,912	11,231,341	11,704,243	10,315,098
Net administrative and miscellaneous expenses	5,151,110	5,010,206	4,324,634	4,303,353	4,078,843
Total deductions	681,621,325	627,013,465	591,363,470	554,811,397	509,736,465
Net increase (decrease)	(425,354,505)	141,032,124	867,431,028	618,692,378	(133,410,362)
Net Position:					
Beginning of period	9,068,398,780	8,927,366,656	8,059,935,628	7,441,243,250	7,574,653,612
End of period	$ 8,643,044,275	$ 9,068,398,780	$ 8,927,366,656	$ 8,059,935,628	$ 7,441,243,250

For year ended December 31, 2020, with comparative totals for 9 years

	2020	2019	2018	2017	2016
Additions:					
Employer contributions	$ 43,430,445	$ 38,237,172	$ 38,310,969	$ 47,454,641	$ 49,565,249
Annuitant healthcare benefits contributions*	—	—	—	—	41,650,333
Other	32,200,095	28,882,910	21,618,592	17,962,395	9,973,182
Total additions	75,630,540	67,120,082	59,929,561	65,417,036	101,188,764
Deductions:					
Healthcare Benefits	75,630,540	67,120,082	59,929,561	65,417,036	101,188,764
Net increase (decrease)	—	—	—	—	—
Net Position:					
Beginning of period	—	—	—	—	—
End of period	$ —	$ —	$ —	$ —	$ —

*Beginning 2017, the annuitants Healthcare contribution is netted against Healthcare benefits expense.

For year ended December 31, 2020, with comparative totals for 9 years

	2015	2014	2013	2012	2011
Additions:					
Employer contributions	$ 50,756,817	$ 43,957,458	$ 40,097,630	$ 37,986,237	$ 32,670,461
Annuitant healthcare benefits contributions	37,635,349	37,358,502	35,927,206	33,948,728	33,236,282
Other	7,077,550	5,988,102	4,506,584	5,978,480	14,233,879
Total additions	95,469,716	87,304,062	80,531,420	77,913,445	80,140,622
Deductions:					
Healthcare Benefits	95,469,716	87,304,062	80,531,420	77,913,445	80,140,622
Net increase (decrease)	—	—	—	—	—
Net Position:					
Beginning of period	—	—	—	—	—
End of period	$ —	$ —	$ —	$ —	$ —

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Schedule of Retired Members by Benefit Type — Pension Benefits

As of December 31, 2020

Amount of Monthly Pension Benefit			Number of Recipients	Type of Pension Benefit 1	Type of Pension Benefit 2	Benefit Payment Form 1	Benefit Payment Form 2	Benefit Payment Form 3
$ 1	—	500	1,553	1,091	462	967	532	54
501	—	1,000	1,698	1,093	605	1,116	531	51
1,001	—	1,500	1,417	1,006	411	940	477	0
1,501	—	2,000	1,284	984	300	846	437	1
2,001	—	2,500	1,276	1,031	245	793	483	0
2,501	—	3,000	1,384	1,182	202	864	520	0
3,001	—	3,500	1,324	1,129	195	828	496	0
3,501	—	4,000	1,327	1,175	152	815	512	0
4,001	—	4,500	1,292	1,177	115	753	539	0
4,501	—	5,000	1093	1,025	68	593	500	0
5,001	—	5,500	1093	1,046	47	533	560	0
5,501	—	6,000	1002	987	15	452	550	0
6,001	—	6,500	747	734	13	297	450	0
6,501	—	7,000	741	734	7	313	428	0
7,001	—	7,500	651	644	7	244	407	0
7,501	—	8,000	401	398	3	177	224	0
8,001	—	8,500	286	283	3	114	172	0
8,501	—	9,000	208	206	2	75	133	0
9,001	—	9,500	155	153	2	52	103	0
9,501	—	10,000	101	98	3	38	63	0
10,001	—	10,500	40	40	0	12	28	0
10,501	—	11,000	34	30	4	12	22	0
11,001	—	11,500	34	32	2	12	22	0
11,501	—	12,000	19	19	0	1	18	0
12,001	—	12,500	17	15	2	6	11	0
12,501	—	13,000	18	17	1	3	15	0
13,001	—	13,500	29	28	1	7	22	0
13,501	—	14,000	18	18	0	9	9	0
14,001	—	14,500	15	15	0	3	12	0
14,501	—	15,000	18	18	0	6	12	0
Over $15,000			167	164	3	42	125	0
Totals			**19,442**	**16,572**	**2,870**	**10,923**	**8,413**	**106**

Type of Pension Benefit
1. Regular Retirement
2. Survivor Payment

Form of Benefit
1. Whole Life Annuity
2. Joint and Contingent Annuity
3. Temporary Annuit

As of December 31, 2020

Amount of Monthly Pension Benefit			Number of Recipients	Type of Pension Benefit 1	Type of Pension Benefit 2	Benefit Payment Form 1	Benefit Payment Form 2	Benefit Payment Form 3
$ 1	—	500	97	40	57	77	17	3
501	—	1,000	249	96	153	210	39	0
1,001	—	1,500	352	205	147	277	75	0
1,501	—	2,000	489	340	149	356	133	0
2,001	—	2,500	567	435	132	413	154	0
2,501	—	3,000	684	564	120	484	200	0
3,001	—	3,500	692	583	109	483	209	0
3,501	—	4,000	804	704	100	549	255	0
4,001	—	4,500	779	707	72	527	252	0
4,501	—	5,000	678	627	51	436	242	0
5,001	—	5,500	677	642	35	404	273	0
5,501	—	6,000	656	646	10	349	307	0
6,001	—	6,500	463	453	10	234	229	0
6,501	—	7,000	486	481	5	246	240	0
7,001	—	7,500	452	447	5	203	249	0
7,501	—	8,000	278	276	2	152	126	0
8,001	—	8,500	202	199	3	102	100	0
8,501	—	9,000	154	152	2	65	89	0
9,001	—	9,500	108	106	2	43	65	0
9,501	—	10,000	65	63	2	26	39	0
10,001	—	10,500	27	27	0	10	17	0
10,501	—	11,000	18	15	3	9	9	0
11,001	—	11,500	23	21	2	9	14	0
11,501	—	12,000	15	15	0	1	14	0
12,001	—	12,500	8	7	1	3	5	0
12,501	—	13,000	13	12	1	3	10	0
13,001	—	13,500	19	18	1	7	12	0
13,501	—	14,000	10	10	0	5	5	0
14,001	—	14,500	12	12	0	3	9	0
14,501	—	15,000	12	12	0	4	8	0
Over $15,000			109	107	2	27	82	0
Totals			**9,198**	**8,022**	**1,176**	**5,717**	**3,478**	**3**

Type of Pension Benefit
1. Regular Retirement
2. Survivor Payment

Form of Benefit
1. Whole Life Annuity
2. Joint and Contingent Annuity
3. Temporary Annuit

Schedule of Average Benefit Payments — Pension Benefits
Years of Credited Service

		0-4	5-9	10-14	15-19	20-24	25-29	30+
2011	Average Monthly Pension	$439	$955	$1,931	$2,705	$3,686	$4,316	$4,537
	Average Monthly Final Average Salary	$6,747	$6,114	$6,090	$5,667	$5,948	$6,123	$5,712
	Number of New Retirees	74	30	138	157	212	131	267
2012	Average Monthly Pension	$432	$982	$1,828	$2,579	$3,273	$4,273	$4,578
	Average Monthly Final Average Salary	$7,369	$6,598	$5,733	$5,475	$5,391	$5,882	$5,795
	Number of New Retirees	97	35	110	167	210	113	287
2013	Average Monthly Pension	$469	$1,150	$1,864	$2,567	$3,334	$4,864	$4,813
	Average Monthly Final Average Salary	$7,331	$7,653	$5,999	$5,419	$5,597	$6,609	$6,087
	Number of New Retirees	60	44	113	123	168	132	275
2014	Average Monthly Pension	$421	$1,336	$1,767	$2,643	$3,770	$4,620	$4,829
	Average Monthly Final Average Salary	$6,611	$8,364	$5,943	$5,968	$6,296	$6,447	$6,131
	Number of New Retirees	53	33	104	119	155	135	246
2015	Average Monthly Pension	$485	$1,153	$1,756	$2,683	$3,696	$4,796	$5,011
	Average Monthly Final Average Salary	$8,264	$7,364	$6,060	$6,286	$6,382	$6,770	$6,363
	Number of New Retirees	73	43	106	110	180	165	329
2016	Average Monthly Pension	$466	$1,255	$2,105	$2,838	$3,683	$4,772	$4,977
	Average Monthly Final Average Salary	$7,292	$8,242	$6,926	$6,393	$6,256	$6,887	$6,339
	Number of New Retirees	44	31	101	108	131	128	233
2017	Average Monthly Pension	$431	$1,315	$2,133	$2,875	$3,796	$4,577	$5,106
	Average Monthly Final Average Salary	$7,456	$7,640	$6,952	$6,698	$6,670	$6,508	$6,518
	Number of New Retirees	49	35	84	100	136	173	261
2018	Average Monthly Pension	$524	$1,151	$2,236	$2,813	$3,701	$4,561	$5,028
	Average Monthly Final Average Salary	$8,557	$7,697	$7,602	$6,616	$6,414	$6,583	$6,457
	Number of New Retirees	34	31	91	111	134	175	312
2019	Average Monthly Pension	$482	$1,424	$2,266	$2,961	$3,639	$4,846	$5,379
	Average Monthly Final Average Salary	$7,968	$9,015	$7,718	$7,201	$6,481	$6,916	$6,902
	Number of New Retirees	38	39	83	112	140	210	379
2020	Average Monthly Pension	$571	$1,451	$2,022	$2,888	$3,921	$5,024	$5,278
	Average Monthly Final Average Salary	$8,172	$8,708	$7,117	$6,702	$7,128	$7,219	$6,785
	Number of New Retirees	36	28	71	91	122	198	375

Schedule of Average Benefit Payments — Postemployment Healthcare Years of Credited Service

		0-4	5-9	10-14	15-19	20-24	25-29	30+
2011	Average Monthly Pension	$239	$783	$1,839	$2,852	$3,787	$4,056	$4,574
	Average Monthly Final Average Salary	$4,669	$5,044	$5,376	$5,729	$5,991	$5,710	$5,750
	Number of New Retirees	2	7	58	89	144	96	196
2012	Average Monthly Pension	$635	$1,127	$1,767	$2,746	$3,462	$4,572	$4,479
	Average Monthly Final Average Salary	$5,149	$7,880	$5,489	$5,552	$5,457	$6,193	$5,672
	Number of New Retirees	2	4	36	88	142	82	197
2013	Average Monthly Pension	$607	$868	$2,014	$2,674	$3,562	$4,739	$4,705
	Average Monthly Final Average Salary	$5,833	$4,857	$6,140	$5,441	$5,737	$6,441	$5,952
	Number of New Retirees	1	5	48	76	110	87	190
2014	Average Monthly Pension	$0	$609	$1,786	$2,682	$3,631	$4,768	$4,781
	Average Monthly Final Average Salary	$0	$4,183	$5,834	$5,718	$6,035	$6,521	$6,062
	Number of New Retirees	0	4	31	63	104	97	162
2015	Average Monthly Pension	$2,419	$1,150	$1,915	$3,078	$3,881	$4,965	$4,860
	Average Monthly Final Average Salary	$26,180	$8,620	$6,239	$6,854	$6,375	$6,890	$6,175
	Number of New Retirees	1	5	37	60	101	95	232
2016	Average Monthly Pension	$257	$1,148	$2,236	$3,009	$3,860	$5,242	$4,893
	Average Monthly Final Average Salary	$4,469	$6,816	$7,156	$6,548	$6,363	$7,282	$6,219
	Number of New Retirees	1	5	36	54	72	80	154
2017	Average Monthly Pension	$0	$1,693	$2,013	$2,873	$4,136	$4,729	$5,047
	Average Monthly Final Average Salary	$0	$13,707	$6,838	$6,506	$7,098	$6,615	$6,441
	Number of New Retirees	0	3	18	41	77	106	157
2018	Average Monthly Pension	$0	$1,247	$2,543	$3,098	$3,813	$4,941	$4,967
	Average Monthly Final Average Salary	$0	$7,320	$8,545	$7,260	$6,338	$6,943	$6,343
	Number of New Retirees	0	2	33	52	70	105	189
2019	Average Monthly Pension	$0	$1,268	$2,302	$3,753	$3,762	$5,010	$5,482
	Average Monthly Final Average Salary	$0	$6,491	$7,534	$9,032	$6,538	$7,060	$7,004
	Number of New Retirees	0	2	26	44	67	114	223
2020	Average Monthly Pension	$464	$2,362	$2,282	$3,172	$4,085	$5,109	$5,289
	Average Monthly Final Average Salary	$8,070	$8,572	$8,067	$7,249	$7,204	$7,258	$6,809
	Number of New Retirees	1	3	20	37	50	112	215

Schedule of Principal Participating Employers — Pension Benefits and Postemployment Healthcare Combined

	As of December 31, 2020 and 2011			
	2020		2011	
Participating Employer	**Covered Employees**	**Percentage of Total Covered Employees**	**Covered Employees**	**Percentage of Total Covered Employees**
Cook County	19,074	99.85%	22,009	99.87%
County Employees' and Officers' Annuity and Benefit Fund of Cook County	28	0.15%	28	0.13%
Total	19,102	100.00%	22,037	100.00%

Schedule of Investment Rate of Return — Pension and Postemployment Healthcare Benefits Combined

Year Ended December 31,	Investment Rate of Return (Net of Fees)
2011	1.2%
2012	12.5%
2013	15.1%
2014	5.9%
2015	-0.1%
2016	7.7%
2017	15.4%
2018	-3.8%
2019	19.1%
2020	12.7%

Schedule of Actuarial Value of Assets vs. Fair Value of Assets — Pension and Postemployment Healthcare Benefits Combined

Year Ended December 31,	Actuarial Value of Assets	Fair Value of Assets	Actuarial Value as a Percentage of Fair Value
2011	$ 7,897,102,116	$ 7,441,243,250	106.1%
2012	7,833,882,926	8,059,935,628	97.2%
2013	8,381,444,287	8,927,366,656	93.9%
2014	8,810,509,070	9,068,398,780	97.2%
2015	8,991,018,918	8,643,044,275	104.0%
2016	9,488,223,349	9,115,657,870	104.1%
2017	10,148,203,834	10,407,883,443	97.5%
2018	10,512,756,514	9,862,023,782	106.6%
2019	10,983,364,279	11,490,959,220	95.6%
2020	11,765,568,459	12,649,610,438	93.0%

Schedule of Employer Contributions — Pension and Postemployment Healthcare Benefits Combined

Year Ended December 31,	Actuarially Required Contribution (ARC)	Tax Levy Requested	Actual Employer Contribution	Percentage of ARC Contributed
2011	$ 572,318,384	$ 192,234,211	$ 198,837,424	34.7%
2012	613,952,848	196,139,483	190,720,776	31.1%
2013	655,800,100	192,969,505	187,817,644	28.6%
2014	719,890,057	194,668,229	190,032,872	26.4%
2015	634,722,132	192,786,468	186,832,321	29.4%
2016	639,794,759	195,653,930	464,268,404 [1]	72.6%
2017	696,007,249	208,226,206	559,205,626 [1]	80.3%
2018	691,620,570	211,449,244	587,748,221 [1]	85.0%
2019	643,433,440	209,506,965	526,240,864 [1]	81.8%
2020	636,336,154	200,939,168	509,209,160 [1]	80.0%

[1]. Includes supplemental employer contribution.

Schedule of Financial Condition — Pension and Postemployment Healthcare Benefits Combined

	For year ended December 31, 2020, with comparative totals for 9 years				
	2020	2019	2018	2017	2016
Beginning Net Position (Fair Value)	$11,490,959,220	$9,862,023,782	$10,407,883,443	$ 9,115,657,870	$ 8,643,044,275
Additions:					
Employer contributions	509,209,160	526,240,864	587,748,221	559,205,626	464,268,404
Employer contributions	134,157,866	134,837,512	134,159,171	138,826,184	139,355,592
Annuitant Health Benefit Contributions	—*	—*	—*	—*	41,650,333
Net investment income (loss)	1,465,457,845	1,865,645,039	(424,787,945)	1,399,625,874	629,442,470
Other	35,954,901	35,158,714	27,479,205	23,321,813	14,019,340
Total additions	2,144,779,772	2,561,882,129	324,598,652	2,120,979,497	1,288,736,139
Deductions:					
Benefits	950,137,294	890,115,295	831,661,745	790,352,526	784,046,767
Refunds	30,990,651	37,745,951	33,662,521	32,995,364	26,702,222
Administrative Expenses	5,000,609	5,085,445	5,134,047	5,406,034	5,373,555
Total deductions	986,128,554	932,946,691	870,458,313	828,753,924	816,122,544
Ending Net Position (Fair Value)	$12,649,610,438	$11,490,959,220	$ 9,862,023,782	$10,407,883,443	$ 9,115,657,870
Actuarial Value of Assets	11,765,568,459	10,983,364,279	10,512,756,514	10,148,203,834	9,488,223,349
Actuarial Accrued Liabilities (AAL)	18,421,022,810	17,949,663,806	17,303,773,833	16,889,499,662	16,726,457,108
Unfunded AAL (UAAL) (Fair Value)	5,771,412,372	6,458,704,586	7,441,750,051	6,481,616,219	7,610,799,238
Unfunded AAL (UAAL) (Actuarial Value)	6,655,454,351	6,966,299,527	6,791,017,319	6,741,295,828	7,238,233,759
Funded Ratio (Fair Value)	68.7%	64.0%	57.0%	61.6%	54.5%
Funded Ratio (Actuarial Value)	63.9%	61.2%	60.8%	60.1%	56.7%

* Beginning 2017, the annuitants Healthcare contribuants netted against Healthcare benefits expense.

Schedule of Financial Condition — Pension and Postemployment Healthcare Benefits Combined (continued)

	For year ended December 31, 2020, with comparative totals for 9 years				
	2015	**2014**	**2013**	**2012**	**2011**
Beginning Net Position (Fair Value)	$ 9,068,398,780	$ 8,927,366,656	$ 8,059,935,628	$ 7,441,243,250	$ 7,574,653,612
Additions:					
Employer contributions	186,832,321	190,032,872	187,817,644	190,720,776	195,337,621
Employer contributions	137,707,719	129,325,318	127,593,220	128,869,508	127,577,473
Annuitant Health Benefit Contributions	37,635,349	37,358,502	35,927,206	33,948,728	33,236,282
Net investment income (loss)	(21,896,696)	488,890,897	1,179,440,119	887,687,519	82,701,033
Other	11,457,843	9,742,062	8,547,729	10,190,689	17,614,316
Total additions	351,736,536	855,349,651	1,539,325,918	1,251,417,220	456,466,725
Deductions:					
Benefits	738,666,760	682,959,960	637,697,226	595,339,763	556,632,909
Refunds	33,273,171	26,347,361	29,873,030	33,081,726	29,165,335
Administrative Expenses	5,151,110	5,010,206	4,324,634	4,303,353	4,078,843
Total deductions	777,091,041	714,317,527	671,894,890	632,724,842	589,877,087
Ending Net Position (Fair Value)	$ 8,643,044,275	$ 9,068,398,780	$ 8,927,366,656	$ 8,059,935,628	$ 7,441,243,250
Actuarial Value of Assets	8,991,018,918	8,810,509,070	8,381,444,287	7,833,882,926	7,897,102,116
Actuarial Accrued Liabilities (AAL)	16,232,185,534	15,318,790,688	14,812,087,677	14,630,250,955	13,724,012,399
Unfunded AAL (UAAL) (Fair Value)	7,589,141,259	6,250,391,908	5,884,721,021	6,570,315,327	6,282,769,149
Unfunded AAL (UAAL) (Actuarial Value)	7,241,166,616	6,508,281,618	6,430,643,390	6,796,368,029	5,826,910,283
Funded Ratio (Fair Value)	53.2%	59.2%	60.3%	55.1%	54.2%
Funded Ratio (Actuarial Value)	55.4%	57.5%	56.6%	53.5%	57.5%

Schedule of Funding Progress—Pension and Postemployment Healthcare Benefits Combined

Year Ended December 31,	Actuarial Accrued Liabilities (AAL)*	Actuarial Value of Assets	Fair Value of Net Position	Unfunded AAL (UAAL) (Actuarial Value)	Unfunded AAL (UAAL) (Fair Value)
2011	$ 13,724,012,399	$ 7,897,102,116	$ 7,441,243,250	$ 5,826,910,283	$ 6,282,769,149
2012	14,630,250,955	7,833,882,926	8,059,935,628	6,796,368,029	6,570,315,327
2013	14,812,087,677	8,381,444,287	8,927,366,656	6,430,643,390	5,884,721,021
2014	15,318,790,688	8,810,509,070	9,068,398,780	6,508,281,618	6,250,391,908
2015	16,232,185,534	8,991,018,918	8,643,044,275	7,241,166,616	7,589,141,259
2016	16,726,457,108	9,488,223,349	9,115,657,870	7,238,233,759	7,610,799,238
2017	16,889,499,662	10,148,203,834	10,407,883,443	6,741,295,828	6,481,616,219
2018	17,303,773,833	10,512,756,514	9,862,023,782	6,791,017,319	7,441,750,051
2019	17,949,663,806	10,983,364,279	11,490,959,220	6,966,299,527	6,458,704,586
2020	18,421,022,810	11,765,568,459	12,649,610,438	6,655,454,351	5,771,412,372

Schedule of Funding Progress — Pension Benefits

Year Ended December 31,	Actuarial Accrued Liabilities(AAL)*	Actuarial Value of Assets	Fair Value of Net Position	Unfunded AAL (UAAL) (Actuarial Value)	Unfunded AAL (UAAL) (Fair Value)
2011	$ 12,628,274,561	$ 7,897,102,116	$ 7,441,243,250	$ 4,731,172,445	$ 5,187,031,311
2012	13,418,486,943	7,833,882,926	8,059,935,628	5,584,604,017	5,358,551,315
2013	13,636,576,177	8,381,444,287	8,927,366,656	5,255,131,890	4,709,209,521
2014	14,140,547,353	8,810,509,070	9,068,398,780	5,330,038,283	5,072,148,573
2015	14,936,591,336	8,991,018,918	8,643,044,275	5,945,572,418	6,293,547,061
2016	15,456,773,985	9,488,223,349	9,115,657,870	5,968,550,636	6,341,116,115
2017	15,671,756,443	10,148,203,834	10,407,883,443	5,523,552,609	5,263,873,000
2018	16,314,389,047	10,512,756,514	9,862,023,782	5,801,632,533	6,452,365,265
2019	16,941,207,568	10,983,364,279	11,490,959,220	5,957,843,289	5,450,248,348
2020	17,410,026,961	11,765,568,459	12,649,610,438	5,644,458,502	4,760,416,523

* These amounts are determined using the assumed discount rate for the actuarial funding calculations. These discount rates differ from the GASB accounting rates assumptions utilized in the AAL detailed in the OPEB tables on pages 154 and 155.

Schedule of Funding Progress—Pension and Postemployment Healthcare Benefits Combined (continued)

Unfunded AAL (UAAL) (Fair Value)	Funded Ratio (Actuarial Value)	Funded Ratio (Fair Value)	Covered Payroll	UAAL as a Percentage of Covered Payroll (Actuarial Value)	UAAL as a Percentage of Covered Payroll (Fair Value)
$ 6,282,769,149	57.5%	54.2%	$ 1,456,444,123	400.1%	431.4%
6,570,315,327	53.5%	55.1%	1,478,253,368	459.8%	444.5%
5,884,721,021	56.6%	60.3%	1,484,269,715	433.3%	396.5%
6,250,391,908	57.5%	59.2%	1,514,550,023	429.7%	412.7%
7,589,141,259	55.4%	53.2%	1,572,417,298	460.5%	482.6%
7,610,799,238	56.7%	54.5%	1,580,251,254	458.0%	481.6%
6,481,616,219	60.1%	61.6%	1,567,480,401	430.1%	413.5%
7,441,750,051	60.8%	57.0%	1,533,721,507	442.8%	485.2%
6,458,704,586	61.2%	64.0%	1,553,498,503	448.4%	415.8%
5,771,412,372	63.9%	68.7%	1,532,744,306	434.2%	376.5%

Schedule of Funding Progress — Pension Benefits (continued)

Unfunded AAL (UAAL) (Fair Value)	Funded Ratio (Actuarial Value)	Funded Ratio (Fair Value)	Covered Payroll	UAAL as a Percentage of Covered Payroll (Actuarial Value)	UAAL as a Percentage of Covered Payroll (Fair Value)
$ 5,187,031,311	62.5%	58.9%	$ 1,456,444,123	324.8%	356.1%
5,358,551,315	58.4%	60.1%	1,478,253,368	377.8%	362.5%
4,709,209,521	61.5%	65.5%	1,484,269,715	354.1%	317.3%
5,072,148,573	62.3%	64.1%	1,514,550,023	351.9%	334.9%
6,293,547,061	60.2%	57.9%	1,572,417,298	378.1%	400.2%
6,341,116,115	61.4%	59.0%	1,580,251,254	377.7%	401.3%
5,263,873,000	64.8%	66.4%	1,567,480,401	352.4%	335.8%
6,452,365,265	64.4%	60.4%	1,533,721,507	378.3%	420.7%
5,450,248,348	64.8%	67.8%	1,553,498,503	383.5%	350.8%
4,760,416,523	67.6%	72.7%	1,532,744,306	368.3%	310.6%

Schedule of Funding Progress — Postemployment Healthcare

Year Ended December 31,	Actuarial Accrued Liabilities (AAL)	Actuarial Value of Assets	Fair Value of Net Position	Unfunded AAL (UAAL) (Actuarial Value)	Unfunded AAL (UAAL) (Fair Value)
2011	$ 1,678,571,388	$ —	$ —	$ 1,678,571,388	$ 1,678,571,388
2012	1,845,609,132	—	—	1,845,609,132	1,845,609,132
2013	1,978,767,490	—	—	1,978,767,490	1,978,767,490
2014	1,980,088,617	—	—	1,980,088,617	1,980,088,617
2015	2,134,106,707	—	—	2,134,106,707	2,134,106,707
2016	1,957,804,688	—	—	1,957,804,688	1,957,804,688
2017	1,886,616,443	—	—	1,886,616,443	1,886,616,443
2018	1,534,053,569	—	—	1,534,053,569	1,534,053,569
2019	1,900,989,370	—	—	1,900,989,370	1,900,989,370
2020	2,105,154,520	—	—	2,105,154,520	2,105,154,520

Schedule of Funding Progress — Postemployment Healthcare (continued)

Unfunded AAL (UAAL) (Fair Value)	Funded Ratio (Actuarial Value)	Funded Ratio (Fair Value)	Covered Payroll	UAAL as a Percentage of Covered Payroll (Actuarial Value)	UAAL as a Percentage of Covered Payroll (Fair Value)
$ 1,678,571,388	0.0%	0.0%	$ 1,456,444,123	115.3%	115.3%
1,845,609,132	0.0%	0.0%	1,478,253,368	124.9%	124.9%
1,978,767,490	0.0%	0.0%	1,484,269,715	133.3%	133.3%
1,980,088,617	0.0%	0.0%	1,514,550,023	130.7%	130.7%
2,134,106,707	0.0%	0.0%	1,597,597,077	133.6%	133.6%
1,957,804,688	0.0%	0.0%	1,609,559,234	121.6%	121.6%
1,886,616,443	0.0%	0.0%	1,602,986,483	117.7%	117.7%
1,534,053,569	0.0%	0.0%	1,576,658,158	97.3%	97.3%
1,900,989,370	0.0%	0.0%	1,603,347,918	118.6%	118.6%
2,105,154,520	0.0%	0.0%	1,583,198,305	133.0%	133.0%

Schedule of Components of Change in Unfunded Liability — Pension Benefits and Postemployment Healthcare Combined

Year Ended December 31,	Salary Increase Higher / (Lower) than Assumed	Investment Returns (Higher) / Lower than Assumed	Employer Contributions Higher / (Lower) than Normal Cost Plus Interest	Legislative Amendments
2011	$ (138,554,686)	$ 459,875,129	$ 371,793,485	$ —
2012	34,073,219	376,601,751	252,886,106	—
2013	(184,385,510)	(586,433,767)	513,419,056	—
2014	(148,871,075)	(161,124,113)	423,103,748	—
2015	164,977,011	61,964,372	431,124,367	—
2016	2,613,304	14,518,350	196,813,036	—
2017	(78,486,650)	(59,718,736)	93,692,715	—
2018	(144,455,926)	245,808,320	13,181,699	—
2019	(21,547,203)	46,426,889	48,781,707	—
2020	(48,554,330)	(303,644,048)	49,252,170	—

Schedule of Components of Change in Unfunded AAL — Pension Benefits and Postemployment Healthcare Combined (continued)

Changes in Actuarial Assumptions	Plan Changes	Other Sources [1]	Total Change in Unfunded Liability
$ —	$ —	$ (25,972,161)	$ 667,141,767
—	—	305,896,670	969,457,746
—	—	(108,324,418)	(365,724,639)
—	—	(35,470,332)	77,638,228
—	—	74,819,248	732,884,998
—	—	(216,877,547)	(2,932,857)
(323,327,660)	(50,292,826)	(78,804,774)	(496,937,931)
(24,987,447)	(164,731,446)	124,906,290	49,721,490
10,343,906	(49,424,951)	140,701,859	175,282,207
—	(38,192,819)	30,293,851	(310,845,176)

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COUNTY EMPLOYEES' AND OFFICERS'
ANNUITY AND BENEFIT FUND OF COOK COUNTY

70 West Madison Street, Suite 1925, Chicago, Illinois 60602
312.603.1200
www.cookcountypension.com

Our objective is to provide exceptional service in the support and administration of your annuity, health and disability benefits. In addition, along with your Board of Trustees, we are also committed to effectively managing the assets of both the Cook County and Forest Preserve Funds.