



Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

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

**Combined Actuarial Valuation as of
December 31, 2022**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

June 1, 2023

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

RE: December 31, 2022 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" or "the Plan") as of December 31, 2022. The major findings of the valuation are contained in this report. Cavanaugh Macdonald Consulting (CMC) performs the actuarial valuation annually.

For purposes of GASB Statement No. 67 and GASB Statement No. 74, we have performed separate actuarial valuations of the pension benefits and retiree health insurance benefits provided by the CEABF and have prepared actuarial reports based on these valuations. As has been done in past years, we have also performed this combined actuarial valuation of the pension and retiree health insurance benefits provided by the Fund to measure the overall funded status and contribution requirements of the Fund. We believe that such a combined valuation is required under Section 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....". This report is intended to present the results of the combined valuation. For more details on the Funds, readers are encouraged to review the separate GASB 67 and 74 reports. In particular, the separate GASB 75 report values retiree health liabilities at an unfunded 3.65% discount rate, while this combined report values retiree health liabilities at the funded discount rate of 7.00%.

In preparing this report, we relied, without audit by us, 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. All exhibits, with the exception of Exhibits 2.1 and 2.2, were prepared by the actuary. The valuation results depend on the integrity of this information. The benefits considered are those delineated in the Fund. The CEABF was established on January 1, 1926 and is governed by legislation contained in the Illinois Compiled statutes, particularly Chapter 40, as amended and restated effective December 31, 2022. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

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.

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 2043. 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, 2021 valuation. The Board's recent practice is to review the experience of the CEABF every four years to determine if any changes to the valuation assumptions are warranted. The assumptions used in the valuation are based on recommendations made and approved by the Board as part of an Experience Study covering plan years from January 1, 2017 through December 31, 2020. We recommend performing an Experience Study covering plan years from January 1, 2021 through December 31, 2024 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, 2025 valuation. A summary of the actuarial assumptions and methods used in this actuarial valuation are shown in Appendix C beginning on page 48.

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 actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

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

- Comparative Summary of Principal Actuarial Valuation Results
- Actuarial Liabilities and Normal Cost
- Actuarial Contributions
- Actuarial Balance Sheet
- Solvency Test
- Reconciliation of Change in Unfunded Actuarial Liability
- History of UAAL and Funded Ratio



- Determination of Actuarial Value of Assets
- Membership Projection
- Payroll Projection
- Projection of Employer Contribution Amounts
- Projection of Funded Status
- Table of Projected Actuarial Results
- Historical Asset Volatility Ratios
- Historical Cash Flows
- Liability Maturity Measures
- Membership Data
- Summary of Benefit Provisions
- Summary of Substantive Plan Provisions for Retiree Health Care
- Description of Actuarial Methods and Valuation Procedures
 - Actuarial Cost Method
 - Asset Valuation Method
 - Valuation Procedures
- Summary of Actuarial Assumptions for Pension Fund
- Summary of Actuarial Assumptions and Methods for Retiree Health Care

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

This is to certify that the independent consulting actuaries, Larry Langer, Wendy Ludbrook and Alisa Bennett, 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 B.

Respectfully submitted,

A handwritten signature in blue ink, appearing to be 'LL'.

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

A handwritten signature in blue ink, appearing to be 'Wendy Ludbrook'.

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

A handwritten signature in blue ink, appearing to be 'Alisa Bennett'.

Alisa Bennett, FSA, EA, FCA, MAAA
President

A handwritten signature in blue ink, appearing to be 'Ryan Gundersen'.

Ryan Gundersen
Senior Consultant



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EXECUTIVE SUMMARY

Overview

The County Employees’ and Officers’ Annuity and Benefit Fund of Cook County (“CEABF” or “the Fund” or “the Plan”) provides pension and ancillary benefit payments to the active, retired and separated employees of the 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, 2022.

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, 2022, there were 18,107 employees in active service (including 173 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, 2022		December 31, 2021	
Number of active employees		18,107		18,320
Average age		47.9		47.8
Average years of service		13.5		13.6
Total annual payroll for year ended	\$	1,577,093,973	\$	1,520,619,855
Average annual salary		87,099		83,003
Total accumulated contributions	\$	1,769,777,484	\$	1,763,374,996
Average accumulated contributions		97,740		96,254

The number of active members decreased by 1.2% from the previous valuation date. The average age of the active members increased by 0.1 years, and the average service decreased by 0.1 years. The total annual salary increased by 3.7%. The average salary increased by 4.9% from the previous valuation.

Distributions of active members by age, service, and salary are given in Exhibits 5.2 and 5.3, beginning on page 29.



EXECUTIVE SUMMARY

The salaries shown for active members are the actual salaries reported, but limited by the dollar amount defined under Internal Revenue Code Section 401(a)(17) for affected Tier 1 members and to the paycap legislated for affected Tier 2 members.

A schedule of active member data and reconciliation of the active membership from the previous year is shown in Exhibits 5.4 and 5.5 beginning on page 31.

Disabilities: There were 173 disabled members (included in the active data). There were 194 disabilities in the prior year.

Retirees and Beneficiaries: In addition to the active members, there were 17,163 retired members and 2,975 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, 2022		December 31, 2021	
Number of members receiving payments				
Retirees		17,163		16,945
Beneficiaries		<u>2,975</u>		<u>2,911</u>
Total		20,138		19,856
Average age		72.7		72.5
Annual benefit amounts				
Retirees	\$	917,745,091	\$	875,478,663
Beneficiaries		<u>76,435,010</u>		<u>71,423,832</u>
Total	\$	994,180,100	\$	946,902,495
Average annual benefit payments	\$	49,368	\$	47,688

The number of retired members and beneficiaries increased by 1.4% from the previous valuation date. The average age of the retired members increased by 0.2 years. The total annual benefit payments for these members increased by 5.0% from the previous valuation date.

Distributions of retired members by age and form of payment are given in Exhibits 5.7 through 5.10 on pages 34 through 37.

Inactives: In addition to the active and retired members, there were 18,019 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, 2022		December 31, 2021	
Number of inactive members		18,019		17,313
Average age		50.5		50.0



EXECUTIVE SUMMARY

The number of inactive members increased by 4.1% from the previous valuation. The average age of the inactive members increased by 0.5 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 \$12.0 billion as of December 31, 2022. This includes a decrease of \$2.3 billion from the Net Position Available for Benefits of \$14.3 billion as of December 31, 2021. During the prior year, the fair value of assets experienced an investment rate of return of -12.90% (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, 2022, the assets available for benefits on an actuarial value basis were \$13.2 billion. This includes an increase of \$0.4 billion over the actuarial value of assets of \$12.8 billion as of December 31, 2021. During 2022, the actuarial value of assets experienced an actuarial rate of return of 5.96% 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 in Section II beginning on page 15.

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 loss of \$408.3 million during the prior year. This net loss is about 2.1% of the Fund's prior year actuarial accrued liability. The net loss 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 loss of \$276.3 million during the year ending December 31, 2022. This loss increased the unfunded actuarial accrued liability by \$276.3 million and decreased the funded ratio by 0.94%.

There were 16,072 active members who were also reported active in the December 31, 2021 actuarial valuation. The total pensionable salary for this group increased by 6.5%, which was higher than the 3.4% increase that was expected.



EXECUTIVE SUMMARY

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 in Appendix C, D and E. 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, 2022 was reported to be -12.90%, which was lower than the assumed rate of 7.00%.

The Fund experienced a loss on an actuarial value of assets basis. The rate of return on the actuarial value of Fund assets for the year ending December 31, 2022 was approximately 5.96% compared to the assumption of 7.00%, resulting in an asset loss of \$132.0 million. This loss increased the unfunded actuarial accrued liability by \$132.0 billion and decreased the funded ratio by 0.7%.

The rate of return on the fair value of assets for the year ending December 31, 2022 was lower than the assumed rate of 7.00%. The actuarial value of the assets recognizes only 20% of the 2022 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 loss recognized this year is primarily due to the investment loss in 2022. It should be noted that the Fund's assumed asset return of 7.00% during 2022 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 in Exhibit 1.5 on page 13.

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 2043. **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 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 2023 has been determined to be \$87.2 million, or 5.42% of pay. This represents an increase in the employer normal cost rate of 0.17% of pay from last year's employer normal cost rate of 5.25%.

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



EXECUTIVE SUMMARY

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, 2022 is \$6.65 billion. This represents an increase of \$381 million in the unfunded actuarial accrued liability from last year's amount of \$6.27 billion. The annual payment required to amortize the unfunded actuarial accrued liability of \$6.65 billion, over a period of 30 years, as of December 31, 2022 is \$518.1 million, or 32.2% of pay.

The annual actuarially required employer contribution for fiscal year ending December 31, 2024 is \$605.3 million, or 37.6% of pay. This represents an increase of \$35.2 million in the employer contribution amount of \$570.1 million for fiscal year ending December 31, 2023, or an increase of 1.0% of pay from last year's employer contribution rate of 36.6%.

The actuarial liabilities and development of the annual actuarial employer contribution is shown in Exhibits 1.1 and 1.2 beginning on page 9.

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, 2022 the funded ratio of the Fund is 66.46%. This represents a decrease of 0.70% from last year's funded ratio of 67.16% as of December 31, 2021.

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 in Exhibit 1.6 on page 14.

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 GASB No. 74 can be found in separate reports.



EXECUTIVE SUMMARY

Projections

As part of the annual actuarial valuation, a forecast of expected future valuation results is performed over a 35-year period beginning on the valuation date. This analysis provides a dynamic look into the future to identify trends in future employer contributions and funded status. The forecast replaces active members who are assumed to decrement (retire, separate, etc.) during the period with new employees resulting in a stable active membership. The forecast assumes all actuarial assumptions are exactly realized each year during the forecast period. The results of these forecasts can be found in Section III.

Changes in Fund Provisions

There were no changes in benefits or other Fund provisions for pension considered in this actuarial valuation since the last valuation performed as of December 31, 2021.

A description of the plan provisions can be found in Appendix A and B of Section VI of the report beginning on page 38.

Changes in Actuarial Assumptions, Methods, or Procedures

The assumptions used in this valuation were developed as part of an Experience Study covering plan years from January 1, 2017 through December 31, 2020 and first used in the December 31, 2021 actuarial valuation.

Health care cost trend rates that apply to expected claims, premiums and retiree contributions were updated for pre and post-Medicare. This change increased the Retiree Healthcare Portion of the Actuarial Accrued Liability by \$34.3 million.

In valuing retiree health care benefits per capita medical costs were updated based on claims, enrollment, drug rebates and EGWP subsidies for the period January 1, 2022 through December 31, 2022. These changes increased the Retiree Health Care portion of the actuarial accrued liability of the Fund by \$55.2 million.

A description of the assumptions and methods can be found in Appendix C, D, and E of Section VI of the report beginning on page 48.

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



EXECUTIVE SUMMARY

COUNTY EMPLOYEES' AND OFFICERS' ANNUITY AND BENEFIT FUND

PRINCIPAL ACTUARIAL VALUATION RESULTS

Actuarial Valuation as of	December 31, 2022	December 31, 2021
Summary of Member Data		
Number of Members Included in the Valuation:		
Active Members	18,107	18,320
Retirees and Beneficiaries	20,138	19,856
Inactive Members	<u>18,019</u>	<u>17,313</u>
Total	56,264	55,489
Annual Payroll		
Average	\$ 87,099	\$ 83,003
Annual Benefit Payments		
Retirees and Beneficiaries (Average) ¹	\$ 49,368	\$ 47,688
Investment Returns		
Fair Value Rate of Return (net of investment expenses) ²	-12.90%	17.15%
Actuarial Value Rate of Return	5.96%	11.95%
Summary of Assets and Liabilities		
Total Actuarial Accrued Liability	\$ 19,829,273,857	\$ 19,091,357,820
Actuarial Value of Assets	<u>13,179,038,012</u>	<u>12,822,498,767</u>
Unfunded Actuarial Accrued Liability	\$ 6,650,235,845	\$ 6,268,859,053
Funded Ratio	66.46%	67.16%
Fiscal Year	2024	2023
Employer Actuarial Required Contribution		
Employer Normal Cost	\$ 87,247,149	\$ 81,711,083
Amortization of Unfunded Actuarial Accrued Liability (Surplus)	<u>518,092,055</u>	<u>488,380,585</u>
Employer Actuarial Required Contribution	\$ 605,339,204	\$ 570,091,668
Actual Statutory/Contribution	\$ 199,225,570	\$ 200,405,020
Supplemental Contribution	TBD	\$ 291,691,000
Amount by which employer statutory contributions are expected to fall short of the actuarially determined contribution	\$ 406,113,634	\$ 369,686,648
Required tax multiple for employer contribution to meet the actuarially determined contribution	4.68	4.38
Insolvency Date	2043	2054

¹The average annual benefit payments for retirees only is \$53,472 as of December 31, 2022 and \$51,666 as of December 31, 2021

²Rate of return Provided by the CCPF.



SECTION I – VALUATION RESULTS

EXHIBIT 1.1

ACTUARIAL LIABILITIES AND NORMAL COST

Actuarial Liabilities	Tier 1		Tier 2		Total		December 31, 2021 Total	
1. Present Value of Projected Benefits								
a. Retirement Benefits	\$ 6,769,372,390		\$ 518,614,866		\$ 7,287,987,256		\$ 7,142,488,199	
b. Withdrawal Benefits	151,779,061		251,149,519		402,928,580		390,346,664	
c. Death Benefits	54,980,910		11,051,881		66,032,791		64,865,231	
d. Retiree Health Insurance	467,346,603		125,760,264		593,106,867		521,156,547	
Total	\$ 7,443,478,964		\$ 906,576,530		\$ 8,350,055,494		\$ 8,118,856,641	
2. Retired Members and Beneficiaries Receiving Pension Benefits	11,696,889,032		2,236,889		11,699,125,921		11,218,670,299	
3. Retired Members' Retiree Health Insurance	563,457,487		634,258		564,091,745		522,106,844	
4. Inactive Members with Deferred Pension Benefits	662,908,323		28,820,403		691,728,726		680,191,420	
5. Inactive Members' Retiree Health Insurance	45,317,717		637,276		45,954,993		39,300,410	
6. Total Present Value of Projected Benefits (1. + 2. + 3. + 4. + 5.)	\$ 20,412,051,523		\$ 938,905,356		\$ 21,350,956,879		\$ 20,579,125,614	
7. Present Value of Future Normal Costs	1,043,640,160		478,042,861		1,521,683,022		1,487,767,794	
8. Total Actuarial Accrued Liability (6. - 7.)	\$ 19,368,411,363		\$ 460,862,495		\$ 19,829,273,857		\$ 19,091,357,820	
a. Active Member Pension Benefits	6,012,148,337		371,044,139		6,383,192,476		6,239,796,798	
b. Active Member Retiree Health Insurance	387,690,467		57,489,530		445,179,997		391,292,049	
c. Retired Members and Beneficiaries Receiving Pension Benefits	11,696,889,032		2,236,889		11,699,125,921		11,218,670,299	
d. Retired Members' Retiree Health Insurance	563,457,487		634,258		564,091,745		522,106,844	
e. Inactive Members with Deferred Pension Benefits	662,908,323		28,820,403		691,728,726		680,191,420	
f. Inactive Members' Retiree Health Insurance	45,317,717		637,276		45,954,993		39,300,410	

Normal Cost as of December 31, 2022	Tier 1		Tier 2		Total		December 31, 2021 Total	
Projected Capped Payroll for Fiscal Year 2023	\$ 1,003,503,434		\$ 607,368,202		\$ 1,610,871,636		\$ 1,557,836,640	
1. Total Normal Cost	Amount	% of Pay	Amount	% of Pay	Amount	% of Pay	Amount	% of Pay
a. Retirement Benefits	\$ 119,759,683	11.93%	\$ 36,284,428	5.97%	\$ 156,044,111	9.69%	\$ 153,420,804	9.85%
b. Withdrawal Benefits	16,392,992	1.63%	15,452,559	2.54%	31,845,551	1.98%	30,252,929	1.94%
c. Duty Disability Benefits	109,352	0.01%	1,928	0.00%	111,280	0.01%	78,150	0.01%
d. Ordinary Disability Benefits	9,171,938	0.91%	821,155	0.14%	9,993,093	0.62%	6,105,441	0.39%
e. Death Benefits	1,501,643	0.15%	755,598	0.12%	2,257,241	0.14%	2,196,294	0.14%
f. Retiree Health Insurance	11,130,718	1.11%	8,415,776	1.39%	19,546,494	1.20%	17,100,441	1.10%
g. Administrative Expenses	2,913,717	0.29%	1,763,520	0.29%	4,677,237	0.29%	5,235,500	0.34%
Total	\$ 160,980,043	16.04%	\$ 63,494,964	10.46%	\$ 224,475,007	13.95%	\$ 214,389,559	13.77%
2. Expected Member Contributions	\$ 85,511,638	8.52%	\$ 51,716,220	8.51%	\$ 137,227,858	8.52%	\$ 132,678,476	8.52%
3. Employer Normal Cost (1. - 2.)	\$ 75,468,405	7.52%	\$ 11,778,744	1.96%	\$ 87,247,149	5.42%	\$ 81,711,084	5.25%

Numbers may not add due to rounding



SECTION I – VALUATION RESULTS

EXHIBIT 1.2

ACTUARIAL CONTRIBUTIONS

Valuation Date	December 31, 2022	December 31, 2021
1. Projected Payroll for Year Beginning	\$ 1,610,871,636	\$ 1,557,836,640
2. Total Actuarial Accrued Liability		
a. Active Members		
i. Retirement Benefits	\$ 6,180,033,408	\$ 6,039,389,257
ii. Withdrawal Benefits	153,360,970	151,468,063
iii. Death Benefits	49,798,098	48,939,478
iv. Retiree Health Insurance	445,179,996	391,292,049
v. Total	\$ 6,828,372,472	\$ 6,631,088,847
b. Retired Members and Beneficiaries Receiving Benefits	11,699,125,921	11,218,670,299
c. Retired Members' Retiree Health Insurance	564,091,745	522,106,844
d. Inactive Members with Deferred Benefits	691,728,726	680,191,420
e. Inactive Members' Retiree Health Insurance	45,954,993	39,300,410
f. Total (2a. + 2b. + 2c. + 2d. + 2e.)	\$ 19,829,273,857	\$ 19,091,357,820
3. Actuarial Value of Assets	13,179,038,012	12,822,498,767
4. Unfunded Actuarial Accrued Liability (UAAL) (2f. - 3.)	\$ 6,650,235,845	\$ 6,268,859,053
5. Funded Ratio (3. / 2f.)	66.46%	67.16%
6. UAAL as a Percent of Annual Payroll (4. / 1.)	412.84%	402.41%

Development of Employer Contribution*	Fiscal Year 2024	Fiscal Year 2023
7. Amortization Payment for UAAL (30 year amortization)		
a. Amount	\$ 518,092,055	\$ 488,380,585
b. As a % of pay (7a. / 1.)	32.16%	31.35%
8. Employer Normal Cost		
a. Amount	\$ 87,247,149	\$ 81,711,083
b. As a % of pay (8a. / 1.)	5.42%	5.25%
9. Employer Actuarial Required Contribution*		
a. Amount (8a. + 7a.)	\$ 605,339,204	\$ 570,091,668
b. As a % of pay (9a. / 1.)	37.58%	36.60%
10. Actual/Statutory Contribution**	\$ 199,225,570	\$ 492,096,020
11. Required tax multiple for Employer ARC	4.68	4.38

* These contribution rates are amounts needed to fund the CEABF in an actuarially responsible manner.

** The Actual/Statutory contribution for fiscal year ending December 31, 2023 includes an additional \$291.7M supplemental contribution from the employer.



SECTION I – VALUATION RESULTS

EXHIBIT 1.3

ACTUARIAL BALANCE SHEET

Financial Resources	December 31, 2022	
1. Actuarial Value of Assets	\$	13,179,038,012
2. Present Value of Future Contributions		
a. Expected Member Contributions	\$	930,247,447
b. Employer Normal Cost		591,435,575
c. Total	\$	1,521,683,022
3. Unfunded Actuarial Accrued Liability/(Reserve)	\$	6,650,235,845
4. Total Assets (1. + 2.c. + 3.)	\$	21,350,956,879

Benefit Obligations	December 31, 2022	
1. Present Value of Future Benefits		
a. Active Members	\$	8,350,055,494
b. Retirees and Beneficiaries		12,263,217,666
c. Inactive Members		737,683,719
d. Total	\$	21,350,956,879



SECTION I – VALUATION RESULTS

EXHIBIT 1.4

SOLVENCY TEST

Year Ended	Aggregate Accrued Liability for:				Portion of Accrued Liabilities Covered by Assets		
	(1)	(2)	(3)	(4)	(1)	(2)	(3)
	Active and Inactive Members Accumulated Contributions	Members Currently Receiving Benefits	Active and Inactive Members Employer Portion	Actuarial Value of Assets	Min[(4)/(1),1]	Min[((4)-(1))/(2),1]	Max[((4)-(1)-(2))/(3),0]
December 31, 2013	\$ 1,854,155,647	\$ 7,373,618,621	\$ 5,584,313,409	\$ 8,381,444,287	100.00%	88.52%	0.00%
December 31, 2014	1,897,951,260	7,849,157,912	6,091,016,420	8,810,509,070	100.00%	88.07%	0.00%
December 31, 2015	1,914,569,837	8,459,921,556	5,857,694,141	8,991,018,918	100.00%	83.65%	0.00%
December 31, 2016	1,967,965,799	8,905,256,403	5,853,234,906	9,488,223,349	100.00%	84.45%	0.00%
December 31, 2017	2,001,714,112	9,168,982,900	5,718,802,650	10,148,203,833	100.00%	88.85%	0.00%
December 31, 2018	2,020,570,657	9,507,732,944	5,775,470,232	10,512,756,514	100.00%	89.32%	0.00%
December 31, 2019	2,016,337,278	10,189,247,527	5,744,079,001	10,983,364,279	100.00%	88.00%	0.00%
December 31, 2020	2,013,381,600	10,706,683,351	5,700,957,859	11,765,568,459	100.00%	91.09%	0.00%
December 31, 2021	1,992,402,320	11,740,777,143	5,358,178,357	12,822,498,767	100.00%	92.24%	0.00%
December 31, 2022	2,005,650,627	12,263,217,666	5,560,405,564	13,179,038,012	100.00%	91.11%	0.00%



SECTION I – VALUATION RESULTS

EXHIBIT 1.5

RECONCILIATION OF CHANGE IN UNFUNDED ACTUARIAL LIABILITY

Development of Unfunded Actuarial Liability	
1. Unfunded Actuarial Accrued Liability as of December 31, 2021	\$ 6,268,859,053
2. Total Normal Cost Paid During 2022	221,070,808
3. Interest on 1. and 2.	446,426,748
4. Employer Contribution Requirement of Normal Cost Plus Interest on Unfunded Liability for Period January 1, 2022 to December 31, 2022	\$ 667,497,556
5. Actual Total Contribution for the Year*	704,434,190
6. Interest on 5.	24,238,202
7. Decrease in Unfunded Liability Due to Employer Contribution Plus Interest Being More Than Normal Cost Plus Interest on Unfunded Liability (4. - (5.+6.))	\$ (61,174,836)
8. Increase/(Decrease) in Unfunded Liability Due to:	
a. Investment Return Lower/(Higher) Than Assumed	\$ 131,986,606
b. Salary Increases Higher/(Lower) Than Assumed	152,634,570
c. Assumption changes	34,286,546
d. Plan changes	-
e. Other Sources	123,643,906
9. Net Increase/(Decrease) in Unfunded Liability for the Year (7. + 8a. + 8b. + 8c. + 8d. + 8e.)	\$ 381,376,792
10. Unfunded Actuarial Accrued Liability as of December 31, 2022 (1. + 9.)	\$ 6,650,235,845

* Includes an additional \$322.2 Million supplemental contribution from the employer



SECTION I – VALUATION RESULTS

EXHIBIT 1.6

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, 2013	\$ 14,812,087,677	\$ 8,381,444,287	56.59%	\$ 6,430,643,390
December 31, 2014	15,318,790,688	8,810,509,070	57.51%	6,508,281,618
December 31, 2015	16,232,185,534	8,991,018,918	55.39%	7,241,166,616
December 31, 2016	16,726,457,108	9,488,223,349	56.73%	7,238,233,759
December 31, 2017	16,889,499,662	10,148,203,833	60.09%	6,741,295,829
December 31, 2018	17,303,773,833	10,512,756,514	60.75%	6,791,017,319
December 31, 2019	17,949,663,806	10,983,364,279	61.19%	6,966,299,527
December 31, 2020	18,421,022,810	11,765,568,459	63.87%	6,655,454,351
December 31, 2021	19,091,357,820	12,822,498,767	67.16%	6,268,859,053
December 31, 2022	19,829,273,857	13,179,038,012	66.46%	6,650,235,845



SECTION II – PLAN ASSETS

EXHIBIT 2.1

SUMMARY OF FAIR VALUE OF ASSETS

Asset Category	Fair Value as of <u>December 31, 2022</u>		Fair Value as of <u>December 31, 2021</u>	
	Amount	%	Amount	%
1. Short-Term Investments	\$ 234,771,111	1.84%	\$ 357,784,424	2.39%
2. Investments at Fair Value				
a. U.S. and International Equities	\$ 6,034,643,952	47.25%	\$ 7,635,101,620	50.96%
b. U.S. Government and Government Agency Obligations	1,469,836,010	11.51%	1,473,893,826	9.84%
c. Corporate Bonds	1,124,132,728	8.80%	1,451,709,977	9.69%
d. Collective International Equity Fund	83,714,867	0.66%	98,052,511	0.65%
e. Commingled Fixed Income Fund	31,396,051	0.25%	36,954,580	0.25%
f. Exchange Traded Funds	13,203,898	0.10%	9,662,015	0.06%
g. Private Equities	873,806,502	6.84%	1,342,235,797	8.96%
h. Hedge Funds	803,501,480	6.29%	814,964,951	5.44%
i. Real Estate	<u>1,120,026,750</u>	8.77%	<u>968,510,214</u>	6.46%
j. Total	\$ 11,554,262,238	90.47%	\$ 13,831,085,491	92.32%
3. Collateral Held for Securities Lending	\$ 981,850,793	7.69%	\$ 793,388,746	5.30%
4. Total Assets (1. + 2.j + 3.)	\$ 12,770,884,142	100.00%	\$ 14,982,258,661	100.00%
5. Receivables				
a. Interest and Dividends	\$ 42,949,437		\$ 38,777,422	
b. Investments Sold	181,279,930		129,946,647	
c. Other Receivables	<u>238,484,261</u>		<u>231,710,103</u>	
d. Total	\$ 462,713,628		\$ 400,434,172	
6. Payables				
a. Investments Purchased	\$ 213,405,731		\$ 277,698,246	
b. Securities Lending Collateral	981,850,793		793,388,746	
c. Other Payables	<u>19,611,418</u>		<u>30,078,279</u>	
d. Total	\$ 1,214,867,942		\$ 1,101,165,271	
7. Net Position for Pension Benefits [4. + 5.d – 6.d.]	\$ 12,018,729,828		\$ 14,281,527,562	



SECTION II – PLAN ASSETS

EXHIBIT 2.2

CHANGES IN FAIR VALUE OF ASSETS

Transactions	December 31, 2022	December 31, 2021
Additions		
1. Contributions		
a. Contributions from Employers	\$ 525,233,835	\$ 541,300,175
b. Contributions from Plan Members	<u>136,293,311</u>	<u>133,368,302</u>
c. Total	\$ 661,527,146	\$ 674,668,477
2. Net Investment Income		
a. Interest and Dividends	\$ 225,315,914	\$ 219,906,794
b. Net Appreciation	(2,054,246,372)	1,779,077,843
c. Net Securities Lending Income	<u>2,342,172</u>	<u>2,655,176</u>
d. Total	\$ (1,826,588,286)	\$ 2,001,639,813
e. Less Investment Expense	<u>40,766,793</u>	<u>40,720,172</u>
f. Net Investment Income (Loss)	\$ (1,867,355,079)	\$ 1,960,919,641
g. Miscellaneous	42,898,511	39,562,675
h. Employee Transfers	8,533	(42,007)
3. Total Additions (1c. + 2f. + 2g. + 2.h)	\$ (1,162,920,889)	\$ 2,675,108,786
Deductions		
4. Benefits and Expenses		
a. Retirement Benefits	\$ 1,061,568,488	\$ 1,001,104,106
b. Refund of Contributions and Death Benefit	33,588,190	36,979,751
c. Administrative Expenses	<u>4,720,167</u>	<u>5,107,805</u>
5. Total Deductions	\$ 1,099,876,845	\$ 1,043,191,662
6. Net Increase (3. - 5.)	\$ (2,262,797,734)	\$ 1,631,917,124
Net Position Held in Trust for Pension Benefits		
a. Beginning of Year	\$ 14,281,527,562	\$ 12,649,610,438
b. End of Year	\$ 12,018,729,828	\$ 14,281,527,562



SECTION II – PLAN ASSETS

EXHIBIT 2.3

DETERMINATION OF ACTUARIAL VALUE OF ASSETS

Development of Actuarial Value of Assets				Amount
1. Actuarial Value of Assets as of December 31, 2021				\$ 12,822,498,767
2. Unrecognized Return as of December 31, 2021				1,459,028,795
3. Fair Value of Assets as of December 31, 2021 (1. + 2.)				\$ 14,281,527,562
4. Contributions				
a. Member (includes purchased service)				\$ 136,293,311
b. Employer				525,233,835
c. Miscellaneous contributions				42,907,044
d. Total				\$ 704,434,190
5. Distributions				
a. Benefit payments				\$ 1,061,568,488
b. Refund of contributions				33,588,190
c. Administrative expenses				4,720,167
d. Total				\$ 1,099,876,845
6. Expected Return at 7.00% on				
a. Item 1.				\$ 897,574,914
b. Item 2.				102,132,016
c. Item 4.d.				24,238,203
d. Item 5.d.				37,844,610
e. Total (a. + b. + c. - d.)				\$ 986,100,523
7. Actual Return on Fair Value for Fiscal Year, net of Investment Expenses				\$ (1,867,355,079)
8. Return to be Spread for Fiscal year (7. - 6e.)*				\$ (2,853,455,602)
9. Total Fair Value of Assets as of December 31, 2022				\$ 12,018,729,828
10. Return to be Spread				
				Unrecognized
	Fiscal Year	Return to be Spread	Unrecognized Percent	Return
	2022	\$ (2,853,455,602)	80.00%	\$ (2,282,764,481)
	2021	1,055,540,559	60.00%	633,324,335
	2020	643,290,453	40.00%	257,316,181
	2019	1,159,078,907	20.00%	231,815,781
	2018	(1,175,047,434)	0.00%	-
				\$ (1,160,308,184)
11. Actuarial Value of Assets (9. - 10.)				\$ 13,179,038,012
12. Recognized rate of return for the Year on Actuarial Value of Assets				5.96%
13. Rate of Return for the Year on Market Value of Assets (reported by Cook County - net of Inv. expenses)				-12.90%

* Annual Return to be Spread calculation is based on assumed 7.00% investment return which includes an assumption that all expenses and revenues are paid mid-year on average



EXHIBIT 3.1

MEMBERSHIP PROJECTION

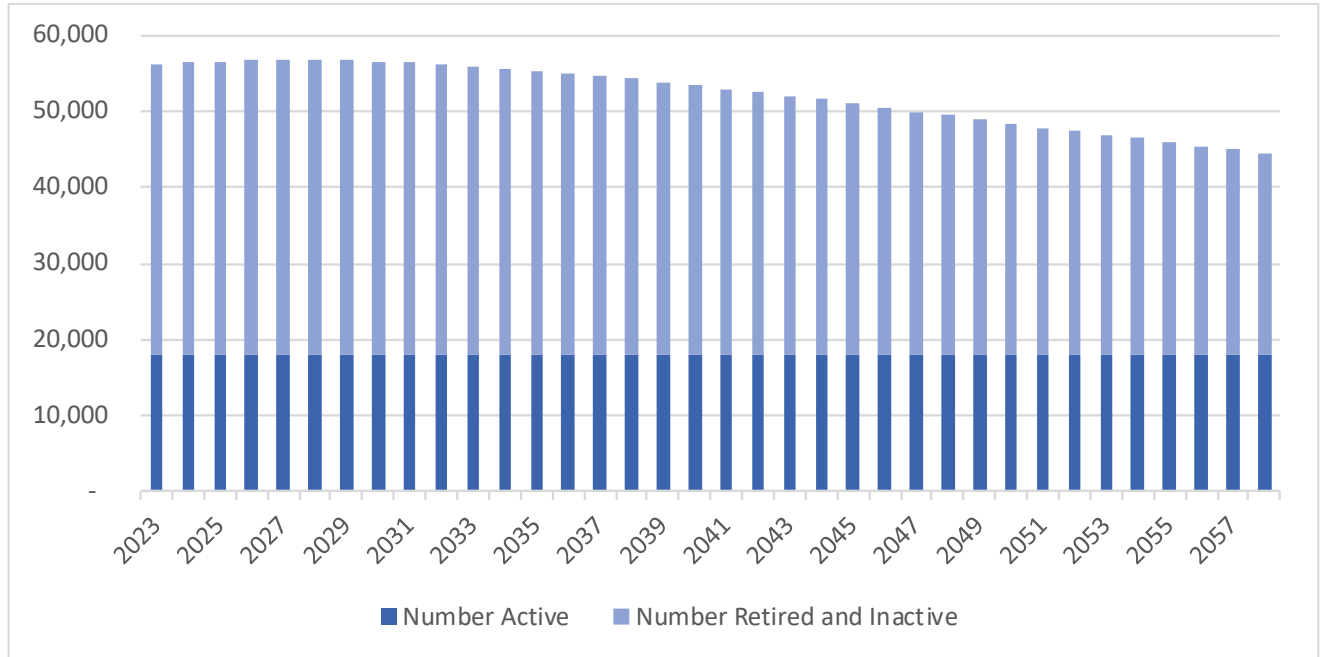




EXHIBIT 3.2

PAYROLL PROJECTION
(In Millions)

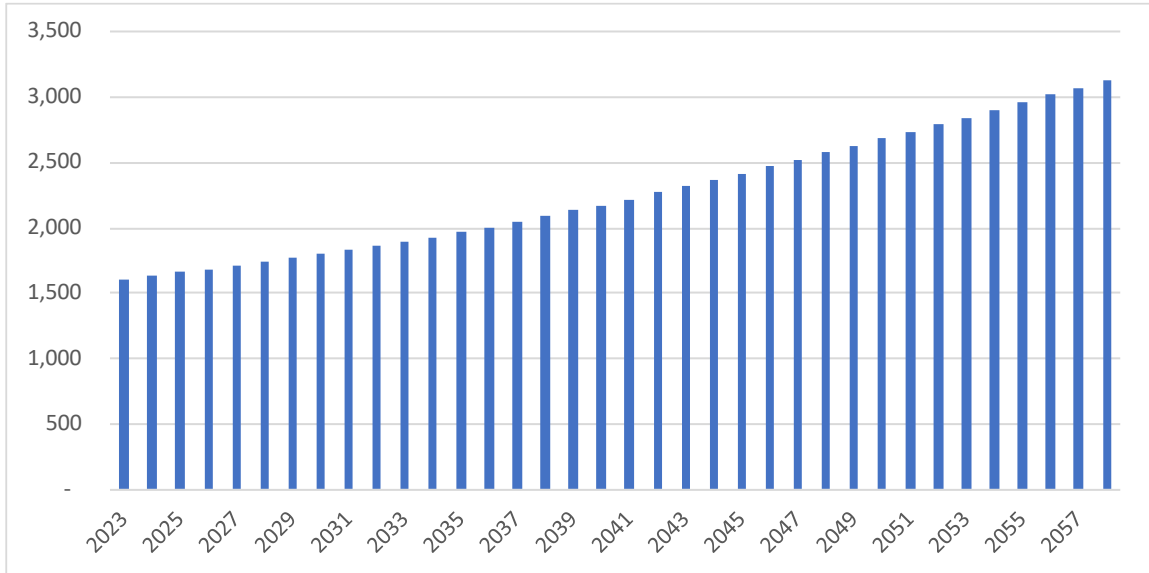




EXHIBIT 3.3

PROJECTION OF EMPLOYER CONTRIBUTION AMOUNTS
(In Millions)

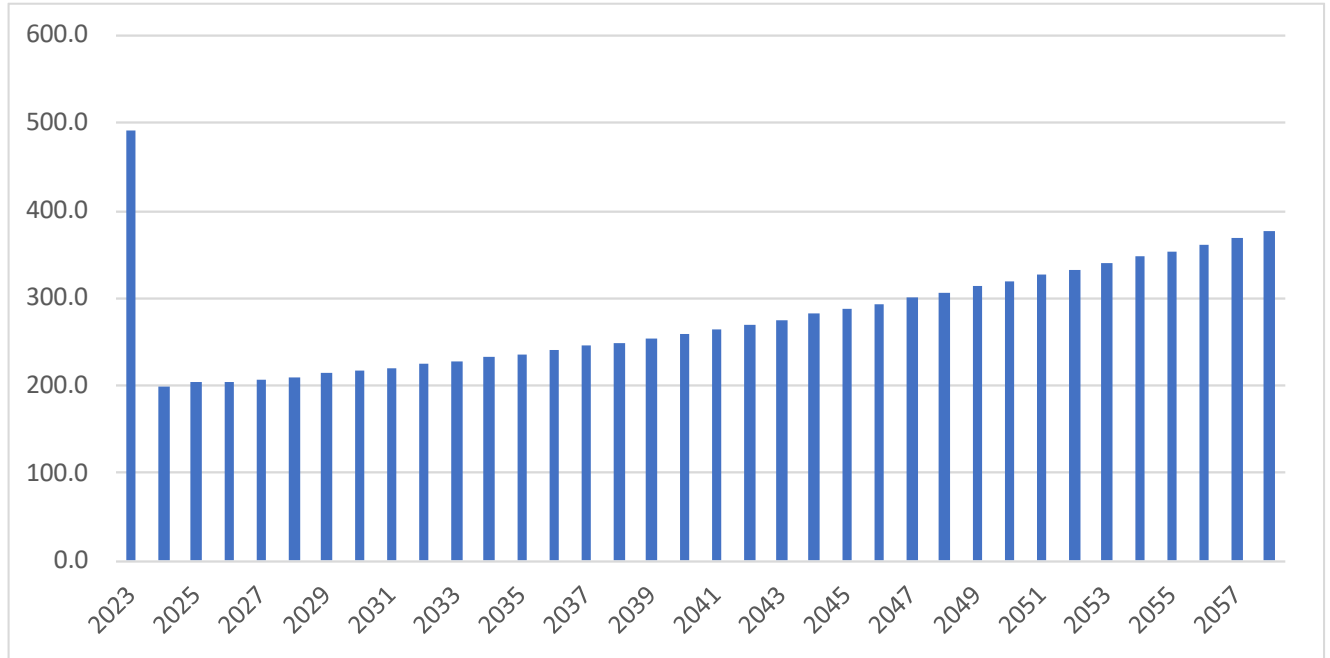




EXHIBIT 3.4

PROJECTION OF FUNDED STATUS





SECTION III – PROJECTIONS

EXHIBIT 3.5

TABLE OF PROJECTED ACTUARIAL RESULTS

Calendar Year	Beginning of Year					Cashflows during Calendar Year				
	Payroll	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio	Total Payout	Employee Contributions	County Contribution Based on Tax Levy*	Total as % of payroll	
2023	1,610.9	19,829	13,179	6,650	66.5%	1,080.3	137.2	492.1	30.55%	
2024	1,634.4	20,294	13,498	6,796	66.5%	1,110.9	138.9	199.2	12.19%	
2025	1,658.5	20,743	13,270	7,473	64.0%	1,160.9	141.0	203.6	12.28%	
2026	1,682.9	21,171	12,865	8,306	60.8%	1,214.6	143.0	205.0	12.18%	
2027	1,709.1	21,574	12,190	9,384	56.5%	1,268.0	145.3	207.5	12.14%	
2028	1,736.8	21,949	12,023	9,925	54.8%	1,321.1	147.6	210.6	12.13%	
2029	1,765.5	22,295	11,792	10,503	52.9%	1,372.7	150.1	213.7	12.10%	
2030	1,795.3	22,612	11,492	11,120	50.8%	1,424.9	152.6	217.0	12.09%	
2031	1,826.8	22,898	11,119	11,779	48.6%	1,475.3	155.3	220.5	12.07%	
2032	1,859.9	23,151	10,670	12,482	46.1%	1,523.1	158.1	224.2	12.05%	
2033	1,895.2	23,374	10,142	13,232	43.4%	1,569.2	161.1	228.0	12.03%	
2034	1,931.3	23,566	9,532	14,034	40.4%	1,611.2	164.2	232.0	12.01%	
2035	1,968.5	23,730	8,841	14,889	37.3%	1,650.9	167.3	236.2	12.00%	
2036	2,007.0	23,867	8,064	15,803	33.8%	1,688.1	170.6	240.6	11.99%	
2037	2,046.6	23,978	7,199	16,779	30.0%	1,722.0	174.0	245.2	11.98%	
2038	2,087.9	24,065	6,244	17,821	25.9%	1,751.5	177.5	249.9	11.97%	
2039	2,130.7	24,131	5,198	18,933	21.5%	1,777.4	181.1	254.8	11.96%	
2040	2,174.9	24,179	4,057	20,122	16.8%	1,799.2	184.9	259.9	11.95%	
2041	2,220.3	24,212	2,821	21,391	11.7%	1,817.1	188.7	265.1	11.94%	
2042	2,267.4	24,233	1,486	22,746	6.1%	1,829.9	192.7	270.5	11.93%	
2043	2,316.0	24,247	52	24,195	0.2%	1,838.1	196.9	276.2	11.92%	
2044	2,366.1	24,258	(1,484)	25,742	-6.1%	1,842.6	201.1	281.9	11.91%	
2045	2,417.2	24,272	(3,124)	27,396	-12.9%	1,842.7	205.5	287.9	11.91%	
2046	2,469.0	24,292	(4,870)	29,163	-20.0%	1,839.7	209.9	294.1	11.91%	
2047	2,521.1	24,324	(6,727)	31,051	-27.7%	1,834.1	214.3	300.4	11.92%	
2048	2,573.8	24,369	(8,701)	33,069	-35.7%	1,825.9	218.8	306.9	11.92%	
2049	2,627.4	24,432	(10,795)	35,227	-44.2%	1,816.2	223.3	313.5	11.93%	
2050	2,681.9	24,515	(13,019)	37,534	-53.1%	1,805.1	228.0	320.1	11.94%	
2051	2,736.4	24,622	(15,379)	40,001	-62.5%	1,792.9	232.6	326.8	11.94%	
2052	2,791.5	24,754	(17,884)	42,638	-72.2%	1,781.4	237.3	333.6	11.95%	
2053	2,846.7	24,913	(20,546)	45,459	-82.5%	1,768.6	242.0	340.5	11.96%	
2054	2,903.1	25,102	(23,374)	48,477	-93.1%	1,756.2	246.8	347.5	11.97%	
2055	2,959.9	25,323	(26,381)	51,704	-104.2%	1,744.2	251.6	354.4	11.97%	
2056	3,016.4	25,576	(29,581)	55,157	-115.7%	1,732.2	256.4	361.5	11.98%	
2057	3,073.1	25,865	(32,986)	58,851	-127.5%	1,720.7	261.2	368.6	11.99%	
2058	3,130.5	26,190	(36,613)	62,803	-139.8%	1,709.8	266.1	375.8	12.01%	

* 2023 County Contribution also includes a \$291.7M Supplemental contribution.

The estimates above are based upon assumptions regarding future events, which may or may not materialize.

The basis for this projection is the December 31, 2022 Actuarial Valuation performed by Cavanaugh Macdonald.



SECTION IV

RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In November, 2018, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the December 31, 2018 actuarial valuation for CEABF.

A typical retirement fund faces many different risks, but the greatest risk is the inability to make benefit payments when due. If fund assets are depleted, benefits may not be paid which could create legal and litigation risk or the fund could become “pay as you go”. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk is translated into uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given fund can have a significant impact – good or bad – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. As noted earlier in this report, the current funding mechanism is insufficient to meet the needs of the CEABF. We project that the CEABF will become insolvent in 2043.



SECTION IV

RISK CONSIDERATIONS

In an actuarially funded plan, the most significant risk factor is investment return because of the volatility of returns and the size of fund assets compared to payroll (see Exhibit 4.1). A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is an expected result given the underlying capital market assumptions and the fund’s asset allocation.

A key demographic risk for all retirement systems is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, which would also be significant, although more easily absorbed. While these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

The following exhibits summarize some historical information that helps indicate how certain key risk metrics have changed over time.



SECTION IV—RISK CONSIDERATIONS

EXHIBIT 4.1

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the Fund is funded. The size of the fund assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the Fund. The higher this ratio, the more sensitive a fund's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio
12/31/2013	\$ 8,927,366,656	\$ 1,484,269,715	6.01
12/31/2014	9,068,398,780	1,514,550,023	5.99
12/31/2015	8,643,044,275	1,572,417,298	5.50
12/31/2016	9,115,657,870	1,580,251,254	5.77
12/31/2017	10,407,883,443	1,567,480,401	6.64
12/31/2018	9,862,023,782	1,533,721,507	6.43
12/31/2019	11,490,959,220	1,553,498,503	7.40
12/31/2020	12,649,610,438	1,532,744,306	8.25
12/31/2021	14,281,527,562	1,520,619,855	9.39
12/31/2022	12,018,729,828	1,577,093,973	7.62

The assets at December 31, 2022 are 762% of payroll so underperforming the investment return assumption by 1% (i.e., earn 6.00% for one year) is equivalent to 7.62% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAL, this illustrates the risk associated with volatile investment returns.



SECTION IV– RISK CONSIDERATIONS

EXHIBIT 4.2

HISTORICAL CASH FLOWS

Funds with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the Fund has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that causes significant concerns.

Year Ended	Market Value of Assets	Contributions	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
12/31/2013	\$ 8,927,366,656	\$ 355,844,654	\$ 667,570,256	\$(311,725,602)	-3.49%
12/31/2014	9,068,398,780	362,704,794	709,307,321	(346,602,527)	-3.82%
12/31/2015	8,643,044,275	369,252,939	771,939,931	(402,686,992)	-4.66%
12/31/2016	9,115,657,870	655,247,511	810,748,989	(155,501,478)	-1.71%
12/31/2017	10,407,883,443	715,994,205	823,347,890	(107,353,685)	-1.03%
12/31/2018	9,862,023,782	743,525,984	865,324,266	(121,798,282)	-1.24%
12/31/2019	11,490,959,220	689,961,286	927,861,246	(237,899,960)	-2.07%
12/31/2020	12,649,610,438	675,567,121	981,127,945	(305,560,824)	-2.42%
12/31/2021	14,281,527,562	709,721,351	1,038,083,857	(328,362,506)	-2.30%
12/31/2022	12,018,729,828	699,487,709	1,095,156,678	(395,668,969)	-3.29%



SECTION IV– RISK CONSIDERATIONS

EXHIBIT 4.3

LIABILITY MATURITY MEASUREMENTS

Most public sector retirement systems have been in operation for many years. As a result, they have aging fund populations indicated by an increasing ratio of retirees to active members and a growing percentage of retiree liability. The retirement of the remaining baby boomers over the next decade is expected to further exacerbate the aging of the retirement system population. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the Fund since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs.

Projections provide the most effective way of analyzing the impact of these changes on future funding measures, but studying several key metrics from the valuation can also provide some valuable insight.

Valuation Date	Retiree Liability	Total Actuarial Liability	Retiree Percentage	Covered Payroll	Ratio
12/31/2013	\$ 7,373,618,621	\$ 14,812,087,677	49.8%	\$ 1,484,269,715	9.98
12/31/2014	7,849,157,912	15,318,790,688	51.2%	1,514,550,023	10.11
12/31/2015	8,459,921,556	16,232,185,534	52.1%	1,572,417,298	10.32
12/31/2016	8,905,256,403	16,726,457,108	53.2%	1,580,251,254	10.58
12/31/2017	9,168,982,900	16,889,499,662	54.3%	1,567,480,401	10.77
12/31/2018	9,507,732,944	17,303,773,833	54.9%	1,533,721,507	11.28
12/31/2019	10,189,247,527	17,949,663,806	56.8%	1,553,498,503	11.55
12/31/2020	10,706,683,351	18,421,022,810	58.1%	1,532,744,306	12.02
12/31/2021	11,740,777,143	19,091,357,820	61.5%	1,520,619,855	12.55
12/31/2022	12,263,217,666	19,829,273,857	61.8%	1,577,093,973	12.57



EXHIBIT 5.1

SUMMARY OF MEMBERS INCLUDED IN THE VALUATION

	December 31, 2022	December 31, 2021
Active Members (includes 173 disabled in 2022 and 194 in 2021)		
(1) Number	18,107	18,320
(2) Average Age	47.9	47.8
(3) Average Credited Service	13.5	13.6
(4) Average Annual Earnings (limited for Pension purposes)	\$87,099	\$83,003
Retirees and Beneficiaries		
(1) Number	20,138	19,856
(2) Average Age	72.7	72.5
(3) Average Monthly Pension Benefit	\$4,114	\$3,974
Inactive Members (not refunded contributions or commenced benefits)		
(1) Number	18,019	17,313
(2) Average Age	50.5	50.0
Total Number of Members	56,264	55,489



SECTION V— MEMBER DATA

EXHIBIT 5.2

AGE AND SERVICE DISTRIBUTION OF ACTIVE MEMBERS
(as of December 31, 2022)

Total

Age		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	Total
24 & Under	Number	177	-	-	-	-	-	-	-	-	177
	Average Salary	\$57,512	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$57,512
25-29	Number	1,102	51	-	-	-	-	-	-	-	1,153
	Average Salary	\$60,812	\$67,410	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$61,104
30-34	Number	1,112	526	32	-	-	-	-	-	-	1,670
	Average Salary	\$67,801	\$78,919	\$82,362	\$0	\$0	\$0	\$0	\$0	\$0	\$71,582
35-39	Number	742	667	334	99	1	-	-	-	-	1,843
	Average Salary	\$75,530	\$84,808	\$88,655	\$82,827	\$55,977	\$0	\$0	\$0	\$0	\$81,648
40-44	Number	567	516	422	566	159	8	-	-	-	2,238
	Average Salary	\$79,177	\$87,960	\$100,644	\$90,628	\$81,925	\$87,719	\$0	\$0	\$0	\$88,372
45-49	Number	453	446	304	607	628	213	6	-	-	2,657
	Average Salary	\$81,572	\$89,449	\$102,790	\$97,209	\$94,139	\$86,445	\$76,241	\$0	\$0	\$92,243
50-54	Number	406	362	281	469	664	795	147	2	-	3,126
	Average Salary	\$81,722	\$92,832	\$99,438	\$103,887	\$98,494	\$97,544	\$82,092	\$123,906	\$0	\$95,557
55-59	Number	324	252	197	315	489	570	258	35	-	2,440
	Average Salary	\$81,214	\$93,726	\$93,822	\$94,739	\$100,392	\$101,029	\$90,477	\$80,351	\$0	\$94,710
60-64	Number	206	219	160	212	332	307	180	69	13	1,698
	Average Salary	\$83,043	\$89,140	\$88,485	\$89,991	\$95,864	\$97,020	\$94,093	\$85,577	\$70,370	\$91,421
65-69	Number	73	104	78	122	132	132	77	36	15	769
	Average Salary	\$75,868	\$93,351	\$86,363	\$87,724	\$92,862	\$91,188	\$83,749	\$91,971	\$113,637	\$89,004
70 & Up	Number	33	26	28	56	69	54	33	18	19	336
	Average Salary	\$79,275	\$106,842	\$94,868	\$83,538	\$93,670	\$81,510	\$86,389	\$85,990	\$110,750	\$89,572
TOTAL	Number	5,195	3,169	1,836	2,446	2,474	2,079	701	160	47	18,107
	Average Salary	\$72,229	\$87,103	\$95,829	\$94,655	\$95,894	\$96,427	\$88,594	\$86,398	\$100,503	\$87,099

Salaries are limited to the dollar amount defined under Internal Revenue Code Section 401(a)(17) for affected Tier 1 members and to the paycap legislated for Tier 2 members. For fiscal year 2023, these amounts are \$330,000 and \$123,489, respectively.



SECTION V—MEMBER DATA

EXHIBIT 5.3

AGE AND SALARY DISTRIBUTION OF ACTIVE MEMBERS
(as of December 31, 2022)

Age	Number	Annual Salaries	Average Annual Salary
Male			
Under 20	-	\$ -	\$ -
20-24	79	4,761,937	60,278
25-29	519	31,239,127	60,191
30-34	756	54,866,054	72,574
35-39	887	73,951,953	83,373
40-44	1,017	93,330,267	91,770
45-49	1,212	116,071,038	95,768
50-54	1,424	141,295,612	99,224
55-59	1,029	104,234,833	101,297
60-64	672	65,868,829	98,019
65-69	323	31,434,481	97,320
70 and over	144	14,630,177	101,598
Total Male	8,062	\$ 731,684,308	\$ 90,757
Female			
Under 20	-	\$ -	\$ -
20-24	98	5,417,668	55,282
25-29	634	39,213,599	61,851
30-34	914	64,675,489	70,761
35-39	956	76,524,866	80,047
40-44	1,221	104,445,511	85,541
45-49	1,445	129,019,456	89,287
50-54	1,702	157,416,765	92,489
55-59	1,411	126,856,760	89,906
60-64	1,026	89,363,962	87,099
65-69	446	37,009,646	82,981
70 and over	192	15,465,943	80,552
Total Female	10,045	\$ 845,409,665	\$ 84,162
Male and Female	18,107	\$ 1,577,093,973	\$ 87,099



SECTION V—MEMBER DATA

EXHIBIT 5.4

SCHEDULE OF ACTIVE MEMBER DATA

Valuation Date	Number	Annual Earnings	Average Annual Earnings	Percent Increase/(Decrease) in Average Earnings
December 31, 2013	21,287	\$ 1,484,269,715	\$ 69,727	1.20%
December 31, 2014	21,656	1,514,550,023	69,937	0.30%
December 31, 2015	21,596	1,572,417,298	72,811	4.10%
December 31, 2016	20,969	1,580,251,254	75,361	3.50%
December 31, 2017	20,349	1,567,480,401	77,030	2.20%
December 31, 2018	19,671	1,533,721,507	77,969	1.20%
December 31, 2019	19,551	1,553,498,503	79,459	1.90%
December 31, 2020	19,102	1,532,744,306	80,240	1.00%
December 31, 2021	18,320	1,520,619,855	83,003	3.40%
December 31, 2022	18,107	1,577,093,973	87,099	4.90%



SECTION V— MEMBER DATA

EXHIBIT 5.5

MEMBER DATA RECONCILIATION

	Active Members	Inactive Members	Retired Members	Beneficiaries	Total
As of December 31, 2021	18,320	17,313	16,945	2,910	55,488
Changes in Status					
a) Retirement	(528)	(284)	812	-	-
b) Death With Beneficiary	(16)	(16)	(133)	165	-
c) Death Without Beneficiary	-	-	(464)	(177)	(641)
d) Non-Vested Termination (Refund Paid)	(402)	(295)	-	-	(697)
e) Non-Vested Termination (Refund Eligible)	(877)	877	-	-	-
f) Vested Termination	(425)	425	-	-	-
g) Rehire	434	(414)	(2)	-	18
h) Miscellaneous/Child Beneficiaries	-	413	5	77	495
Total Changes in Status	(1,814)	706	218	65	(825)
New Entrants During the Year	1,601	-	-	-	1,601
Net Change	(213)	706	218	65	776
As of December 31, 2022	18,107	18,019	17,163	2,975	56,264



SECTION V—MEMBER DATA

EXHIBIT 5.6

RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS

Year Ended	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>Rolls – End of Year</u>		Average Annual	% Increase in
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	Benefits	Average Annual Benefits
December 31, 2013	992	\$ 52,564,737	489	\$ 10,006,848	16,677	\$ 566,785,974	\$ 33,986	4.90%
December 31, 2014	929	52,208,075	530	11,628,617	17,076	607,365,432	35,568	4.70%
December 31, 2015	1,323	69,890,199	802	22,262,895	17,597	654,992,736	37,222	4.60%
December 31, 2016	968	58,252,392	656	18,067,979	17,909	695,177,149	38,817	4.30%
December 31, 2017	902	57,971,733	594	16,538,820	18,217	736,610,062	40,435	4.20%
December 31, 2018	1,109	68,372,858	724	22,268,886	18,602	782,714,034	42,077	4.10%
December 31, 2019	1,223	78,654,100	682	20,981,568	19,143	840,386,566	43,900	4.30%
December 31, 2020	1,142	78,187,840	843	29,427,349	19,442	889,147,057	45,733	4.20%
December 31, 2021	1,210	87,049,235	796	29,293,796	19,856	946,902,496	47,688	4.30%
December 31, 2022	1,058	77,347,913	776	30,070,309	20,138	994,180,100	49,368	3.50%



EXHIBIT 5.7

SCHEDULE OF RETIRED MEMBER DATA

Valuation Date	Number	Annual Benefit Payments	Average Annual Benefit Payments
December 31, 2013	16,677	\$ 566,785,974	\$ 33,986
December 31, 2014	17,076	607,365,432	35,568
December 31, 2015	17,597	654,992,736	37,222
December 31, 2016	17,909	695,177,149	38,817
December 31, 2017	18,217	736,610,062	40,435
December 31, 2018	18,602	782,714,034	42,077
December 31, 2019	19,143	840,386,566	43,900
December 31, 2020	19,442	889,147,057	45,733
December 31, 2021	19,856	946,902,496	47,688
December 31, 2022	20,138	994,180,100	49,368



SECTION V—MEMBER DATA

EXHIBIT 5.8

SCHEDULE OF RETIRED MEMBERS BY TYPE OF BENEFIT AND PAYMENT FORM

Amount of Monthly Pension Benefit	Number of Recipients	Type of Pension Benefit		Benefit Payment Form		
		1	2	1	2	3
\$ 1 – 500	1,392	978	414	868	477	47
501 – 1,000	1,568	1,022	546	1,006	514	48
1,001 – 1,500	1,367	951	416	905	461	1
1,501 – 2,000	1,255	933	322	833	421	1
2,001 – 2,500	1,210	963	247	762	448	0
2,501 – 3,000	1,256	1,024	232	793	463	0
3,001 – 3,500	1,401	1,200	201	862	539	0
3,501 – 4,000	1,357	1,151	206	860	497	0
4,001 – 4,500	1,298	1,179	119	792	506	0
4,501 – 5,000	1,210	1,102	108	684	526	0
5,001 – 5,500	1,160	1,108	52	597	563	0
5,501 – 6,000	1,125	1,083	42	521	604	0
6,001 – 6,500	942	926	16	412	530	0
6,501 – 7,000	680	667	13	278	402	0
7,001 – 7,500	764	760	4	302	462	0
7,501 – 8,000	592	586	6	227	365	0
8,001 – 8,500	386	382	4	170	216	0
8,501 – 9,000	270	267	3	107	163	0
9,001 – 9,500	196	195	1	74	122	0
9,501 – 10,000	156	153	3	46	110	0
10,001 – 10,500	104	100	4	44	60	0
10,501 – 11,000	50	50	0	13	37	0
11,001 – 11,500	29	26	3	9	20	0
11,501 – 12,000	39	36	3	14	25	0
12,001 – 12,500	22	21	1	3	19	0
12,501 – 13,000	15	13	2	5	10	0
13,001 – 13,500	21	20	1	4	17	0
13,501 – 14,000	17	14	3	6	11	0
14,001 – 14,500	24	24	0	7	17	0
14,501 – 15,000	19	19	0	7	12	0
Over \$15,000	213	210	3	56	157	0
Totals	20,138	17,163	2,975	11,267	8,774	97

Type of Pension Benefit

- 1. Regular Retirement
- 2. Survivor Payment

Form of Benefit

- 1. Whole Life Annuity
- 2. Joint and Contingent Annuity
- 3. Temporary Annuity



EXHIBIT 5.9

SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES

	December 31, 2022	December 31, 2021
Retired		
(1) Number, Fiscal Year Start	16,945	16,572
(2) Net Change	<u>218</u>	<u>373</u>
(3) Number, Fiscal Year End	17,163	16,945
(4) Average Current Age	72.4	72.2
(5) Average Monthly Pension Benefit	\$4,456	\$4,305
Beneficiaries		
(1) Number, Fiscal Year Start	2,910	2,870
(2) Net Change	<u>65</u>	<u>40</u>
(3) Number, Fiscal Year End	2,975	2,910
(4) Average Current Age	74.1	73.9
(5) Average Monthly Pension Benefit	\$2,141	\$2,045
Total		
(1) Number, Fiscal Year Start	19,855	19,442
(2) Net Change	<u>283</u>	<u>413</u>
(3) Number, Fiscal Year End	20,138	19,855
(4) Average Current Age	72.7	72.5
(5) Average Monthly Pension Benefit	\$4,114	\$3,974



EXHIBIT 5.10

SCHEDULE OF BENEFIT PAYMENTS

Attained Age	Number	Annual Payments
< 30	89	\$ 570,949
30-34	1	1,536
35-39	2	7,585
40-44	12	133,660
45-49	38	438,699
50-54	281	13,593,435
55-59	1,179	64,832,207
60-64	2,481	143,956,231
65-69	3,525	195,028,276
70-74	3,911	194,718,416
75	797	39,908,747
76	871	41,993,131
77	632	32,557,646
78	631	32,256,100
79	668	31,441,262
80	617	28,495,674
81	560	24,742,112
82	499	22,582,169
83	456	19,092,078
84	446	18,569,818
85	391	14,909,487
86	338	13,671,200
87	303	11,464,016
88	243	9,061,428
89	228	8,577,657
90	188	7,572,264
91	161	5,829,895
92	138	4,274,366
93	113	4,250,892
94	108	3,378,822
95	65	1,827,906
96	46	1,266,868
97	37	984,511
98	30	775,975
99	22	526,927
100	14	371,199
101	7	237,708
102	5	162,133
103	2	87,176
104	1	9,339
105	1	3,446
106	1	17,155
Total	20,138	\$ 994,180,100



**APPENDIX A
SUMMARY OF BENEFIT PROVISIONS**

Participant. A person employed by Cook County whose salary or wages is paid in whole or in part by the 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 (Tier 1). 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 (Tier 1).

Money Purchase Annuity (Tier 1). 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 (Tier 1). 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.



APPENDIX A
SUMMARY OF BENEFIT PROVISIONS
(continued)

Automatic Increase in Retirement Annuity (Tier 1). 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.

Optional Plan of Contributions and Benefits (Tier 1). 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 (Tier 1). 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 (Tier 1). 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 (Tier 1).

Money Purchase Annuity (Tier 1). The amount of annuity based on the accumulated salary deductions and County contributions for both the employee and the spouse.

Minimum Formula Annuity (Tier 1). 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



APPENDIX A
SUMMARY OF BENEFIT PROVISIONS
(continued)

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.

Surviving Spouse's Annuity - Death after Retirement (Tier 1). 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 (Tier 1). 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, her 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.



APPENDIX A
SUMMARY OF BENEFIT PROVISIONS
(continued)

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.

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.

Group Health Benefits. The CEABF may pay all or any portion of the premium for health insurance on behalf of each annuitant who participates in any of the CEABF's health care Plans. As of January 1, 2023, CEABF pays 44% of the total premium for all post-Medicare retiree annuitants and 44% of the total premium for all pre-Medicare retiree annuitants on the Choice plan, including the cost of family coverage, and 44% of the total premium for all post-Medicare survivor annuitants and 44% of the total premium for all pre-Medicare survivor annuitants on the Choice plan, including the cost of family coverage.

CEABF pays 44% of the total premium for all post-Medicare retiree annuitants and 44% of the total premium for all pre-Medicare retiree annuitants on the Choice Plus plan, including the cost of family coverage, and 44% of the total premium for all post-Medicare survivor annuitants and 44% of the total premium for all pre-Medicare survivor annuitants on the Choice Plus plan, including the cost of family coverage.

Refund to Employee Upon Withdrawal From Service. Upon withdrawal from service, an employee under the age of 55 (or age 62 if Tier 2), 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.



APPENDIX A
SUMMARY OF BENEFIT PROVISIONS
(continued)

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.

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 (Tier 2). 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.



APPENDIX A
SUMMARY OF BENEFIT PROVISIONS
(continued)

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.



**APPENDIX B
SUMMARY OF SUBSTANTIVE PLAN PROVISIONS FOR RETIREE HEALTH CARE**

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 if enrolled in the Plan prior to age 26). Eligible dependents that are between ages of 25 and 30 can be in the Plan if he/she is on active duty with the United States Armed Forces.

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 health plan administered by CEABF. 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
- United Healthcare Choice Plus

Medicare eligible retirees can choose from:

- United Healthcare Choice
- United Healthcare Choice Plus

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 (EGWP), with the same copays as the commercial prescription plan.



**APPENDIX B
SUMMARY OF SUBSTANTIVE PLAN PROVISIONS FOR RETIREE HEALTH CARE
(continued)**

PLAN FEATURES	UNITED HEALTHCARE		
	CHOICE	CHOICE PLUS IN-NETWORK	CHOICE PLUS OUT-OF-NETWORK
Annual Deductible	\$0	\$500 Individual/\$1,000 Family	\$1,000 Individual/\$2,000 Family
Out-of-Pocket Maximum	\$1,500 Individual/ \$3,000 Family	\$1,500 Individual/ \$3,000 Family	\$5,000 Individual/ \$10,000 Family
Annual Maximum	None	\$1,250,000	\$1,250,000
Doctors and Specialists			
Primary Care Visit	\$15 Copay	15% after deductible	40% after deductible
Specialist Visit	\$25 Copay	15% after deductible	40% after deductible
Physician Services			
Immunizations	Covered in full	Covered in full	40% after deductible
Preventive Care	Covered in full	Covered in full	40% after deductible
Hospital Services			
Inpatient Care	Covered in full	15% after deductible	40% after deductible
Room & Board	\$100 Copay (per admission)	15% after deductible	40% after deductible
Outpatient Services			
Outpatient Surgery	Covered in full	15% after deductible	40% after deductible
Diagnostic Tests and X-rays	Covered in full	15% after deductible	40% after deductible
Chemotherapy / Radiation Therapy	Covered in full	15% after deductible	40% after deductible
Speech, Physical & Occupational Therapy	\$15 Copay (60-combined visit limit per year)	15% after deductible (60-combined limit per year)	40% after deductible (60-combined limit per year)
Chiropractor	\$15 Copay (30 visit limit per year)	15% after deductible (30 visit limit per year)	40% after deductible (30 visit limit per year)
Behavioral Health Services			
Mental Health – Outpatient	\$15 Copay	15% after deductible	40% after deductible



SECTION VI – APPENDICES

PLAN FEATURES	UNITED HEALTHCARE		
	CHOICE	CHOICE PLUS IN-NETWORK	CHOICE PLUS OUT-OF-NETWORK
Mental Health – Inpatient	\$100 Copay	15% after deductible	40% after deductible
Substance Abuse – Outpatient	\$15 Copay	15% after deductible	40% after deductible
Substance Abuse – Inpatient	\$100 Copay	15% after deductible	40% after deductible
Emergency Services			
Emergency Room	\$100 Copay (waived if admitted)	\$100 Copay (waived if admitted) plus 15% after deductible	\$100 Copay (waived if admitted) plus 15% after deductible
Ambulance	Covered in full	15% after deductible	15% after deductible
Urgent Care Facility	\$40 Copay (in-network only)	15% after deductible	15% after deductible
Hospital Alternatives			
Skilled Nursing Facility	\$100 Copay (90 day limit per year)	15% after deductible (90 day limit per year)	40% (90 day limit per year)
Home Health Care	Covered in full (60 visit limit per year)	15% after deductible (60 visit limit per year)	40% after deductible (60 visit limit per year)
Prescription Plan (same for all):	30 Day Supply at Retail: \$10 Generic/\$45 Preferred Brand/\$70 Non-Preferred Brand – 90 Day Supply at CVS or Caremark Mail: \$20 Generic / \$90 Preferred Brand / \$140 Non-Preferred Brand – 90 Day Supply at non-CVS Pharmacy (Medicare Retirees Only): \$30 Generic / \$135 Preferred Brand / \$210 Non-Preferred Brand		
Coverage is identical between non-Medicare and Medicare supplement plans except where noted.			
Beginning January 1, 2021, prior authorization is required for certain health services, supplies and all hospital stays before care is received. Prior authorization does not apply to members enrolled in Medicare if the health care provider accepts Medicare and Medicare is the primary insurance.			



APPENDIX B
SUMMARY OF SUBSTANTIVE PLAN PROVISIONS FOR RETIREE HEALTH CARE
(continued)

Contributions.

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

	Participant		Fund	
	Choice	Choice Plus	Choice	Choice Plus
Retiree Annuitant w/o Medicare	56%	56%	44%	44%
Retiree Annuitant with Medicare	56%	56%	44%	44%
Survivor Annuitant w/o Medicare	56%	56%	44%	44%
Survivor Annuitant with Medicare	56%	56%	44%	44%

The following are the annual working rates effective January 1, 2023. These rates represent an estimated cost of self-insured coverage and include administrative expenses.

	Choice	Choice Plus
Single w/o Medicare	\$17,850	\$23,636
Two w/o Medicare	\$35,700	\$47,271
Single with Medicare	\$4,971	\$4,221
Two with Medicare	\$9,943	\$8,443



APPENDIX C
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.

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.



APPENDIX C
DESCRIPTION OF ACTUARIAL METHODS AND VALUATION PROCEDURES
(continued)

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.



APPENDIX D
SUMMARY OF ACTUARIAL ASSUMPTIONS FOR PENSION FUND

The actuarial assumptions used for the December 31, 2022 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 2017 through 2020. These assumptions were adopted by the Board as of December 31, 2021, based on the recommendation from the actuary.

Interest Rate. 7.00% per year, compounded annually.

Price Inflation Rate. 2.50% per year, compounded annually.

Real Wage Growth: 0.50% per year, compounded annually

General Wage Growth: 3.00% per year, compounded annually

Mortality Rates. All mortality rates use Pub-2010 General Amount Weighted Median Mortality Tables.

Mortality Projections. All mortality rates are projected from 2010 using generational improvement with Scale MP-2021.

Deaths After Retirement. Mortality rates are based on the Pub-2010 General Amount Weighted Median Mortality Table for Retirees. Rates for male members are set forward one year and multiplied by 107% at all ages. Rates for female members are set forward 2 years and multiplied by 109% at all ages. Because the retiree tables have no rates prior to age 50, the Pub-2010 General Amount Weighted Median Mortality Table for Employees is used for ages less than 50.

Deaths After Retirement (Survivors of Deceased members). Mortality rates are based on the Pub-2010 General Amount Weighted Median Mortality Table for Contingent Survivors. Because the contingent survivor tables have no rates prior to age 45, the Pub-2010 General Amount Weighted Median Mortality Table for Employees is used for ages less than 45.

Deaths Prior to Retirement. Mortality rates are based on the Pub-2010 General Amount Weighted Median Mortality Table for Employees for all employees.

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

Table with 2 columns: Service at Termination, Rate. Rows: 0 (15.0%), 5 (8.0%), 10 (6.0%), 15 (3.5%), 20 (3.5%), 25+ (2.5%)



APPENDIX D
SUMMARY OF ACTUARIAL ASSUMPTIONS FOR PENSION FUND
(continued)

Retirement Rates for Tier I Members. 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:

Age	With Less Than 30 Years of Service at Retirement	With 30 or More Years of Service at Retirement
<50	0.0%	28.0%
50-58	3.5%	28.0%
59	12.0%	28.0%
60-64	12.0%	21.0%
65-79	20.0%	21.0%
80+	100.0%	100.0%

Retirement Rates For Deputy Sheriffs. For Cook County Deputy Sheriffs, 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 that were used:

Age	Males		Females	
	With Less Than 20 Years of Service at Retirement	With 20 or More Years of Service at Retirement	With Less Than 20 Years of Service at Retirement	With 20 or More Years of Service at Retirement
50	2.0%	8.0%	1.0%	8.0%
51-53	2.5%	8.0%	2.0%	8.0%
54	5.0%	8.0%	4.0%	8.0%
55-58	5.0%	12.0%	4.0%	12.0%
59	12.0%	25.0%	10.0%	25.0%
60	12.0%	25.0%	15.0%	25.0%
61-63	12.0%	25.0%	12.0%	25.0%
64	17.0%	25.0%	12.0%	25.0%
65	20.0%	100.0%	22.0%	100.0%
66	17.0%	100.0%	22.0%	100.0%
67-74	20.0%	100.0%	22.0%	100.0%
75-79	30.0%	100.0%	25.0%	100.0%
80+	100.0%	100.0%	100.0%	100.0%



APPENDIX D
SUMMARY OF ACTUARIAL ASSUMPTIONS FOR PENSION FUND
(continued)

Retirement Rates for Tier II Members. 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:

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

Salary Increases.

Service	Wage Growth	Merit and Longevity	Total
0	3.00%	2.00%	5.00%
1	3.00%	2.00%	5.00%
2	3.00%	2.00%	5.00%
3	3.00%	2.00%	5.00%
4	3.00%	1.50%	4.50%
5	3.00%	1.50%	4.50%
6	3.00%	1.00%	4.00%
7	3.00%	0.50%	3.50%
8	3.00%	0.50%	3.50%
9	3.00%	0.50%	3.50%
10	3.00%	0.50%	3.50%
>10	3.00%	0.00%	3.00%

Projected Salary Increase Rate for New Entrants. 3.00% per year (for projection in Section III)

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.



APPENDIX D
SUMMARY OF ACTUARIAL ASSUMPTIONS FOR PENSION FUND
(continued)

Marital Status. 70% of male members are assumed to be married. 40% of female members are assumed to be married.

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

Inactives. For Tier 1 inactives with 10 or more years of service, benefits were estimated based on service and pay and valued as deferred to age 62 annuities. For Tier 2 inactives with ten or more years of service, benefits were estimated based on service and pay and valued as deferred to age 67 annuities.

Annual increase in administrative expenses: 2.50% per year, compounded annually.

Timing of Assumptions: All withdrawals, deaths, retirements and salary increases are assumed to occur July 1 of each year. The timing of retirement changes from mid-year to beginning of year at and after 100% retirement age.

Reported Compensation: Compensation as of the valuation date as furnished by the Fund's office.

Valuation Compensation: Reported compensation adjusted to reflect the pay increases and the probability of decrement during the year.

Normal Cost: Normal cost rate reflects the impact of new entrants during the year.

Changes Since Prior Valuation:

None



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN

The actuarial assumptions used for the December 31, 2022 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 2017 through 2020. These assumptions were adopted by the Board on March 3, 2022. Per capita cost and medical trend rate assumptions are revisited annually. The next experience analysis is scheduled to occur after the December 31, 2024 actuarial valuation, with expected implementation of updated assumptions beginning with the December 31, 2025 actuarial valuation. This analysis will cover the four-year period from 2021 through 2024.

Valuation Date. December 31, 2022

Discount Rate. 7.00% per year, compounded annually.

Mortality Rates. All mortality rates use Pub-2010 General Amount Weighted Median Mortality Tables.

Mortality Projections. All mortality rates are projected from 2010 using generational mortality improvement with Scale MP-2021.

Deaths After Retirement. Mortality rates are based on the Pub-2010 General Amount Weighted Median Mortality Table for Retirees. Rates for male members are set forward one year and multiplied by 107% at all ages. Rates for female members are set forward 2 years and multiplied by 109% at all ages. Because the retiree tables have no rates prior to age 50, the Pub-2010 General Amount Weighted Median Mortality Table for Employees is used for ages less than 50.

Deaths After Retirement (Survivors of Deceased members). Mortality rates are based on the Pub-2010 General Amount Weighted Median Mortality Table for Contingent Survivors. Because the contingent survivor tables have no rates prior to age 45, the Pub-2010 General Amount Weighted Median Mortality Table for Employees is used for ages less than 45.

Deaths Prior to Retirement. Mortality rates are based on the Pub-2010 General Amount Weighted Median Mortality Table for Employees for all employees.



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(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:

Service at Termination	Rate
0	15.0%
5	8.0%
10	6.0%
15	3.5%
20	3.5%
25+	2.5%

Retirement Rates for Tier I Members. 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:

Age	With Less Than 30 Years of Service at Retirement	With 30 or More Years of Service at Retirement
<50	0.0%	28.0%
50-58	3.5%	28.0%
59	12.0%	28.0%
60-64	12.0%	21.0%
65-79	20.0%	21.0%
80+	100.0%	100.0%



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

Retirement Rates For Deputy Sheriffs. For Cook County Deputy Sheriffs, 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 that were used:

Age	Males		Females	
	With Less Than 20 Years of Service at Retirement	With 20 or More Years of Service at Retirement	With Less Than 20 Years of Service at Retirement	With 20 or More Years of Service at Retirement
50	2.0%	8.0%	1.0%	8.0%
51-53	2.5%	8.0%	2.0%	8.0%
54	5.0%	8.0%	4.0%	8.0%
55-58	5.0%	12.0%	4.0%	12.0%
59	12.0%	25.0%	10.0%	25.0%
60	12.0%	25.0%	15.0%	25.0%
61-63	12.0%	25.0%	12.0%	25.0%
64	17.0%	25.0%	12.0%	25.0%
65	20.0%	100.0%	22.0%	100.0%
66	17.0%	100.0%	22.0%	100.0%
67-74	20.0%	100.0%	22.0%	100.0%
75-79	30.0%	100.0%	25.0%	100.0%
80+	100.0%	100.0%	100.0%	100.0%

Retirement Rates for Tier II Members. 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:

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



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

Inflation Rate. 2.50% per year, compounded annually.

Salary Increases.

Service	Wage Growth	Merit and Longevity	Total
0	3.00%	2.00%	5.00%
1	3.00%	2.00%	5.00%
2	3.00%	2.00%	5.00%
3	3.00%	2.00%	5.00%
4	3.00%	1.50%	4.50%
5	3.00%	1.50%	4.50%
6	3.00%	1.00%	4.00%
7	3.00%	0.50%	3.50%
8	3.00%	0.50%	3.50%
9	3.00%	0.50%	3.50%
10	3.00%	0.50%	3.50%
>10	3.00%	0.00%	3.00%

Disability Rates. Included in termination and retirement rates.



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

Anticipated Plan Participation.

60% of eligible employees are assumed to elect retiree health 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.

35% 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	Choice Plus
Pre-Medicare	90%	10%
Post-Medicare	60%	40%

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. Male members are assumed to be 4 years older than female spouses and female members are assumed to be 2 years younger than male spouses. 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.

Per Capita Health Plan Costs.

Estimated net annual per capita incurred claim costs per covered adult for fiscal year 2023 at age 65, reflecting administrative expenses, drug rebates and EGWP subsidies.

	Choice	Choice Plus
Not Medicare Eligible	\$20,953	\$29,079
Medicare Eligible	\$4,875	\$4,046



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

Per capita medical costs were developed using claims, enrollment, drug rebates and EGWP subsidies for the period from January 1, 2022 through December 31, 2022 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 only medical and prescription drug benefit costs 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



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

Health Care Cost Trend Rates.

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

Year	Pre-Medicare	Post-Medicare
2023	7.000%	5.750%
2024	6.750%	5.625%
2025	6.500%	5.500%
2026	6.250%	5.375%
2027	6.000%	5.250%
2028	5.750%	5.125%
2029	5.500%	5.000%
2030	5.250%	4.875%
2031	5.000%	4.750%
2032	4.750%	4.625%
2033+	4.500%	4.500%



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

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 District 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 2023 include approximately 28% 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.



APPENDIX E
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS FOR
RETIREE HEALTH CARE PLAN
(continued)

Federal Legislation.

The impacts of the Affordable Care Act (ACA) and the Inflation Reduction Act (IRA) were addressed in this valuation. Review of the information currently available did not identify any specific provisions of the legislation that are anticipated to directly impact results at this time 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, and the anticipation of potential changes to Medicare due to the IRA, which are included in our trend assumption. Continued monitoring of the impact on the Plan’s liability due to this and other legislation, if applicable, will be required.

COVID-19.

The impact of the COVID-19 pandemic was considered in this valuation; however, no changes were incorporated at this time due to the level of uncertainty regarding the impact on both plan costs and contribution levels going forward. Given the uncertainty regarding COVID-19 (e.g., the impact of routine care being deferred, direct COVID-19 treatment and prevention costs, changes in contribution and budget projections), continued monitoring of the 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, a minimal number have enrolled in FPEABF and CEABF retiree health care plan as a result of the Levin case. Given the limited amount of elections, we have not included additional cost impact of the Levin case beyond those in the census data submitted for the valuation.



**APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES**

1982 Session

SB 1147

- Actuarial reporting to Insurance Department and Pension Laws Commission. Actuarial statements prepared by a qualified actuary for plan years ending after December 31, 1984 including actuarial present value of credited projected benefits.

SB 1452

- Allows a participant who served as Village Trustee and was not then eligible to participate in the IMRF for such service, to obtain credit in this fund by making the required contributions. Four-year maximum credit.

SB 1579

- Permitted investment list moved to general section of the statute. Expanded fiduciary standards, prohibited transactions, civil action may be brought by Attorney General or by a participant.

HB 2286

- Deputy Sheriff may elect between January 1, 1983 and January 15, 1983 to transfer credit to this Fund from the State Employees' Retirement System.

1983 Session

SB 22

- Delegation of investment authority restrictions.

HB 514

- 10% prudent person investment category.
- 10% increase in spouse benefits to spouses receiving benefits as of January 1, 1984.
- Immediate participation rather than after 1 year of service.
- Refunds if off the payroll at least 30 days.
- Money purchase annuity for County Sheriffs service not counted for Sheriff Formula.
- Elected sheriff may be covered by Sheriff Formula with contributions.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

HB 637

- Allows an active member of the General Assembly to establish credit in this fund for time for which he or she could have elected to participate with interest at 6% and to transfer credits to the Park Fund.

1984 Session

- No legislative changes.

1985 Session

HB 17

- For withdrawals on or after July 1, 1985, 10 year vesting formula (for employee minimum and spouse minimum annuity) providing the employee 2% of final average earnings for each year of service reduced 0.5% (for ages 55-60) for each month under age 60 (but no reduction with at least 30 years of service). Spouse minimum amount is 50% of the employee's amount at retirement (reduced 0.5% for each month the spouse is under age 60) but not less than 10% of the final average earnings.
- Unisex money purchase factors for widows/widowers.
- Disability provisions extended to 70 in certain cases.
- Sheriff formula for withdrawals after December 31, 1985 after having attained age 50 in service with 20 or more years of service of 50% of 4 year average earnings plus 2% for each year or fraction of service over 20.
- Changes in the reversionary annuity provisions.
- Optional plan of 3% contributions for 1% optional benefit per year of service. Provisions for payment of past service with interest. Provisions expire July 1, 1990. Such plan, if elected by a member, would require a 3% of salary contribution (with interest for past service) and would produce an additional 1% per year of service benefit and would increase the employee annuity, post-retirement increase and spouse annuity. Membership in this plan is optional and as such, it is possible to delay election to just prior to retirement.

1986 Session

HB 2630

- Allows for a member of a County police department to establish service credit for approved leaves of absence without pay, during which the employee served as head of an employee association consisting of other police officers by making the required contributions.
- Allows for the use of service of less than one year for calculating reciprocal annuities in the case of employees who transfer or are transferred as a class from one participating system to another.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

HB 2715

- For withdrawals after January 1, 1988, and for employees with at least 10 years of service and age 50, the minimum formula annuity is increased to 2.2% of the Final Average Salary for each of the first 20 years of service and 2.4% for each year thereafter, not to exceed the maximum of 80% of Final Average Salary. For retirement between age 50 (new minimum retirement age) and age 60, the annuity thus computed will be reduced 0.5% for each month the employee is under age 60 unless the employee has 30 or more years of service in which case no reduction will apply.
- The surviving spouse of an employee who retires on or after January 1, 1988, with at least 10 years of service is entitled to 50% of the annuity including increases that the deceased annuitant was receiving as of his or her date of death. Such annuity to be reduced 0.5% for each month the surviving spouse is under age 60 at the date of the annuitant's death.
- Effective January 1, 1988, any child's annuity being paid shall be increased from \$140 per month to 10% of the employee's salary at the date of death provided that the increased annuity would be greater than \$140 per month, subject to Statutory maximums.
- Effective January 1, 1987, the maximum age conditions for any disability are removed for employees whose disability continued past that date.
- A Deputy Sheriff with at least 15 years of service as a Deputy Sheriff can receive credit under the Police formula for other Cook County service by electing to pay an additional contribution prior to retirement. In addition, any Police Officer who has rendered at least 20 years of service and who separates from service prior to age 50 and does not withdraw his or her contributions can apply for pension benefits at age 50 without returning to duty.
- Effective July 1, 1988, all employee and surviving spouse annuitants will receive a one-time increase. Such increase to be an additional 1% for each full year that the annuitant has received benefits as of July 1, 1988.
- An alternative plan for elected officials of 3% of the Final Average Salary for the first 8 years, 4% for the next 4 years and 5% thereafter, subject to the maximum of 80%, is available. The elected official must contribute an additional 3% of salary to receive these benefits.
- Effective December 1, 1988, the Retirement Board will be increased from 5 to 7 Trustees. One annuitant Trustee to be elected for a 3 year term by those persons receiving annuity or disability benefits and 1 County Trustee to be elected by the County contributors for a term of 3 years beginning December 1, 1988.

1988 Session

- No legislative changes

1989 Session

SB 95

- Allows active members of the General Assembly to transfer credits and creditable service established in the Fund to a Fund established under Article 5 of the Pension Code.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

- For withdrawals on or after July 1, 1985, provides that for employees with at least 30 years of service, no reduction for age less than 60 will apply for the spouse annuity.

SB 1096

- Extends the Optional Plan of benefits from the original expiration date of July 1, 1990 to July 1, 1992.

HB 332

- Signed August 23, 1989.
- Eliminated age-related discriminatory provisions as required by Federal law or regulations.
- Provided for age discrimination changes effective January 1, 1988 to eliminate age 65 requirements for marriage in service and children's benefits, provided contributions after age 65 for spouse benefits, provided employee accumulation annuities be computed after age 70, provided employee and spouse accumulation annuities not be "fixed" at age 65, provided no age 70 restriction on disability benefits, provided for active members over age 65 that their accounts be "unfixed" and accumulate interest until the date of withdrawal, and provided that there be no age 70 membership limitation and removed the permitted "no spouse" refund at age 65.
- Provides that for employees retiring after January 1, 1988, but before age 55, Section 20-131 shall not apply; therefore, they are not entitled to the alternative formula set forth in Section 20-122 repealed in 1975.

HB 158

- Provides for payment by the Fund of 50% of the health care premiums for annuitants who participate in any of the County's health care programs beginning January 1, 1990 and ending December 31, 1993, subject to the following maximums:

Single coverage, no Medicare	\$130.00 per month
Single coverage, with Medicare	39.00 per month
Annuitant + 1 family member, no Medicare	212.00 per month
Annuitant + 1 family member. 1 with Medicare	168.00 per month
Annuitant + 1 family member, both with Medicare	78.00 per month
Annuitant + 2 or more family members, no Medicare	280.00 per month



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

1990 Session

SB 1951

- Signed January 14, 1991.
- Raises the maximum annuity for a Deputy Sheriff from 75% of final average salary to 80% of final average salary.
- Provides for a revised table to be used for reversionary annuities to allow for the younger age 50 retirement approved in previous legislation.
- Allows for the refund of the additional 0.5% contributions that are paid by a Deputy Sheriff for the special Sheriff's formula to be refunded if the regular formula is used to calculate the employee annuity at the time of retirement. The refund, if given, is to include the interest as well as the 0.5% contributions.
- In the case where an employee who is disabled and cannot return to work after all his/her disability credit has expired, and chooses the option to pay for up to one additional year of service under Section 9-174, this additional service will not affect the resignation date for annuity purposes.
- Provides for employees who retire on or after November 1, 1990, any accumulated vacation paid out in a lump-sum at the time of retirement will not affect the employees' withdrawal date for purposes of annuity. Any service will be granted and used for annuity purposes, but the final average salary will not include the salary for any vacation paid out.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

SB 136

- Amends Chapter 120, Paragraph 671 of the Revenue Act to provide for a separate listing on the tax bill of the dollar amount of tax due from the person assessed which is allocable to a tax levied under the Illinois Pension Code, or any other tax levied by a municipality or township for public pension or retirement purposes. Effective January 1, 1990.

1991 Session

HB 971

- Signed November 19, 1991.
- Early Retirement Window for employees attaining age 55 prior to withdrawal and withdrawing on or after January 1, 1992, but before December 31, 1992, the service requirement for minimum formula annuity is reduced to 5 years. In addition, for the same period above, the age discount for retirement prior to age 60 is reduced to 0.25% per month under age 60 at retirement. The widow(er)'s annuity for the above early retirement window is 50% of the employee's annuity reduced by 0.5% for each month the widow(er) is under the age 60 at the time of the employee's death.
- Provides that the 3% annuity increase will begin on January 1st following the first anniversary of retirement for employees who retired with 30 or more years of service and were under age 60 at retirement.
- Extends the Optional Plan of Benefits for an additional 5 years to July 1, 1997.
- Allows for an employee to make contributions and receive service credit for any unused accumulated sick leave up to 180 days, at retirement.
- Employees may now discontinue making contributions to the Pension Fund after 35 (previously 42) years of contributing service upon notification to the Retirement Board at least 60 days before the deductions cease.
- For widow(er)s of employees or annuitants who die after November 19, 1991, the maximum limit on the spouse annuity is removed provided that the employee was at least 60 with at least 20 years of service or also if retirement occurred on or after January 1, 1982, at age 65 or over with at least 10 years of service for retirements.
- For widow(er)s of employees who retired on or after January 1, 1984, but before July 1, 1985, with at least 30 years of service, the annuity is 50% of the employee's annuity as of the date of retirement with no discount for under age 60.
- Beginning with retirements or deaths on January 1, 1992, with at least 10 years of service, the age discount for a widow(er)'s annuity will be 0.5% for each month the widow(er) is under age 55 at the date of the employee's death. This is reduced from age 60 for prior deaths or retirements.
- Beginning on November 19, 1991, provides for a \$1,000.00 death benefit payable upon the death of employee or annuitant to the employee's designated beneficiary, or to the employee's estate if no beneficiary has been named.
- Beginning December 1, 1991, the Fund may pay, on behalf of each of the Fund's annuitants who choose to participate in any of the County's health care plans, all or any portion of the total health care premium (including coverage for other family members) due from each such annuitant.
- Allows the annuitant to authorize the withholding of dues from annuity checks for certain labor organizations.
- Allows participation for all employees with at least one month of service.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

- Provides for a repayment of contributions and transfer of service from the General Assembly and for former members of the General Assembly through February 1, 1993.
- Grants the authority to rent or lease office space to the Board of Trustees when deemed desirable for the purposes of the Fund.
- Allows the Pension Fund to withhold contributions to a labor organization from annuity checks provided that at least 100 annuitants authorize withholdings from their checks.
- Provides for the repayment of contributions by former members of the County Police who were the head of an employee association, to include both the employee and employer shares.

1992 Session

SB 1770

- Signed September 16, 1992.
- Early Retirement Incentive
- Provides an extra 1% per year of County service, up to 10 maximum, times the final four year average salary for those eligible employees. There is no cost to the employee. The age discount from age 55 to 60 is eliminated if eligible.
- Eligible if a contributing member on May 1, 1992 and:
 - Retires on or after December 1, 1992 and on or before May 29, 1993;
 - Attains age 55 or more on or before the date of retirement; and
 - Has at least 10 years of creditable service.

1993 Session

SB 1650

- Signed January 26, 1993.
- Provides that the 3% annuity increase will begin no later than January 1, 1993 for employees who retire before age 60 before January 1, 1991 with at least 30 years of service.
- For widow(er)s of annuitants who die on or after January 1, 1993, the widow(er)'s annuity shall be 50% of employee's retirement annuity at death discounted 0.5% per month the widow(er)'s age is less than 55, except if the employee had 30 years of service.
- Allows an employee with 25 years of service to pay for up to 2 years of military service, whether or not followed by County service.
- Two year minimum subsequent service is changed to six months for employees who apply to repay a refund between January 1, 1993 and March 1, 1993.
- Employees may transfer to County up to 10 years with Municipal or Laborers' until March 1 1993.
- Allows for transfer of County service credit to Judges.
- Allows a State Policeman to transfer all or some of his service with County Police to State Employees Retirement System until July 1, 1993 and reinstate service credit terminated by a refund by paying 6% compounded annually until July 1, 1993.



**APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)**

- Former members of County Police who retire January 1, 1993 to March 1, 1993 do not have to pay employer contribution for periods served as head of an employee association.

1994 Session

- No legislative changes.

1995 Session

SB 114

- Approved July 14, 1995.
- The amount of earnings that may be taken into account by any retirement system is limited to the maximum dollar limitation specified in Section 401(a)(17) of the Internal Revenue Code, except for persons who became participants before 1996.
- Allows for active participants employed by the Cook County State's Attorney's office on January 1, 1995 to transfer to this Fund credits accumulated under a pension fund established under Article 5 of this Code and to transfer said credits from said fund to the Cook County fund upon payment of both employee and employer contributions with 6% interest to the County Employees' and Officers' Annuity and Benefit Fund.
- The Fund is authorized to make certain involuntary distributions required by Section 401(a)(9) of the Internal Revenue Code.

SB 424

- Approved July 7, 1995.
- The Pension Laws Commission was created as a legislative support services agency.

1996 Session

SB 1456

- Approved August 9, 1996.
- Any chief of the County Police Department or undersheriff of the County Sheriffs Department may elect to be included as a deputy sheriff.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

1997 Session

HB 313

- Signed June 27, 1997.
- Change County size necessary for fund creation to 3,000,000 from the previously required 500,000.
- As of January 1, 1998 the automatic annual increase for employee and spouse annuitants changed to 3% compounded for all past, current, and future annuitants, regardless of the effective date of the annuity. Term annuities are not eligible for the automatic annual increase.
- Early Retirement Incentive
- Provides an extra 1% per year of County service, up to 10 maximum, times the final four year average salary for those eligible employees. There is no cost to the employee. The age discount from age 55 to 60 is eliminated if eligible.
- Eligible if a contributing member on May 1, 1997 and:
- Retires on or after September 1, 1997 and on or before February 28, 1998;
- Attains age 55 or more on or before the date of retirement; and
- Has at least 10 years of creditable service.
- Effective January 1, 1998 all widow(er) annuitants will have their annuities increased by 3% and will receive the automatic increase of 3% compounded annually. Those widow(er) annuitants receiving a Term annuity will not be eligible for the automatic annual increase.
- Extends the Optional Plan of benefits to July 1, 2002.
- Allows members of the Cook County police department to transfer their service into the Policemen's fund until July 1, 1998. and to reinstate service credit terminated by a refund by paying 6% compounded annually.
- Allows members of the fund with at least 20 years of service credit to make contributions, until June 1, 1998, into the fund based on CTA compensation and creditable service is granted for this period for up to 10 years of service credit.

1998 Session

- Effective July 1, 1999, Public Act 90-731, allows an alternate payee (former spouse, child, or dependent) designated in a Qualified Domestic Relations Order to receive all or a specified portion of a member's retirement benefits or refund otherwise payable to the member.

1999 Session

- No legislative changes.

2000 Session

- Passed Public Act 87-1130, which removes the remarriage penalty. Effective September 6, 2000 widow annuities will no longer be ceased due to their remarriage.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

2001 Session

SB 479

- Public Act 92-0066 approved July 12, 2001
- Beginning December 1, 2001 the Retirement Board will be increased from 7 to 9 Trustees adding one elected Cook County Annuitant Trustee and one elected Forest Preserve Annuitant Trustee.

2002 Session

HB 5168

- Signed June 28, 2002.
- Contractual service to the Retirement Board, of at least 5 years, can be purchased as creditable service in the fund for up to 10 years of services by making a written application to the board before July 1, 2003. A person who establishes such credit may, at the same time, reinstate credit in the Fund and repay a refund without a return to service.
- An employee, who withdraws on or after July 1, 1996 but before August 1, 1996, at age 55 or over with 8 or more years of service, may elect to receive a minimum formula annuity equal to 2.2% of the Final Average Salary for each of the first 20 years of service and 2.4% for each year thereafter, not to exceed the maximum of 80% of Final Average Salary. There will be an age discount of 0.25% for each month that the employee is under the age of 60, unless the employee has at least 30 years of service.
- For withdrawals after June 30, 2002, with at least 10 years of service and age 50. The minimum formula annuity is increased to 2.4% of the Final Average Salary for each year of service, not to exceed the maximum of 80% of Final Average Salary.
- Early Retirement Incentive
- Provides an extra 1% per year of County service, up to 10 maximum, times the highest consecutive four year average salary in the last 10 years of service for those eligible employees. There is no cost to the employee. The age discount for attained age under 60 is eliminated if eligible.
- Eligible if a contributing member on January 1, 2001 and:
 - Retires on or after November 30, 2002 and on or before March 31, 2003;
 - Attains age 50 or more on or before the date of retirement; and
 - Has at least 20 years of creditable service in the Fund.
- For widow(er)s of annuitants who die in service or after July 1, 2002, or has at least 10 years of service and dies on or after July 1, 2002 while receiving an annuity, the widow(er)'s annuity shall be 65% of employee's retirement annuity at death discounted 0.5% per month the widow(er)'s age is less than 55, except if the employee had 30 years of service.
- For widow(er)s of annuitants who were not married at the time of retirement, but married after retirement for at least one year prior to annuitant's death, the widow(er) will be eligible for an annuity if the refunded contributions for a widow(er)s annuity are repaid, plus interest at the rate of 6% per year. (The Pension Fund Board has received a legal opinion that has interpreted this to include the current widow(er). The legal opinion was that, since in these instances no refund of spouse contributions was made, there is no payment due from the widow.)
- Extends the Optional Plan of benefits to July 1, 2005.



**APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)**

2003 Session

- No legislative changes.

2004 Session

- No legislative changes.

2005 Session

SB 1446

- Made certain changes to the provisions relating to QILDRO, effective July 1, 2006. It makes an alternate payee entitled to receive death benefits and allows the alternate payee to receive a percentage of the employee's retirement benefits (instead of only a fixed dollar amount).
- Public Act 94-0079, prohibits Illinois public pension funds from investing or depositing in entities doing business in or with the government of Sudan.

2006 Session

- No legislative changes.

2007 Session

HB 49

- Public Act 95-279, effective January 1, 2008.
- Provides that legally adopted children shall be entitled to the same benefits as other children, and no child's or survivor's benefit shall be disallowed because the child is an adopted child.

HB 3578

- Public Act 95-0654, effective January 1, 2008.
- Eliminated the alternative formula for County officers elected after January 1, 2008.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

SB 377

- Signed into law on August 23, 2007 as Public Act 95-0369.
- Provided that members who were in active employee status on December 31, 2006, applies for a refund of contributions between the dates of August 23, 2007 and October 7, 2007, and resigns their position between August 23, 2007 and October 22, 2007, shall be entitled to receive a one-time lump sum retirement cancellation payment equal to the member's accumulated contributions with interest, multiplied by 1.5, in lieu of any retirement annuity or other benefit provided by the fund. An employee who receives a retirement cancellation payment may not be rehired until after being out of service for at least 365 days. A person who has received an alternative retirement cancellation payment and who returns to service under the Fund must repay the regular refund with interest at 3% per year and the 50% enhancement payment with interest at 6% per year.
- Eliminated the requirement to maintain various reserve accounts no longer needed for the administration of the fund.

SB 1380

- Signed into law on August 28, 2007 as Public Act 95-0504.
- Provides that for 6 months from the effective date, an employee may transfer to this Fund up to 6 years of creditable service accumulated under Article 3 of the Pension Code upon payment to this Fund of the amount of employee and employer contribution that would have been required if the employee had participated in this Fund during the period for which credits is being transferred plus interest at the rate of 6% per year.

2008 Session

SB 2520

- Public Act 95-1036, effective February 17, 2009.
- Provides that duty disability and child's disability benefits shall not be allowed unless application therefor is made while the disability exists; except that this limitation does not apply if the Board finds that there was reasonable cause for delay in filing the application while the disability existed. Provides that this is intended to be a restatement and clarification of existing law and does not imply that application for a duty disability benefit made after the disability had ceased, without a finding of reasonable cause, was previously allowed under this Article.
- Provides that (i) before any action may be taken by the Board of Trustees on an application for duty disability benefit or widow's compensation or supplemental benefit, the related applicant must file a timely claim under the Workers' Compensation Act or the Workers' Occupational Diseases Act, as applicable, to establish that the disability or death resulted from an injury incurred in the performance of an act or acts of duty, and the applicant must receive compensation or payment from the claim or the claim must otherwise be finally adjudicated and (ii) with respect to duty disability', satisfactory proof must be provided to the Board that the final adjudication of the claim established that the disability or death resulted from an injury incurred in the performance of an act or acts of duty.
- Amends the Cook County County Article of the Illinois Pension Code. Adds a provision imposing forfeiture of benefits upon conviction of a felony arising out of or in connection with the member's employment.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

2009 Session

SB 0364

- Public Act 96-0006 effective April 3, 2009.
- Requires Board members to file a verified written statement of economic interest annually with the office of the Clerk of Cook County.
- Requires the Board to adopt a policy that sets quantifiable utilization goals for the management of assets in specific asset classes for emerging investment managers. Goals shall be separated by minority ownership, female ownership, and person with a disability ownership.
- Requires that if at least one emerging firm meets criteria of search process, at least one shall be invited to present to the Board for final consideration.
- Requires the Board to adopt a policy that sets forth goals for increasing the racial, ethnic, and gender diversity of its fiduciaries, including its consultants and senior staff.
- Requires the Board to adopt a policy that sets forth goals for utilization of WMDBE firms for all contracts and services, based on the percentage of total dollar amounts of all contracts let.
- Requires the Board to adopt a policy that sets forth goals for increasing the utilization of minority broker-dealers.
- Requires an annual report to the Governor and General Assembly on the utilization of "emerging firms" as defined by Article 1 of the Pension Code.
- Requires the Board to award all contracts for investment services using a competitive process that is substantially similar to the process required for the procurement of professional services under Article 35 of the Illinois Procurement Code. Requires the Board to adopt a procurement policy which will be posted on the Fund's website and filed with the Illinois Procurement Policy Board.
- Provides that a person may not act as a consultant or investment adviser unless that person is registered as an investment adviser or bank under the federal Investment Advisers Act of 1940.
- Requires investment contracts between the Retirement Board and investment service providers to include certain required information.
- Provides consultant contracts cannot exceed five years in duration; however, incumbent consultants may compete for new contracts.
- Requires investment consultants and advisers to disclose all direct and indirect fees, commissions, penalties, and other compensation paid by or on behalf of the investment consultant or adviser in connection with the services provided.
- Requires that a description of every contract let for investment services be posted on the website, including name of entity awarded the contract, amount of contract, total fees paid, and disclosure describing the factors that contributed to the selection.
- Requires the Fund to maintain a website that shall include standard investment reporting, a copy of relevant Board policies, a listing of investment consultants and managers, a notification of any requests for investment services, and the names and e-mail addresses of Board members, Fund directors, and senior staff.
- Requires Board members to attend at least eight hours of ethics training per year and requires each Board to annually certify its member's compliance and submit an annual certification to the Division of Insurance of the Department of Financial and Professional Regulation.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

- Prohibits any Fund trustee or employee or their spouses or immediate family living with them to intentionally solicit or accept any gift from any prohibited source as prescribed in Article 10 of the State Officials and Employees Ethics Act, including educational materials and missions and travel expenses for discussing Fund business.
- Provides that any person who knowingly makes any false statement or falsifies or permits falsifying any record of the pension fund in an attempt to defraud is guilty of a Class 3 felony.
- Provides that no person or entity shall retain a person or entity to influence the outcome of an investment decision or the procurement of investment advice to a pension fund for compensation, contingent upon the decision of the Board.
- Requires approval for travel or education mission expense of a Trustee by a majority of the Board prior to mission.

SB 0189

- Public Act 96-0542 effective August 17, 2009.
- Amends the Open Meetings Act and the Freedom of Information Act.

2010 Session

SB 1946 and SB 550

- Public Acts 96-0889, effective April 14, 2010, added 5/1-160 and Public Act 96-1490, effective December 30, 2010, made technical changes 5/1-160. These acts created a 2nd Tier of benefits for all reciprocal systems of the Pension Code.
- Members first participating in any reciprocal fund, except Judges and GARS, on or after January 1, 2011 will be Tier 2 members.
- Tier 2 members will have their salary capped at \$106,800 for all purposes. The amount of the cap is subject to increase annually at the lesser of 1/2 of the change in CPI-U or 3%. If the change in CPI-U is zero or negative, the cap will not change.
- Tier 2 member's Final Average Salary (FAS) used in annuity benefit calculations will be based on the highest consecutive 96 months in the last 10 years.
- Tier 2 members will not be able to receive an unreduced retirement annuity until age 67 and the earliest they can receive any retirement annuity is age 62. Annuities payable before age 67 are reduced 1/22% for each full month under 67 regardless of service. Tier 2 members must have at least 10 years of service to qualify for a retirement annuity.
- Tier 2 members will not be able to receive a COLA until the January 1 following their 67th birthday or following the 1 year anniversary of retirement, whichever is later. The COLA will not be compounded and will be the lesser of 1/2 the change in CPI-U or 3%. If the change in CPI-U is zero or negative, there will be no increase.
- The Tier 2 surviving spouse annuity will be 66-2/3% of the member's retirement annuity at death. If the member is not retired, it is 66-2/3% of the member's earned retirement annuity.
- The Tier 2 COLA for a surviving spouse annuity will begin the January 1 following the member's death if the member was retired. If the member was not retired it will begin on the January 1 following the 1 year anniversary of the member's death. The COLA will not be compounded and will be the lesser of the 1/2 change in CPI-U or 3%. If the change in CPI-U is zero or negative, there will be no increase.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

- Tier 2 members receiving a retirement annuity will have their annuity suspended if they go to work on a full time basis with any reciprocal fund except Judges and GARS.
- There was no change in the member's benefit accrual percentage (2.4% per year) or the employee or employer contributions.

HB 4644

- Public Act 96-0961 effective July 2, 2010 added 5/9-128.2 allows elected officials to establish earnings credit for the amount of stipend that was not received.
- Member must pay employee contributions and employer's normal cost on the stipend not received and actuarially assumed interest. Payment must be received by January 2, 2011.

2011 Session

SB 1716

- Public Act 96-1513 effective June 1, 2011 allows 2 unmarried people to enter into a Civil Union. Partners of a Civil Union are to be treated the same as a spouse in the State of Illinois.
- The Fund will now grant spouse annuity benefits to a partner of a Civil Union and annuitants can cover their Civil Union partners under the Fund's Health Benefit plan. A Civil Union certificate will be treated as the equivalent to a Marriage certificate.

SB 1672

- Public Act 97-0530 effective August 23, 2011 requires all Funds to comply with the Federal H.E.A.R.T. Act of 2008.
- Public Act 97-0609 effective January 1, 2012 amends 5/1-160(h) stating members that first become participants on or after the effective date will have their retirement annuity suspended if they return to work for the employer on a contractual basis.
- The member is required to notify the Fund prior to accepting the contractual employment.

HB 1670

- Public Act 97-0504 effective January 1, 2012 amends the Open Meetings Act to require elected or appointed members of public bodies to take electronic training by the Attorney General's Public Access Counselor. Training must be completed by the end of 2012. Members that are elected or appointed after January 1, 2012 must complete the training within 90 days of taking the oath or assuming the responsibilities of the position.

HB 3813

- Public Act 97-0651 effective January 5, 2012 amends Article 1 in regards to Fraud and Fiduciary Liability.
- Requires fiduciaries to report reasonable suspicion of false statements. The Board of Trustees must report reasonable suspicion of false statements to the State's Attorney.



**APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)**

- The Act also amends 5/9-219 requiring sheriff police and correction officers that purchase service while on approved leave to represent a labor organization to remain in sworn status during the leave to be eligible to purchase service credit.

2012 Session

HB 3969

- Public Act 97-0967 effective August 16, 2012 amends Article 1 adding 5/1-166 which requires an employer to pay GARS for any additional liability created from a reciprocal retirement if the retiree's FAS is higher than their highest GARS salary, and they were employed by the non-GARS agency for 2 years or less since leaving GARS.

2013 Session

SB 1921

- Public Act 98-0551 effective August 27, 2013 amends Article 9 adds 5/9-119.1, which defines "earned annuity" to clarify how the Fund should administer Tier 2 Spouse Annuity benefits.
- Adds 5/9-202.1 to allow images to be treated as original records.
- Amends 5/9-112 to simplify the definition of salary and spells out how salary is defined for determining Ordinary Disability benefits.

SB 1

- Public Act 98-0599 effective June 1, 2014 amends Article 9 sections 219 and 220 so that new employees starting on or after June 1, 2014 shall not receive credit for lump sum vacation time paid and will not be allowed to purchase unused sick time. Note: this Act was later overturned as unconstitutional by the Illinois Supreme Court on May 8, 2015.

2014 Session

SB 2809

- Public Act 98-1137 effective June 1, 2015 amends Article 5/1-115 to allow the Attorney General to bring a civil action to enjoin the payment of benefits to any person who is convicted of any felony relating to or arising out of or in connection with that person's service as an employee under the Code.

2015 Session

SB 842

- Public Act 99-0008 effective July 1, 2015 creates Articles 5/9-184.5 and 5/10-107.5 which, if the County or County fails to transmit the required contribution to the Fund, allows the IL State Comptroller to deduct the amount due from payments of State Funds due to the Employer and remit to the Fund.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

SB 1334

- Public Act 99-0462 effective January 1, 2016 amends Article 5/1-109.1 to include aspirational goals for retirement systems to use emerging investment managers for not less than 20% of the total funds under management. It also sets aspirational goal that not less than 20% of investment advisors and other contracts to utilize businesses owned by minorities, females, and persons with disabilities as those terms are defined in the Business Enterprise from Minorities, Females, and Persons with Disabilities Act.

2016 Session

SB 2817

- Public Act 99-0578 effective July 15, 2016 adds Article 5/9-108.3 to define “In Service”.
- Amends 5/9-158 to clarify that a Board Appointed Physician is not necessary for certain maternity or duty disability claims.
- Amends 5/9-179.2 to close “Other Governmental Service” provision to new participants after July 14, 2016.
- Adds 5/9-241 to clarify the Board’s ability to correct any calculation errors.

HB 6030

- Public Act 99-0683 effective July 29, 2016 adds Article 5/1-140 to allow the Illinois Department of Vital Records to share death reporting information to pension systems in Illinois.

2017 Session

SB 42

- Public Act 100-0023 effective July 6, 2017 makes many changes to the pension code adding Tier 3 for new hires of the Chicago (Municipal and Laborers) and State (SERS, SURS, TRS) funds and Optional Tier 3 for Cook County and other local systems (Chicago Teachers and Chicago Park).
- Adds 5/1-162 which would allow the Cook County Board (Employer) to opt into a Tier 3 plan. If the plan is adopted by Employer ordinance, it would allow any future new hire to elect the current Tier 2 plan or the new Tier 3 plan.
- Section 1-162 gives the Employer the ability to opt into Tier 3. Changes will be effective the later of 7/1/2018 or the date the Board adopts an ordinance to adopt the changes. If adopted it would then impact any new hires after 6 months after the adoption date. The earliest impact would be for new hires on or after January 1, 2019.
- If adopted new hires after 1/1/2019 (or later depending on ordinance date) would have the option of the current Tier 2 benefit under Section 1-160 or the new hybrid plan established under Section 1-162.
- New hires must make an election of which plan within 30 days of becoming a participant. The Fund has an obligation to establish process for making this election and can adopt rules for participation.
- For those that elect the benefits under 1-162 the new Tier 3 benefit structure would be:
 - The Section establishes a Hybrid Defined Benefit(DB)/Defined Contribution(DC) plan



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

- FAS would be an average of the last 120 months (10 years)
- Salary shall not exceed the SS Wage Base
- Retirement benefits can begin at age 67 (or normal retirement age determined by SSA but not earlier than age 67) if retiree has at least 10 years of service
- Employees accrue 1.25% per year of service for DB plan
- COLA begins on first anniversary of annuity start date, calculated based on ½ CPI-w
- Survivor benefit is 66-2/3% of retiree annuity at death or earned annuity for death of employee
- Employees contribute 6.2% to DB plan, but contribution cannot exceed normal cost of benefit
- Fund establishes a DC plan
- Employee contributes at least 4% of salary to DC plan
- Employer contributes between 2% and 6% to DC plan after one year of employment. The contribution can vary by individual employee and employer contributions immediately vest into an employee's account.
- Employee contributions are reduced to cover the cost of offering DC plan

SB 1714

- Public Act 100-0542 effective November 8, 2017 requires investment consultants to report annually to the Fund regarding search disclosures for MBE, WBE, and DBE.
- Requires annual disclosure of all compensation or economic opportunity received during the last 24 months from investment advisors retained by the Fund.
- Beginning January 1, 2018 no contract for consulting services shall be awarded by the board without first requiring the consultant to make the economic opportunity and the MBE, WBE, and DBE disclosures.

SB 402

- Public Act 100-0554 effective November 16, 2017 requires the Fund, as a lobbying entity, to have a sexual harassment policy.

SB 350

- Public Act 100-0334 effective August 25, 2017 amends 5/9-235 and 5/10-109 to provide that no benefits shall be paid to any person who otherwise would receive a survivor benefit who is convicted of a felony relating to the service of the employee from whom the benefit results.

2018 Session

SB 2578

- Public Act 100-0794 effective August 10, 2018 amends 5-9/228 to allow payments to be directed to a member's certified and licensed nursing home under limited conditions where they are legally disabled.
- The act requires the nursing home to notify the Fund in the event of the disabled member's death or any other relevant change in their status.

HB 4412

- Public Act 100-0902 effective August 17, 2018 amends 5-1/109.1(5) requires all Illinois pension funds to make best efforts to ensure the racial and ethnic makeup of its senior staff represents the racial and ethnic makeup of its membership.



APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)

2019 Session

HB 2071

- Public Act 101-0011 effective June 7, 2019 creates 5-9/179.4 to allow active participants to establish service credit and earnings credit for periods of furlough and/or salary reduction occurring between December 1, 2017 and November 30, 2018.
- The act requires the participant to apply in writing before December 31, 2019, not receive any remuneration from the county and pay to the Fund on an after-tax basis the employee contributions and the employer's normal cost (based on the December 31, 2018 actuarial valuation) plus compound interest based on the actuarially assumed rate.
- The participant must make the above payment while they are active participants and within 12 months after their application date.

HB 2460

- Public Act 101-0473 effective January 1, 2020 amends 5-1/113.6 to require funds' investment policy include a statement that material, relevant, and decision-useful sustainability factors (as provided under the Illinois Sustainable Investing Act) are considered by the board, within the bounds of financial and fiduciary prudence, in evaluating investment decisions.
- The Act creates 5/1-113.7 requires that every pension fund adopt a written investment policy and file a copy of that policy with the Department of Insurance within 30 days after its adoption whenever a board changes its policy.

SB 1264

- Public Act 101-0546 effective January 1, 2020 (Revised Uniform Unclaimed Property Act "RUUPA") creates 765 ILCS 1026/15-1505 to require funds to report to the Illinois Treasurer all property presumed abandoned by providing the name of the owner and any beneficiaries, the last known address, the Social Security number or taxpayer ID number, and the dollar amount.
- The funds shall not have to pay the presumed abandoned account balance to the IL Treasurer, only reporting the information is required.

2020 Session

SB 2135

- Public Act 101-0640 effective June 12, 2020 amends the Open Meetings Act (5 ILCS 120/7) 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).



**APPENDIX F
SUMMARY OF LEGISLATIVE CHANGES
(continued)**

2021 Session

SB 1056

- Public Act 102-0210 effective July 30, 2021 amends 5/10-107 to allow the Forest Preserve District to use other lawfully available funds in lieu of the tax levy.
- Amends 5/9-158 to allow the board to use an acceptable physician and allow the board discretion to approve periods longer than 1 year of disability.
- Amends 5/14-110(h) to allow some state employees to transfer prior Cook County service to SERS if they were in certain County positions (Police officer, corrections officer, court services officer).

2022 Session

HB 1859

- Public Act 102-1131 signed by the Governor February 10, 2023 and effective June 1, 2023, amends 5/10-107 to increase the annual contribution to the Forest Preserve Fund beginning in 2024.
- For payment years 2024 through 2054 the Forest Preserve District’s required annual contribution to the Fund will be determined on an actuarial basis calculated annually to get the Forest Preserve pension liability to 100% by 2054.
- The methodology calls for 30 year layered amortization of unfunded actuarial accrued liability, using a 5-year smoothed actuarial value of assets with payments increasing at 2% per year.
- For payment years after 2055, the District’s required annual contribution to the Fund shall be the amount needed to bring the actuarial assets of the Fund up to 100% of the total actuarial liabilities.
- The minimum required employer contribution shall be submitted annually on or before July 31 unless another timeframe is agreed upon.