Firemen's Annuity and Benefit Fund of Chicago

Actuarial Valuation and Review as of December 31, 2022

May 2023

This report has been prepared at the request of the Board of Trustees to assist in administering the Fund. This valuation report may not be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Segal

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May 30, 2023

Retirement Board of the
Firemen’s Annuity and Benefit Fund of Chicago
20 South Clark Street, Suite 1400
Chicago, Illinois 60603-1899

Dear Board Members:

We are pleased to submit this annual Actuarial Valuation and Review as of December 31, 2022. It summarizes the actuarial data used in the valuation; establishes the net pension liability under Governmental Accounting Standards Board (GASB) Statement No. 67 as of December 31, 2022, the pension expense for the fiscal year ending December 31, 2022, under GASB Statement No. 68, the statutory funding contribution for tax levy year 2024 (i.e., payment year 2025), and the actuarially determined contribution for the year ending December 31, 2023; and analyzes the preceding year’s experience. We also provide projections of statutory contribution requirements under PA 99-0506.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Firemen’s Annuity and Benefit Fund of Chicago (FABF or Fund or Plan).

Asset and Membership Data

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

Actuarial Assumptions and Methods

The actuarial assumptions and methods are set by the Board of Trustees, based upon recommendations made by the Fund’s actuary. The demographic and economic assumptions and methods used for the December 31, 2022, actuarial valuation were based on an experience analysis covering the five-year period ending December 31, 2021, and were adopted by the Board, effective December 31, 2022. These actuarial assumptions and methods comply with the parameters set by the Actuarial Standards of Practice and the parameters for disclosure of GASB 67 and 68. Further, in our opinion, the assumptions as approved by the Board appear to be reasonably related to the experience of the Fund. The investment return assumption is based on the Fund being invested according to the target asset allocation in the Investment Policy Statement. **To the extent that the liquidation of assets to pay benefit payments and expenses requires a shift in investment allocation to more liquid, lower return asset classes, a lower discount rate will likely be required in the future.**

Funding Adequacy

FABF is funded by employer and member contributions in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/6), which was revised on May 30, 2016, by Public Act 99-0506. Employer contributions are calculated as the sum of the employer normal cost for that fiscal year plus an amount determined as a level percent of payroll sufficient to bring the total assets of the Fund up to 90% of the actuarial accrued liability by the end of 2055. **FABF is a severly underfunded plan. The funded ratio is only 18.8% using fair value of assets and the unfunded actuarial accrued liability is $5.86 billion as of December 31, 2022. We strongly recommend an actuarial funding method that targets 100% funding where payments at least cover the normal cost plus interest on the unfunded actuarial liability and a portion of the principal balance.** The timing of contributions is critical; cash flow strain may create a situation where assets must be liquidated at inoportune times in order to satisfy the payment of benefits. If the Fund becomes insolvent, the employer will be required to make contributions on a "pay as you go" basis, which means the employer would have to pay all benefits as they become due.

Financial Results and Membership Data

This report includes the following schedules, as prepared by Segal, for the Actuarial and Financial sections of the Comprehensive Annual Financial Report:

- Actuarial
  - Active Member Valuation Data
  - Retirees and Beneficiaries Added to and Removed from Rolls
  - Solvency Test
  - Analysis of Financial Experience
- Financial
  - Schedule of Funding Progress
  - Schedule of Employer Contributions

Limitation of Actuarial Measurements

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

Qualifications

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

Sincerely,

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

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Section 1: Actuarial Valuation Summary

Purpose

This report has been prepared by Segal to present a valuation of the Firemen's Annuity and Benefit Fund of Chicago (FABF or Fund or Plan) as of December 31, 2022. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Fund, as outlined in 40 ILCS 5/6 and administered by the Retirement Board;
- The characteristics of covered active members, inactive vested members, and retirees and beneficiaries as of December 31, 2022, provided by FABF staff;
- The assets of the Plan as of December 31, 2022, provided by FABF staff;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Valuation Highlights

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

1. **FABF is a severely underfunded plan. The funded ratio is only 18.8% using fair value of assets and the unfunded actuarial accrued liability is $5.86 billion as of December 31, 2022. Even under the statutory funding schedule, the funded ratio is projected to remain below 50% through 2043. We strongly recommend an actuarial funding method that targets 100% funding where payments at least cover the normal cost plus interest on the unfunded actuarial liability and a portion of the principal balance.**

2. An experience review was performed after the last valuation. As a result of this study, the following assumption changes have been adopted for this valuation:

    a. Inflation was increased from 2.25% to 2.50%.

    b. Tier 2 pay cap and Tier 2 COLA were increased from 1.125% to 1.25% per annum.

    c. Post-retirement mortality was changed from RP-2014 Blue Collar Healthy Annuitant Mortality Table, using 106% of rates for males and 98% of rates for females to PubS-2010 Retiree Amount-weighted Mortality Tables, using 119% of rates for males and 100% of rates for females.

    d. Beneficiary mortality was changed from RP-2014 Blue Collar Healthy Annuitant Mortality Table, using 106% of rates for males and 98% of rates for females to Pub-2010 Contingent Survivor Table Amount-weighted Mortality table, using 100% of rates for males and 113% of rates for females.

    e. Disabled mortality was changed from RP-2014 Blue Collar Healthy Annuitant Mortality Table, using 107% of rates for males and 99% of rates for females to PubS-2010 Disabled Retiree Amount-weighted Mortality Table.

    f. Pre-retirement mortality was changed from RP-2014 Blue Collar Healthy Annuitant Mortality Table, using 92% of rates for males and 100% of rates for females to PubS-2010 Employee Amount-weighted Mortality Table.

    g. Mortality improvement scale was changed from generational projection using Scale MP-2017 to Scale MP-2021.

    h. Retirement rates and rates of disability incidence were adjusted based on plan experience.

    As a result of these changes the actuarial accrued liability (AAL) increased by 0.8% and the normal cost increased by 1.8%.

3. Public Act 102-0884, effective May 13, 2022, provides that the minimum widow's annuity shall be no less than 150% (rather than 125%) of the Federal Poverty Level for all persons receiving widow's annuities on or after January 1, 2023. This Public Act was first reflected in this valuation and increases the AAL by $11.7 million.

4. For the year ended December 31, 2022, Segal has estimated the asset return on a fair value basis to be −12.1%. After gradual recognition of investment gains and losses under the asset smoothing method, the rate of return on the actuarial value of assets was 3.4%. This represents an experience loss when compared to the assumed rate of 6.75%. As of December 31, 2022, the actuarial value of assets ($1.499 billion) represents 110.4% of the fair value ($1.358 billion).

5. The fair value of assets as of December 31, 2022, is $1.358 billion, which includes $954 million of investments and $404 million of employer contributions receivable. As the employer contributions increase in the future, the receivable employer contributions will become a larger percentage of the reported fair value of assets in the near-term.

6. The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of December 31, 2022, is 20.8%, compared to 20.1% as of December 31, 2021. Using the fair value of assets, the funded ratio as of December 31, 2022, is 18.8%, compared to 20.9% as of December 31, 2021.

7. For the fiscal year ending December 31, 2022, the actuarially determined contribution (ADC) for pension benefits based on the Board's funding policy is $509,936,459. By statute, the expected employer contribution for 2022 (payable in 2023) was $398,641,353; the actual amount contributed for 2022 totaled $399,209,599. **Compared to the actuarially determined contribution of $509,936,459, the contribution deficiency is $110,726,860. Each year there is a contribution deficiency leads to an increased risk that there will be a deficiency in all future years.**

8. As part of the City's Pension Management Policy, the City of Chicago agreed to make a supplemental contribution of $38,720,000 during 2023. Since this is a supplemental contribution, it will not count toward the required statutory contribution. This supplemental contribution was not included in the fair value of assets as of December 31, 2022, but is included in the contributions for 2023 for projection purposes.

9. Variations in experience that result in the unfunded actuarial accrued liability (UAAL) or surplus should be funded over periods consistent with an appropriate balance between model policy objectives of demographic matching and volatility management. In systems where benefits are determined as a percentage of individual salary, the cost for changes in UAAL should emerge as a level percentage of member compensation. Segal recommends a review of the Board's current funding policy for determining the actuarially determined benchmark contribution with a goal of recommending changes that align with model practice for funding public pension plans.

10. For the fiscal year ending December 31, 2023, the ADC is $528,571,846, which compares to the statutory employer contribution for tax levy year 2023, payable in 2024, of $427,685,155 developed in the December 31, 2021, actuarial valuation. The expected employer statutory contribution for 2024, payable in 2025, developed in this December 31, 2022, actuarial valuation is $443,074,073.

11. Reported payroll for the active membership during 2022 was 5.1% less than projected from the December 31, 2021, actuarial valuation. These lower-than-expected salary increases generated an actuarial gain with respect to the UAAL.

12. When measuring pension liability for GASB purposes, the Entry Age Normal actuarial cost method is used, which is the same method that is used for funding purposes. Even though the statutorily required employer contributions under Public Act 99-0506 are expected to increase substantially over time, the Fiduciary Net Position is projected to remain positive and so there is no blending of the funding rate with a short term bond rate and the discount rate used is equivalent to the funding rate of 6.75%. This means that the total pension liability (TPL) measure for financial reporting shown in this report is the same as the AAL measure for funding.

13. The net pension liability (NPL) is equal to the difference between the TPL and the Plan's fiduciary net position. The Plan's fiduciary net position is equal to the fair value of assets. The NPL increased from $5,538,507,657 as of December 31, 2021, to $5,858,713,594 as of December 31, 2022. The increase in the NPL is primarily due to the lower-than-expected investment return.

14. As indicated in *Section 2, Subsection B* of this report, the total unrecognized investment loss as of December 31, 2022, is $141,085,887. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 6.75% per year (net of expenses) on a fair value basis will result in investment losses on the actuarial value of assets in the next few years.

15. The current method used to determine the actuarial value of assets yields an amount that is 110.4% of the fair value of assets as of December 31, 2022. Guidelines in Actuarial Standards of Practice No. 44 (Selection and Use of Asset Valuation Methods for Pension Valuations) recommend that asset values fall within a reasonable range around the corresponding fair value. We believe the actuarial asset method currently complies with these guidelines.

Summary of Key Valuation Results		
	2022	**2021**
Funding ratios as of December 31:		
Actuarial accrued liability	$7,216,409,422	$7,004,905,578
Fair value of assets	1,357,695,828	1,466,397,921
Unfunded actuarial accrued liability on a fair value basis	5,858,713,594	5,538,507,657
Funded ratio on a fair value basis	18.81%	20.93%
Actuarial value of assets	$1,498,781,715	$1,409,809,943
Unfunded actuarial accrued liability on an actuarial value basis	5,717,627,707	5,595,095,635
Funded ratio on an actuarial value basis	20.77%	20.13%
Book value of assets	$1,342,871,824	$1,267,487,166
Unfunded actuarial accrued liability on a book value basis	5,873,537,598	5,737,418,412
Funded ratio on a book value basis	18.61%	18.09%
Demographic data as of December 31:		
Number of retirees, survivors, disabilities and children	5,300	5,265
Number of inactive members	139	154
Number of active members	4,767	4,735
Total pensionable salary supplied by the Fund	$525,479,549	$520,047,197
Average pensionable salary	110,233	109,830

Contribution requirement for Fiscal (Tax Levy) Year:	**2024**	**2023**	**2022**
Statutory City contribution*	$443,074,073	$427,685,155	$398,641,353
Actuarially determined contribution		528,571,846	509,936,459

**As established by Public Act 99-0506, City contributions are shown in the year that they will be booked. The contributions will be paid in the following year.*

Five-Year Projection of Statutory Contributions

Following is a five-year projection of the statutory contributions.

Projected City Contributions as of December 31, 2022		
Tax Levy Year	Payment Year	Statutory Contribution
2022	2023	$398,641,353
2023	2024	427,685,155
2024	2025	443,074,073
2025	2026	454,890,895
2026	2027	465,328,663
2027 & thereafter	2028 & thereafter	78.35% of projected pay

The statutory contribution for payment year 2025 is $443,074,073, which is approximately 78.35% of projected payroll in 2025. For payment years after 2025, the projected city contribution is equal to 78.35% of projected payroll, which will increase as a dollar amount as payroll increases. Full projection results through 2055 are shown in *Section 4, Exhibit IX*. The statutory contribution set forth in this report represent the contribution amounts determined on a basis consistent with the state Statute and do not constitute a recommendation by Segal.

Important Information about Actuarial Valuations

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

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

Plan provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant information	An actuarial valuation for a plan is based on data provided to the actuary by the Fund staff. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial information	Part of the cost of a plan will be paid from existing assets — the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by Fund staff. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. In addition, the benefits forecasted for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions are selected within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Section 1: Actuarial Valuation Summary

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

The actuarial valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.
An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
If the Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.
While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
Segal's report shall be deemed to be final and accepted by the Board upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

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

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Deterministic cost projections are based on a proprietary forecasting model. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Section 2: Actuarial Valuation Results

A. Membership Data

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

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

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

Member Population: 2013 – 2022

Year Ended December 31	Active Members*	Inactive Members	Retirees, Survivors, Disabilities and Children	Ratio of Non-Actives to Actives
2013	4,685	57	4,640	1.00
2014	4,809	65	4,703	0.99
2015	4,735	76	4,729	1.01
2016	4,760	88	4,777	1.02
2017	4,613	77	4,878	1.07
2018	4,487	92	5,022	1.14
2019	4,630	95	5,128	1.13
2020	4,697	124	5,221	1.14
2021	4,735	154	5,265	1.14
2022	4,767	139	5,300	1.14

* Includes ordinary disability members who continue to accrue benefit service and additional liability while on ordinary disability.

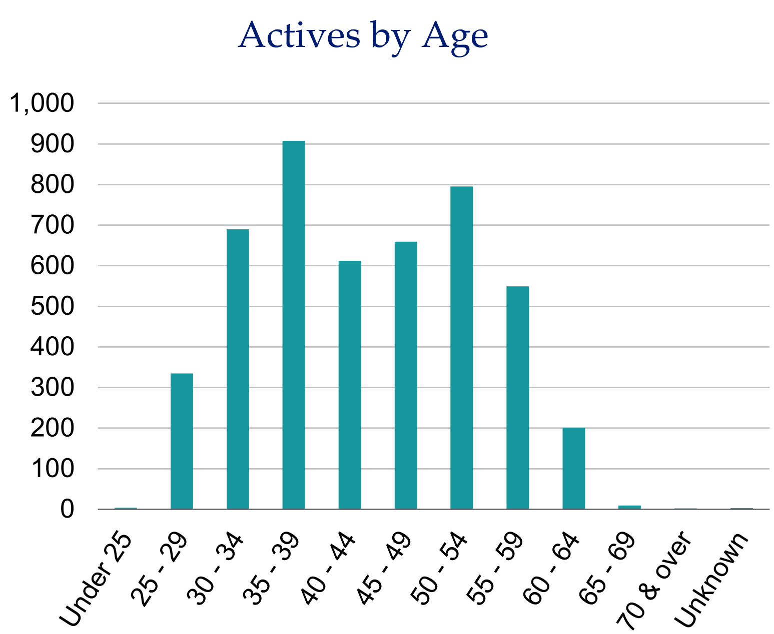
An historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

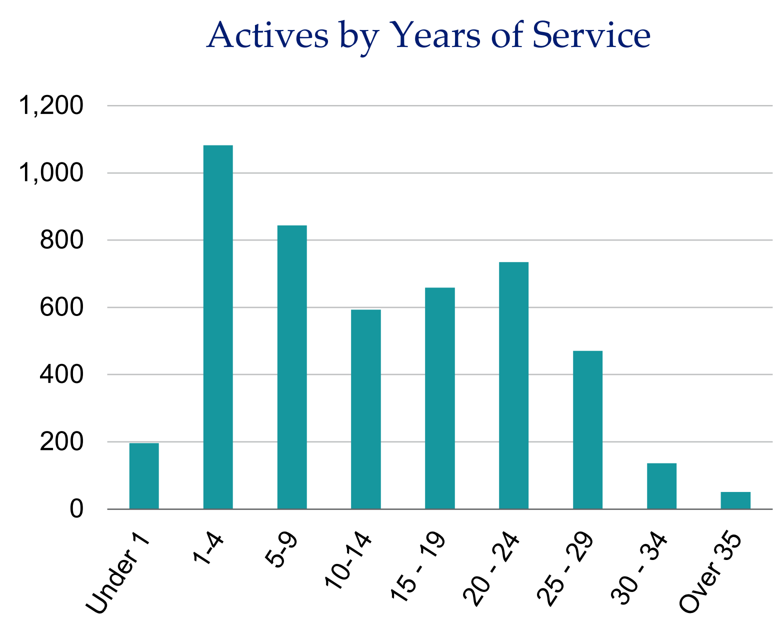
Active Members

Plan costs are affected by the age, years of service and salary of active members. In this year's valuation, there were 4,767 active members with an average age of 44.0, average years of service of 13.1, and average salary of $110,233. The 4,735 active members in the prior valuation had an average age of 44.0, average years of service of 13.1, and average salary of $109,830.

The active members included eight members receiving ordinary disability benefits in this year's valuation and twelve members receiving ordinary disability benefits in the prior valuation.

Distribution of Active Members as of December 31, 2022





Inactive Members

In this year's valuation, there were 36 members with a vested right to a deferred or immediate vested benefit. In addition, there were 103 members entitled to a return of their account balance.

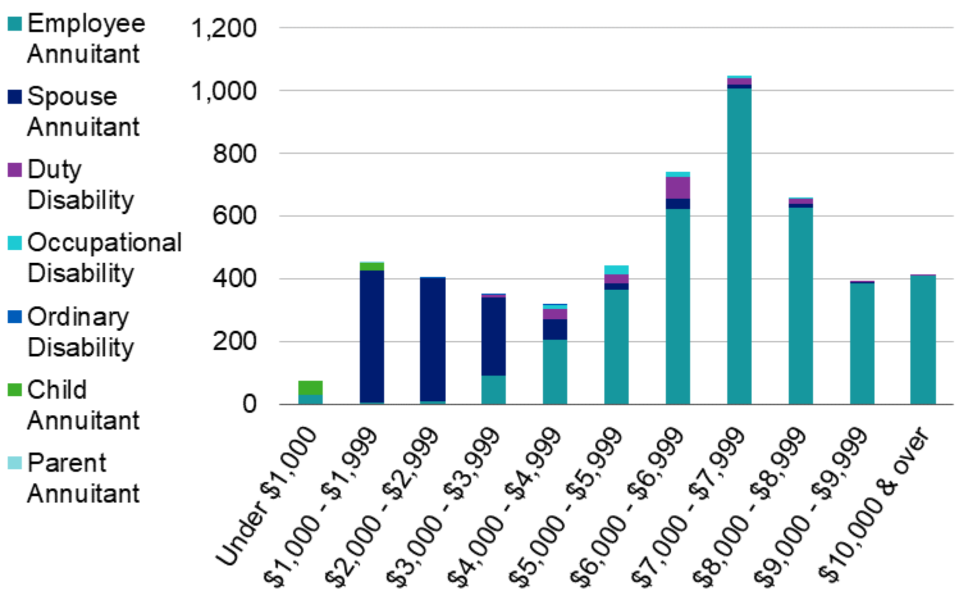
Retired Members and Survivors

As of December 31, 2022, 3,761 employee annuitants, 1,207 spouse annuitants, 184 duty disability retirees, 69 occupational disability, 8 ordinary disability retirees, 70 children, and one parent were receiving total monthly benefits of $33,306,555. For comparison, in the previous valuation, there were 3,681 employee annuitants, 1,221 spouse annuitants, 196 duty disability retirees, 80 occupational disability, 12 ordinary disability retirees, 74 children, and one parent were receiving total monthly benefits of $32,069,731.

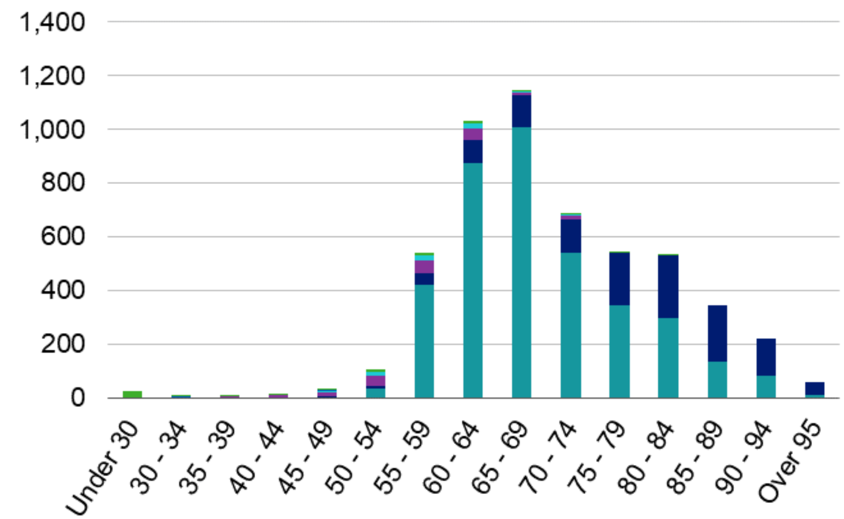
As of December 31, 2022, the average monthly benefit for service retiree members is $7,535, compared to $7,346 in the previous valuation. The average age for service retirees is 69.3 in the current valuation, compared with 69.2 in the prior valuation.

Distribution of Pensioners as of December 31, 2022

Pensioners by Monthly Amount



Pensioners by Age



B. Financial Information

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to fair value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize fair value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

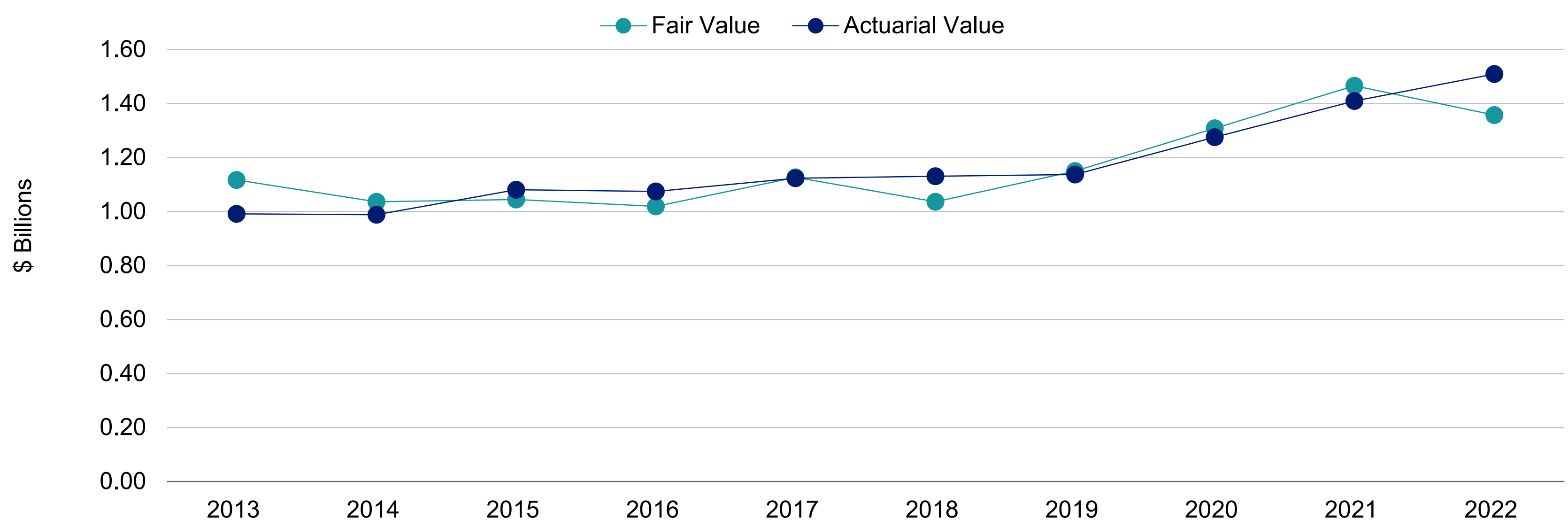
Determination of Actuarial Value of Assets
for Year Ended December 31, 2022 and December 31, 2021

				2022		2021
1.	Fair value of assets as of prior December 31			$1,466,397,921		$1,308,886,480
2.	Employer and employee contributions and other income			452,245,570		419,754,538
3.	Benefits and expenses			405,357,623		391,756,738
4.	Expected investment income			87,091,004		89,294,763
5.	Total investment income, including income for securities lending			(155,590,040)		129,513,641
6.	Investment gain/(loss) for the year ended December 31: **(5) − (4)**			(242,681,044)		40,218,878
7.	Fair value of assets as of December 31			1,357,695,828		1,466,397,921
8.	Calculation of unrecognized return	Original Amount	% Not Recognized		% Not Recognized	
	(a) Year ended December 31, 2022	($242,681,044)	80%	($194,144,835)		--
	(b) Year ended December 31, 2021	40,218,878	60%	24,131,328	80%	$32,175,102
	(c) Year ended December 31, 2020	25,941,752	40%	10,376,700	60%	15,565,050
	(d) Year ended December 31, 2019	92,754,599	20%	18,550,920	40%	37,101,840
	(e) Year ended December 31, 2018	(141,270,068)		0	20%	(28,254,014)
	(f) Total unrecognized return			(141,085,887)		56,587,978
9.	Total actuarial value of assets as of December 31: **(7) − (8f)**			$1,498,781,715		$1,409,809,943

Section 2: Actuarial Valuation Results

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

Actuarial Value of Assets vs. Fair Value of Assets as of December 31, 2013 – 2022



C. Actuarial Experience

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

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

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

The total loss is $10,821,355; $30,366,135 in net gains from sources other than investments, offset by investment losses of $41,187,490 on an actuarial basis. The net experience variation from individual sources other than investments was approximately 0.4% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

Actuarial Experience for Year Ended December 31, 2022

1.	Net gain/(loss) from investments	($41,187,490)
2.	Net gain/(loss) from administrative expenses	(238,633)
3.	Net gain/(loss) from other experience	30,604,768
4.	Net experience gain/(loss): **(1) + (2) + (3)**	($10,821,355)

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the FABF's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets for the 2022 plan year was 6.75%. The actual rate of return on an actuarial basis for the 2022 plan year was 3.41%.

Since the actual return for the year was less than the assumed return, the Fund experienced an actuarial loss during the year ended December 31, 2022, with regard to its investments.

Investment Experience

1.	Actual return	$42,083,825
2.	Average value of assets	1,233,649,117
3.	Actual rate of return: **(1) ÷ (2)**	3.41%
4.	Assumed rate of return	6.75%
5.	Expected return: **(2) x (4)**	$83,271,315
6.	Actuarial gain/(loss): **(1) − (5)**	($41,187,490)

Section 2: Actuarial Valuation Results

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

Investment Return – Actuarial Value vs. Fair Value: 2013 – 2022

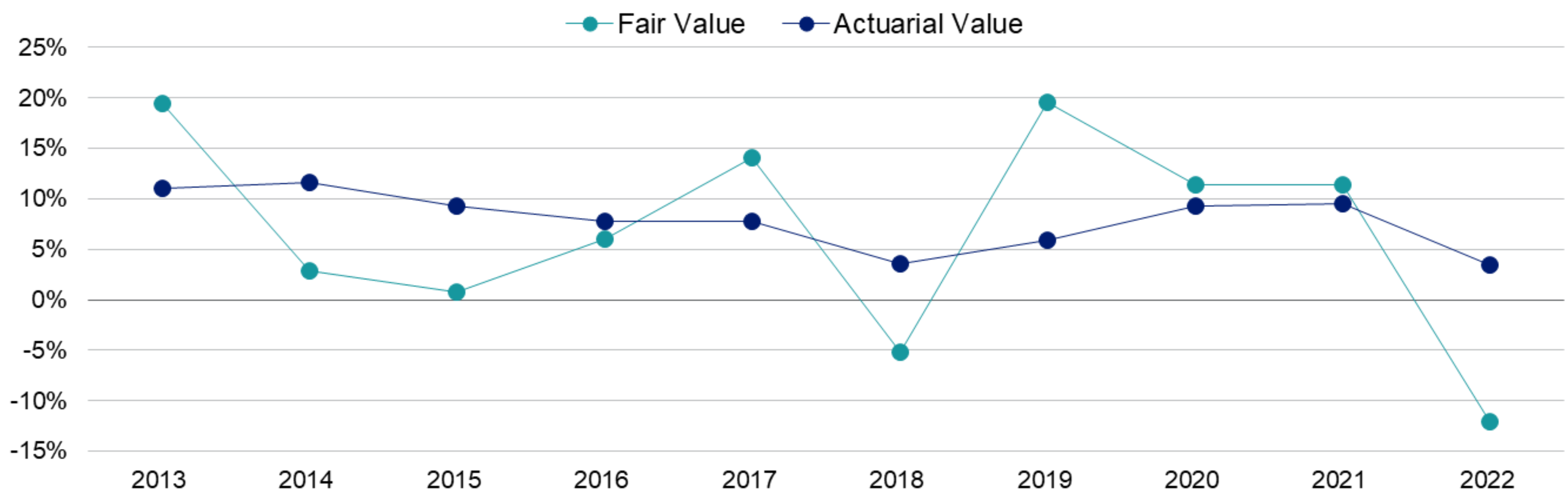
Year Ended December 31	Actuarial Value	Fair Value
2013	11.07%	19.45%
2014	11.60%	2.91%
2015	9.24%	0.73%
2016	7.79%	6.08%
2017	7.75%	14.02%
2018	3.55%	(5.23%)
2019	5.87%	19.59%
2020	9.30%	11.35%
2021	9.57%	11.37%
2022	3.41%	(12.06%)
Average Returns		
Last 5 years	6.18%	3.45%
Last 10 years	7.74%	5.91%

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the fair value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs. This chart illustrates that the asset returns on a fair value basis tend to be more volatile than asset returns on an actuarial basis.

Administrative Expenses

Administrative expenses for the year ended December 31, 2022, totaled $3,390,041 compared to the assumption of $3,151,408. This resulted in a loss of $238,633 for the year, when adjusted for timing.

Fair and Actuarial Rates of Return for Years Ended December 31, 2013 – 2022



Other Experience

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

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

The net gain from this other experience for the year ended December 31, 2022, amounted to $30,604,768, which is approximately 0.4% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Fund for the year ended December 31, 2022, is shown in the chart below.

Experience Gain/(Loss) Due to Demographics for Year Ended December 31, 2022

1.	More turnover than expected	$4,991,305
2.	More or earlier retirement than expected	(15,579,360)
3.	Less deaths than expected among retirees and beneficiaries	(10,657,102)
4.	Smaller salary/service increases than expected for continuing actives	65,806,784
5.	New entrants	(200,039)
6.	Miscellaneous	(13,756,820)
7.	Total	30,604,768

D. Development of Employer Costs

Statutory Contribution

The city is required to make level percent of pay contributions for plan years 2020 through 2055 that, along with member contributions and investment earnings, are expected to generate a projected funded ratio of 90% by the end of the 2055 plan year. The projections are based on an open group, level percent of pay financing and the entry-age normal cost method.

Statutory Contribution for Tax Levy Year 2024

		Amount	% of Payroll
1.	Projected normal cost and administrative expenses for 2024	$122,882,598	21.73%
2.	Projected actuarial accrued liability at December 31, 2023	7,398,088,685	
3.	Projected actuarial value of assets at December 31, 2023	1,650,908,921	
4.	Projected unfunded/(overfunded) actuarial accrued liability: **(2) − (3)**	5,747,179,764	
5.	Estimated member contributions during 2024	51,746,540	
6.	Projected payroll	565,512,543	
7.	Estimated city contribution for tax levy year 2024 (payment year 2025)	443,074,073	78.35%

Actuarially Determined Contribution

The amount of actuarially determined contribution is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the actuarially determined contribution of 95.30% of payroll.

The actuarially determined contribution is based on a 30-year, level dollar amortization of the unfunded actuarial accrued liability (UAAL). A 30-year "rolling" amortization will never fully fund the UAAL.

Variations in experience that result in UAAL or surplus should be funded over periods consistent with an appropriate balance between model policy objectives of demographic matching and volatility management.

In systems where benefits are determined as a percentage of individual salary, the cost for changes in UAAL should emerge as a level percentage of member compensation.

Segal recommends a review of the Board's current funding policy for determining the actuarially determined benchmark contribution with a goal of recommending changes that align with model practice for funding public pension plans.

Actuarially Determined Contribution

		Year Beginning January 1, 2023	
		Amount	**% of Payroll**
1.	Total normal cost*	$124,140,653	22.38%
2.	Administrative expenses	3,390,040	0.61%
3.	Expected employee contributions**	(50,754,077)	(9.15%)
4.	Employer normal cost: **(1) + (2) + (3)**	76,776,616	13.84%
5.	Employer normal cost, adjusted for timing***	79,325,516	14.30%
6.	Actuarial accrued liability	7,216,409,422	
7.	Actuarial value of assets	1,498,781,715	
8.	Unfunded/(overfunded) actuarial accrued liability: **(6) − (7)**	5,717,627,707	
9.	Payment on unfunded actuarial accrued liability, adjusted for timing***	449,246,330	81.00%
10.	Actuarially determined contribution: **(5) + (9)**	$528,571,846	95.30%
11.	Projected payroll	$554,641,825	

Reflects timing adjustment to the middle of the year

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

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

Section 2: Actuarial Valuation Results

The contribution requirements as of December 31, 2022, are based on all of the data described in the previous sections, the actuarial assumptions described in *Section 4*, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses, and changes in the actuarial assumptions.

Reconciliation of Actuarially Determined Contribution

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

Reconciliation of Actuarially Determined Contribution from December 31, 2021 to December 31, 2022

Actuarially Determined Contribution as of December 31, 2021	$509,936,459
Effect of plan change	$922,211
Effect of change in asset method	0
Effect of expected change in amortization payment due to payroll growth	0
Effect of rolling amortization period	(4,972,282)
Effect of change in administrative expense assumption	328,767
Effect of change in other actuarial assumptions	6,564,155
Effect of contributions (more)/less than actuarially determined contribution	8,924,890
Effect of investment (gain)/loss	3,272,423
Effect of other (gains)/losses on accrued liability	(2,412,646)
Effect of net other changes	6,007,869
Total change	$18,635,387
Actuarially Determined Contribution as of December 31, 2022	$528,571,846

E. Risk

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

This report does not contain a detailed analysis of the potential range of future measurements, but does include a brief discussion of some risks that may affect the Plan.

We also strongly recommend that a stochastic analysis be prepared for FABF in the context of a full risk assessment. *A stochastic analysis would involve the projection of thousands of investment return trials over the full projection period. The stochastic projections would show the most likely range of outcomes as well as the best and worst case scenarios for FABF. The stochastic analysis would also provide the range of employer contributions and the probability of employer contributions exceeding certain thresholds.*

Investment Risk (the risk that returns will be different than expected)

If the actual return on the fair value of assets for the next Plan Year were 1% different from the assumed (either higher or lower), the projected unfunded actuarial liability would change by less than 0.1%, or about $2.2 million. Given the relatively low current funded position of FABF, a change in the fair value of assets one way or the other does not have a significant impact on the unfunded actuarial liability.

Since the Plan's assets are much larger than contributions, investment performance may create significant volatility in contribution requirements. For example, for each 1% difference in return from the assumed return, the projected employer contributions for the 2024 Fiscal Year would change by approximately $0.7 million.

The fair value rate of return over the last ten years has ranged from a low of -12.1% to a high of 19.6%, with an average of 5.9%.

Longevity Risk (the risk that mortality experience will be different than expected)

The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the FABF funding policy and statutorily required contribution amounts.

Contribution Risk

The FABF funding policy contribution requires payment of the normal cost and an amortization payment according to a schedule sufficient to become 90% funded by 2055. The statutorily required amount systematically underfunds FABF. Among other things, it: a) is based on a funding target of 90% of the actuarial accrued liability (as opposed to 100%); and b) is based on a level percent of payroll, which back loads the contributions.

If contributions fall short of the statutory schedule included in Public Act 99-0506, the risk of insolvency increases substantially. If contributions fall significantly short of that schedule, insolvency is almost inevitable.

Even if contributions follow this schedule and future experience matches the current assumptions, we project the unfunded actuarial accrued liability will not be paid off, given the 90% funding target.

Demographic Risk (the risk that participant experience will be different than assumed)

Examples of this risk include:

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

Actual Experience Over the Recent Past and Implications for the Future

Experience can help demonstrate the sensitivity of key results to the Plan's actual experience:

- The investment gain/(loss) for a year has ranged from a gain of $105.6 million to a loss of $141.3 million since 2018.
- The non-investment gain/(loss) for a year has ranged from a gain of $62.7 million to a loss of $181.5 million since 2018.
- The funded percentage on the actuarial value of assets has ranged from a low of 18.18% to a high of 24.43% since 2013.

Maturity Measures

As pension plans mature, the cash need to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the Plan's asset allocation is aligned to meet emerging pension liabilities.

Currently the Plan has a non-active to active ratio of 1.14. For the prior year, contributions received were $46.9 million greater than benefits paid and administrative expenses. As the Plan continues to mature, more cash will be needed from the investment portfolio to meet benefit payments.

The following chart compares this year's maturity measures to the prior year:

Maturity Measures		
Information as of December 31:	**2022**	**2021**
Ratio of Fair Value of Assets to Covered Payroll	2.58	2.82
Ratio of Actuarial Accrued Liability to Covered Payroll	13.73	13.47
Ratio of Actives to Retirees and Beneficiaries	0.90	0.90
Ratio of Net Cash Flow to Fair Value of Assets	3.45%	1.91%

Section 3: Supplemental Information

Exhibit A – Table of Plan Coverage

	Year Ended December 31		
Category	**2022**	**2021**	**Change From Prior Year**
Active members in valuation:			
Number	4,767	4,735	0.7%
Average age	44.0	44.0	0.0
Average years of service	13.1	13.1	0.0
Total salary supplied by the Fund*	$525,479,549	$520,047,197	1.0%
Average salary*	$110,233	$109,830	0.4%
Total active vested members	2,645	2,734	-3.3%
Male members	4,354	4,327	0.6%
Female members	411	408	0.7%
Unknown sex	2	0	N/A
Tier 1 members	2,578	2,731	-5.6%
Tier 2 members	2,189	2,004	9.2%
Inactive members	139	154	-9.7%
Retirees:			
Number in pay status	3,761	3,681	2.2%
Average age	69.3	69.2	0.1
Average monthly benefit	$7,535	$7,346	2.6%
Survivors**:			
Number in pay status	1,207	1,221	-1.1%
Average age	79	78.9	0.1
Average monthly benefit	$2,737	$2,625	4.3%
Disability annuitants:			
Ordinary	8	12	-33.3%
Occupational	69	80	-13.8%
Duty	184	196	-6.1%
Children	70	74	-5.4%
Parents	1	1	0.0%
Total number of members	**10,206**	**10,154**	**0.5%**

**Based on regular pay rate provided by the fund office and duty disability pay of $316.67 per month per active.*
***Includes Widows' Compensation annuities*

Exhibit B.1 – All Members in Active Service as of December 31, 2022

All Members in Active Service as of December 31, 2022 By Age, Years of Service, and Total Monthly Salary

		Years of Service								
Age	**Total**	**Under 1**	**1 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 & Over**
Under 20	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
20 – 24	4	1	3	-	-	-	-	-	-	-
	$26,804	$5,522	$21,282	-	-	-	-	-	-	-
25 – 29	335	65	221	49	-	-	-	-	-	-
	$2,409,715	$360,288	$1,636,366	$413,062	-	-	-	-	-	-
30 – 34	690	70	436	184	-	-	-	-	-	-
	$5,175,097	$386,552	$3,227,235	$1,561,310	-	-	-	-	-	-
35 – 39	908	49	327	338	185	9	-	-	-	-
	$7,342,949	$270,586	$2,442,096	$2,886,389	$1,664,177	$79,701	-	-	-	-
40 – 44	612	7	76	217	231	66	15	-	-	-
	$5,346,789	$38,655	$583,495	$1,856,205	$2,089,667	$626,798	$151,969	-	-	-
45 – 49	659	1	11	48	145	164	214	76	-	-
	$6,634,387	$5,522	$80,248	$411,285	$1,333,047	$1,584,407	$2,329,400	$890,477	-	-
50 – 54	795	2	5	6	31	218	312	209	12	-
	$8,532,915	$11,044	$40,103	$51,126	$280,795	$2,103,725	$3,435,262	$2,469,587	$141,273	-
55 – 59	549	-	-	1	1	151	151	136	83	26
	$5,972,111	-	-	$11,226	$9,019	$1,425,145	$1,593,011	$1,550,056	$1,045,299	$338,354
60 – 64	201	-	1	1	-	51	43	49	39	17
	$2,183,347	-	$7,368	$8,738	-	$476,556	$435,818	$542,922	$490,905	$221,041
65 – 69	9	-	-	-	-	-	-	1	2	6
	$121,086	-	-	-	-	-	-	$12,240	$26,699	$82,147
70 & Over	2	-	-	-	-	-	-	-	-	2
	$26,699	-	-	-	-	-	-	-	-	$26,699
Unknown	3	1	2	-	-	-	-	-	-	-
	$18,065	$5,522	$12,543	-	-	-	-	-	-	-
Total	4,767	196	1,082	844	593	659	735	471	136	51
	$43,789,962	$1,083,692	$8,050,734	$7,199,340	$5,376,705	$6,296,332	$7,945,459	$5,465,282	$1,704,177	$668,242

Exhibit B.2 – Male Members in Active Service as of December 31, 2022

Male Members in Active Service as of December 31, 2022 By Age, Years of Service, and Total Monthly Salary

		Years of Service								
Age	**Total**	**Under 1**	**1 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 & Over**
Under 20	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
20 – 24	3	-	3	-	-	-	-	-	-	-
	$21,282	-	$21,282	-	-	-	-	-	-	-
25 – 29	311	58	204	49	-	-	-	-	-	-
	$2,247,398	$321,632	$1,512,704	$413,062	-	-	-	-	-	-
30 – 34	626	62	389	175	-	-	-	-	-	-
	$4,708,901	$342,375	$2,880,627	$1,485,900	-	-	-	-	-	-
35 – 39	809	46	291	292	171	9	-	-	-	-
	$6,530,915	$254,020	$2,169,286	$2,491,470	$1,536,439	$79,701	-	-	-	-
40 – 44	537	2	61	191	211	59	13	-	-	-
	$4,709,938	$11,044	$468,090	$1,632,048	$1,910,411	$559,566	$128,778	-	-	-
45 – 49	602	-	7	40	131	155	193	76	-	-
	$6,087,459	-	$51,472	$342,871	$1,201,249	$1,496,830	$2,104,559	$890,477	-	-
50 – 54	754	1	4	5	26	205	300	201	12	-
	$8,089,667	$5,522	$31,366	$42,388	$233,510	$1,975,396	$3,288,390	$2,371,821	$141,273	-
55 – 59	519	-	-	1	1	143	138	132	78	26
	$5,624,436	-	-	$11,226	$9,019	$1,343,122	$1,449,460	$1,505,806	$967,448	$338,354
60 – 64	183	-	1	1	-	47	38	47	32	17
	$1,989,159	-	$7,368	$8,738	-	$441,492	$386,441	$523,677	$400,402	$221,041
65 – 69	7	-	-	-	-	-	-	1	1	5
	$90,118	-	-	-	-	-	-	$12,240	$13,350	$64,528
70 & Over	2	-	-	-	-	-	-	-	-	2
	$26,699	-	-	-	-	-	-	-	-	$26,699
Unknown	1	-	-	-	-	-	-	-	-	-
	$7,021	-	-	-	-	-	-	-	-	-
Total	4,354	169	961	754	540	618	682	457	123	50
	$40,132,992	$934,593	$7,149,214	$6,427,703	$4,890,628	$5,896,107	$7,357,629	$5,304,021	$1,522,473	$650,623

Exhibit B.3 – Female Members in Active Service as of December 31, 2022

Female Members in Active Service as of December 31, 2022 By Age, Years of Service, and Total Monthly Salary

		Years of Service								
Age	**Total**	**Under 1**	**1 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 & Over**
Under 20	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
20 – 24	1	1	-	-	-	-	-	-	-	-
	$5,522	$5,522	-	-	-	-	-	-	-	-
25 – 29	24	7	17	-	-	-	-	-	-	-
	$162,317	$38,655	$123,662	-	-	-	-	-	-	-
30 – 34	63	7	47	9	-	-	-	-	-	-
	$460,673	$38,655	$346,608	$75,410	-	-	-	-	-	-
35 – 39	99	3	36	46	14	-	-	-	-	-
	$812,034	$16,567	$272,810	$394,919	$127,738	-	-	-	-	-
40 – 44	75	5	15	26	20	7	2	-	-	-
	$636,851	$27,611	$115,405	$224,156	$179,256	$67,232	$23,191	-	-	-
45 – 49	57	1	4	8	14	9	21	-	-	-
	$546,927	$5,522	$28,776	$68,414	$131,797	$87,577	$224,841	-	-	-
50 – 54	41	1	1	1	5	13	12	8	-	-
	$443,248	$5,522	$8,738	$8,738	$47,285	$128,329	$146,871	$97,766	-	-
55 – 59	30	-	-	-	-	8	13	4	5	-
	$347,675	-	-	-	-	$82,023	$143,551	$44,250	$77,851	-
60 – 64	18	-	-	-	-	4	5	2	7	-
	$194,188	-	-	-	-	$35,064	$49,376	$19,245	$90,503	-
65 – 69	2	-	-	-	-	-	-	-	1	1
	$30,968	-	-	-	-	-	-	-	$13,350	$17,619
70 & Over	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Unknown	1	-	1	-	-	-	-	-	-	-
	$5,522	-	$5,522	-	-	-	-	-	-	-
Total	411	25	121	90	53	41	53	14	13	1
	$3,645,926	$138,054	$901,520	$771,637	$486,077	$400,224	$587,830	$161,261	$181,704	$17,619

Exhibit C.1 – Number of Refunds to Male Employees

Number of Refunds Made During Year to Male Employees

	Length of Service at Date of Refund						
Age at Date of Refund	**Under 1 Year**	**Between 1 and 2**	**Between 2 and 3**	**Between 3 and 4**	**Between 4 and 5**	**5 and Over**	**Total**
Under 20	-	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-	-
30 – 34	-	-	1	1	1	-	3
35 – 39	1	-	-	-	-	4	5
40 – 44	-	-	-	-	-	1	1
45 – 49	-	-	-	-	-	-	-
50 – 54	-	-	-	-	-	-	-
55 – 59	-	-	-	-	-	-	-
60 & Over	-	-	-	-	-	-	-
Unknown	-	-	-	-	-	-	-
Total	1	-	1	1	1	5	9

Exhibit C.2 – Number of Refunds to Female Employees

Number of Refunds Made During Year to Female Employees

	Length of Service at Date of Refund						
Age at Date of Refund	**Under 1 Year**	**Between 1 and 2**	**Between 2 and 3**	**Between 3 and 4**	**Between 4 and 5**	**5 and Over**	**Total**
Under 20	-	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-	-
35 – 39	-	-	-	-	-	-	-
40 – 44	-	-	-	-	-	-	-
45 – 49	-	-	-	-	-	-	-
50 – 54	-	-	-	-	-	1	1
55 – 59	-	-	-	-	-	-	-
60 & Over	-	-	-	-	-	-	-
Unknown	-	-	-	-	-	-	-
Total	-	-	-	-	-	1	1

Exhibit D.1 – Service Retirement Annuitants as of December 31, 2022

Service Retirement Annuitants as of December 31, 2022 By Age and Annual Benefit

	Male		Female	
Age	**Number**	**Annual Payments**	**Number**	**Annual Payments**
Under 50	1	$9,845	-	-
50 – 54	31	1,971,505	2	$82,590
55 – 59	373	33,753,631	49	4,214,032
60 – 64	812	75,023,026	64	5,443,969
65 – 69	961	91,686,329	47	4,164,401
70 – 74	527	48,137,247	14	1,202,574
75 – 79	340	31,337,005	7	518,476
80 – 84	296	25,350,420	3	235,509
85 – 89	137	10,622,485	-	-
90 – 94	85	5,668,993	-	-
95 – 99	12	659,886	-	-
100 & over	-	-	-	-
Total	3,575	$324,220,372	186	$15,861,552

Exhibit D.2 – Spouse Annuitants as of December 31, 2022

Spouse Annuitants* as of December 31, 2022 By Age and Annual Benefit

	Male		Female	
Age	**Number**	**Annual Payments**	**Number**	**Annual Payments**
Under 45	-	-	1	$31,103
45 – 49	-	-	6	239,848
50 – 54	-	-	11	476,257
55 – 59	2	$66,036	40	1,269,380
60 – 64	1	16,988	82	3,074,020
65 – 69	6	237,333	114	4,392,593
70 – 74	3	66,819	122	4,428,183
75 – 79	-	-	194	6,632,306
80 – 84	2	85,018	230	7,431,021
85 – 89	1	16,988	209	6,838,903
90 – 94	-	-	134	3,328,601
95 – 99	1	27,040	42	858,937
100 & over	-	-	5	90,627
Total	16	$516,221	1,191	$39,120,894

*Includes Widows' Compensation annuities

Exhibit E – Statistics for Miscellaneous Annuitants

Statistics for Miscellaneous Annuitants as of December 31, 2022

Type	Number	Annual Payments
Children's annuities	70	$922,851
Widows' compensation annuities	69	5,815,450
Ordinary disability benefits	8	341,562
Occupational disease disability benefits	69	4,907,544
Duty disability benefits	184	13,770,875
Parent annuities	1	16,785
Total	401	$25,775,067

Exhibit F.1 – Male Participants Receiving Duty Disability

Male Participants Receiving Duty Disability

	Length of Service as of December 31, 2022													
	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment
Under 40	--	--	--	--	4	$307,973	--	--	1	$88,841	--	--	**5**	**$396,813**
40 – 44	--	--	--	--	2	$151,788	3	$231,939	2	$152,111	--	--	**7**	**$535,838**
45 – 49	--	--	--	--	1	$75,579	3	$233,811	4	$295,028	2	$143,950	**10**	**$748,368**
50 – 54	--	--	--	--	--	--	1	$81,173	6	$473,974	22	$1,619,425	**29**	**$2,174,572**
55 – 59	--	--	--	--	--	--			7	$534,855	32	$2,554,991	**39**	**$3,089,846**
60 & Over	1	$73,881	--	--	--	--	1	$75,246	7	$530,693	47	$3,304,037	**56**	**$3,983,856**
Total	**1**	**$73,881**	**--**	**--**	**7**	**$535,340**	**8**	**$622,169**	**27**	**$2,075,501**	**103**	**$7,622,403**	**146**	**$10,929,293**

Exhibit F.2 – Female Participants Receiving Duty Disability

Female Participants Receiving Duty Disability

	Length of Service as of December 31, 2022													
	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment
Under 40	--	--	1	$71,597	3	$229,176	--	--	--	--	--	--	**4**	**$300,773**
40 – 44	--	--	--	--	--	--	2	$144,321	--	--	--	--	**2**	**$144,321**
45 – 49	--	--	--	--	--	--	--	--	2	$144,867	1	$78,887	**3**	**$223,754**
50 – 54	--	--	--	--	--	--	--	--	4	$345,930	6	$527,588	**10**	**$873,518**
55 – 59	--	--	--	--	--	--	--	--	1	$81,947	6	$552,366	**7**	**$634,313**
60 & Over	--	--	--	--	--	--	--	--	1	$42,124	11	$622,780	**12**	**$664,904**
Total	--	--	**1**	**$71,597**	**3**	**$229,176**	**2**	**$144,321**	**8**	**$614,868**	**24**	**$1,781,621**	**38**	**$2,841,582**

Exhibit F.3 – Male Participants Receiving Occupational Disability

Male Participants Receiving Occupational Disability

	Length of Service as of December 31, 2022													
	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment
Under 40	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40 – 44	--	--	--	--	--	--	--	--	1	$56,896	--	--	**1**	**$56,896**
45 – 49	--	--	--	--	--	--	--	--	1	$65,806	5	$382,444	**6**	**$448,250**
50 – 54	--	--	--	--	--	--	--	--	2	$121,568	9	$658,281	**11**	**$779,849**
55 – 59	--	--	--	--	--	--	--	--	--	--	19	$1,372,011	**19**	**$1,372,011**
60 & Over	--	--	--	--	--	--	--	--	2	$121,753	20	$1,376,953	**22**	**$1,498,706**
Total	**--**	**--**	**--**	**--**	--	--	--	--	**6**	**$366,023**	**53**	**$3,789,689**	**59**	**$4,155,712**

Exhibit F.4 – Female Participants Receiving Occupational Disability

Female Participants Receiving Occupational Disability

	Length of Service as of December 31, 2022													
	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment
Under 40	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
40 – 44	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
45 – 49	--	--	--	--	--	--	--	--	1	$78,884	1	$77,526	**2**	**$156,409**
50 – 54	--	--	--	--	--	--	--	--	--	--	2	$157,729	**2**	**$157,729**
55 – 59	--	--	--	--	--	--	--	--	--	--	1	$50,164	**1**	**$50,164**
60 & Over	--	--	--	--	--	--	--	--	--	--	5	$387,530	**5**	**$387,530**
Total	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**1**	**$78,884**	**9**	**$672,948**	**10**	**$751,832**

Exhibit F.5 – Male Participants Receiving Ordinary Disability

Male Participants Receiving Ordinary Disability

	Length of Service as of December 31, 2022													
	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment
Under 40	--	--	1	$34,542	--	--	--	--	--	--	--	--	**1**	**$34,542**
40 – 44	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
45 – 49	--	--	--	--	1	$41,120	--	--	1	$44,992	--	--	**2**	**$86,111**
50 – 54	--	--	--	--	--	--	--	--	1	$44,992	--	--	**1**	**$44,992**
55 – 59	--	--	--	--	--	--	--	--	2	$84,015	--	--	**2**	**$84,015**
60 & Over	--	--	--	--	--	--	--	--	1	$49,592	--	--	**1**	**$49,592**
Total	--	--	**1**	**$34,542**	**1**	**$41,120**	**--**	**--**	**5**	**$223,591**	--	--	**7**	**$299,252**

Exhibit F.6 – Female Participants Receiving Ordinary Disability

Female Participants Receiving Ordinary Disability

	Length of Service as of December 31, 2022													
	Under 1 Year		1 to 4		5 to 9		10 to 14		15 to 19		20 & Over		Total	
Attained Age	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment	No	Annual Payment
Under 40	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
40 – 44	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
45 – 49	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
50 – 54	--	--	--	--	--	--	--	--	1	$42,310	--	--	**1**	**$42,310**
55 – 59	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
60 & Over	--	--	--	--	--	--	--	--	--	--	--	--	**--**	**--**
Total	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**1**	**$42,310**	**--**	**--**	**1**	**$42,310**

Exhibit G.1 – Reconciliation of Active and Inactive Member Data

	Unknown	Male	Female	Total
Active Members				
Number as of December 31, 2021	-	4,327	408	4,735
Increases:				
Members added during year	2	172	25	199
Members returning from inactive or disability status	-	37	2	39
Data Corrections	-	1	-	1
Total	2	210	27	239
Decreases				
Withdrawal (with refunds)	-	5	1	6
Withdrawal (without refunds)	-	29	4	33
Ordinary disability benefit	-	-	-	-
Occupational disease disability benefit	-	7	-	7
Duty disability benefit	-	17	6	23
Retirements	-	121	10	131
Deaths (occupational)	-	-	-	-
Deaths (non-occupational)	-	4	2	6
Data Corrections	-	-	1	1
Total	-	183	24	207
Number as of December 31, 2022	2	4,354	411	4,767
Inactive Members				
Number as of December 31, 2021	3	128	23	154
Additions	3	32	4	39
Decreases	-	50	4	54
Number as of December 31, 2022	6	110	23	139

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Exhibit G.2 – Reconciliation of Annuitant and Beneficiary Data

	Number as of December 31, 2021	Additions during 2022	Decreases during 2022	Number as of December 31, 2022
Service retirement annuities	3,681	137	57	3,761
Widow annuities	1,151	65	78	1,138
Children annuities	74	5	9	70
Parent annuities	1	0	0	1
Ordinary disability benefit	12	1	5	8
Occupational disease disability benefit*	80	7	18	69
Duty disability benefit*	196	25	37	184
Widows' compensation annuities	70	1	2	69

**Decreases include members who had previously transitioned from receiving a disability benefit to a service retirement annuity.*

Exhibit H.1 – Summary Statement of Income and Expenses on Fair Value Basis

	Year Ended December 31, 2022		Year Ended December 31, 2021	
Net assets at fair value at the beginning of the year		$1,466,397,921		$1,308,886,480
Contribution income:				
Employer contributions	$399,209,599		$367,481,614	
Employee contributions	53,030,821		52,268,136	
Miscellaneous revenue	5,150		4,788	
Net contribution income		452,245,570		419,754,538
Investment income:				
Interest, dividends and other income	$29,247,529		$23,044,164	
Asset appreciation	(176,650,618)		114,467,689	
Less investment fees	(8,186,951)		(7,998,212)	
Net investment income		(155,590,040)		129,513,641
Total income available for benefits		$296,655,530		$549,268,179
Less benefit payments:				
Annuity payments	($398,049,793)		($385,067,130)	
Refund of contributions	(3,917,789)		(3,607,546)	
Administrative expenses	(3,390,041)		(3,082,062)	
Net benefit payments		($405,357,623)		($391,756,738)
Change in reserve for future benefits		(108,702,093)		157,511,441
Net assets at fair value at the end of the year		$1,357,695,828		$1,466,397,921

Exhibit H.2 – Summary Statement of Income and Expenses on Book Value Basis

	Year Ended December 31, 2022		Year Ended December 31, 2021	
Net assets at book value at the beginning of the year		$1,267,487,166		$1,140,314,008
Contribution income:				
Employer contributions	$399,209,599		$367,481,614	
Employee contributions	53,030,821		52,268,136	
Administrative expenses	5,150		4,788	
Net contribution income		452,245,570		419,754,538
Investment income:				
Interest, dividends and other income	$29,247,529		$23,044,164	
Realized investment gain/(loss)	7,436,133		84,129,406	
Less investment fees	(8,186,951)		(7,998,212)	
Net investment income		28,496,711		99,175,358
Total income available for benefits		$480,742,281		$518,929,896
Less benefit payments:				
Annuity payments	($398,049,793)		($385,067,130)	
Refund of contributions	(3,917,789)		(3,607,546)	
Administrative expenses	(3,390,041)		(3,082,062)	
Net benefit payments		($405,357,623)		($391,756,738)
Change in reserve for future benefits		75,384,658		127,173,158
Net assets at book value at the end of the year		$1,342,871,824		$1,267,487,166

Exhibit H.3 – Summary Statement of Plan Assets

	Year Ended December 31, 2022		Year Ended December 31, 2021	
Accounts receivable:				
Employer contributions - net	$404,376,390		$379,447,327	
Investment income	3,572,964		2,826,697	
Other	4,380,933		2,598,069	
Securities lending	33,105		29,102	
Unsettled trades	4,983,239		5,968,490	
Total accounts receivable		$417,346,631		$390,869,685
Prepaid expenses		234,326		161,085
Investments:				
Cash deposits and short-term investments	$64,461,762		$45,866,572	
Corporate bonds	99,469,642		103,638,635	
Equities	529,259,712		662,964,750	
Pooled funds	84,225,477		111,113,449	
Private equity and venture capital	69,397,114		60,239,714	
U.S. and Foreign Government obligations	102,026,597		100,809,710	
Total investments at fair value		$948,840,304		$1,084,632,830
Collateral held for securities on loan		89,882,515		108,665,402
Total assets		1,456,303,776		1,584,329,002
Liabilities:				
Accounts payable and accrued expenses	($1,178,426)		($1,354,247)	
Participant accounts	(426,550)		(719,644)	
Securities lending collateral	(89,882,515)		(108,665,402)	
Securities lending	(8,258)		(7,253)	
Unsettled trades	(7,112,199)		(7,184,535)	
Total liabilities		($98,607,948)		($117,931,081)
Net assets at fair value		1,357,695,828		1,466,397,921
Net assets at actuarial value		$1,498,781,715		$1,409,809,943

Exhibit I – Development of Fund through December 31, 2022

Year Ended December 31	Employer Contributions	Employee Contributions	Misc. Revenue	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2013	$106,219,800	$42,520,218	($59,725)	$104,183,008	$3,115,118	$251,818,642	$991,213,282
2014	109,805,454	48,056,393	7,393	108,492,379	3,069,192	266,364,393	988,141,316
2015	238,485,820	46,552,247	7,141	91,403,350	3,149,549	280,398,529	1,081,041,796
2016	156,158,391	48,959,929	6,494	80,784,345	3,216,823	288,876,397	1,074,857,735
2017	228,452,611	47,364,276	22,879	81,961,440	3,171,986	306,098,115	1,123,388,840
2018	249,684,038	45,894,781	5,853	39,343,831	3,285,110	324,662,304	1,130,369,929
2019	255,382,266	46,622,658	506,886	53,771,122	3,225,938	346,337,839	1,137,089,084
2020	368,422,961	54,414,653	12,757	85,125,625	2,991,289	366,160,404	1,275,913,387
2021	367,481,614	52,268,136	4,788	105,898,756	3,082,062	388,674,676	1,409,809,943
2022	399,209,599	53,030,821	5,150	42,083,824	3,390,040	401,967,582	1,498,781,715

* *Actuarial investment return, net of investment fees*

Exhibit J – Development of Unfunded Actuarial Accrued Liability

		Year Ending December 31	
		2022	**2021**
1.	Unfunded actuarial accrued liability at beginning of year	$5,595,095,635	$5,294,590,848
2.	Normal cost at beginning of year	111,917,214	100,827,735
3.	Administrative expenses	3,082,062	2,991,289
4.	Total contributions	(452,245,570)	(419,754,538)
5.	Interest		
	(a) Unfunded actuarial accrued liability and normal cost	$385,223,367	$364,190,754
	(b) Administrative expenses	102,321	99,308
	(c) Total contributions*	(1,770,411)	(1,744,940)
	(d) Total interest: **(5a) + (5b) + (5c)**	383,555,277	362,545,122
6.	Expected unfunded actuarial accrued liability: **(1) + (2) + (3) + (4) + (5d)**	$5,641,404,618	$5,341,200,456
7.	Changes due to (gain)/loss from:		
	(a) Investments	$41,187,491	($31,232,181)
	(b) Demographics and other	(30,366,136)	88,595,798
	(c) Total changes due to (gain)/loss: **(7a) + (7b)**	10,821,355	57,363,617
8.	Change due to plan provisions	11,737,121	196,531,562
9.	Change in actuarial assumptions	53,664,613	0
10.	Unfunded actuarial accrued liability at end of year: **(6) + (7c) + (8) + (9)**	5,717,627,707	5,595,095,635

*Interest for employer contributions reflect assumed end-of-year timing.

Exhibit K – Definition of Pension Terms

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

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Pensioners:	The single-sum value of lifetime benefits to existing pensioners. This sum takes into account life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., FABF's assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
Actuarially Equivalent:	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) b. Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and c. Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
Actuarial Value of Assets (AVA):	The value of the Fund’s assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.
Actuarially Determined Contribution (ADC):	The employer’s periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan’s funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: a. Investment return - the rate of investment yield that the Fund will earn over the long-term future; b. Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; c. Retirement rates - the rate or probability of retirement at a given age; d. Withdrawal rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more Actuarial Assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.
Funded Ratio:	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes calculate a fair value funded ratio, using the fair value of assets, rather than the AVA, as another measure of the Plan's health.
GASB:	Governmental Accounting Standards Board.
GASB 67 and GASB 68:	Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves. Governmental Accounting Standards Board Statements No. 67 and No. 68 are the successor statements to GASB Statements No. 25 and No. 27.
Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position

Normal Cost:	That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount, or in relation to covered payroll, if the actuarial assumptions are realized.
Plan Fiduciary Net Position:	Fair value of assets.
Total Pension Liability (TPL):	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

Section 4: Reporting Information

Exhibit I – Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:			
1. Retirees as of the valuation date (including survivors, disabilities, and children)			5,300
2. Members inactive during year ended December 31, 2022 (including members on Leave of absence)			139
3. Members active during the year ended December 31, 2022			4,767
Fully vested		2,645	
Not vested		2,122	

Determination of Actuarial Accrued Liability:	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
1. Active members			
(a) Retirement benefits	$3,071,997,045	$903,653,328	$2,168,343,717
(b) Death benefits	61,203,648	40,385,402	20,818,246
(c) Withdrawal benefits	21,126,823	17,792,055	3,334,768
(d) Disability Benefits	436,304,999	237,716,245	198,588,754
(e) Total	$3,590,632,515	$1,199,547,030	$2,391,085,485
2. Inactive members			
(a) Inactive vested members	$6,824,001	--	$6,824,001
(b) Retirees	4,190,836,471	--	4,190,836,471
(c) Spouse annuitants	272,041,352	--	272,041,352
(d) Compensation widows	60,148,226	--	60,148,226
(e) Ordinary disability	1,356,224	--	1,356,224
(f) Occupational disease disability	77,515,990	--	77,515,990
(g) Duty disability	207,941,202	--	207,941,202
(h) Children	8,583,167	--	8,583,167
(i) Parent annuitants	77,304	--	77,304
(j) Total	$4,825,323,937	$0	$4,825,323,937
3. Total	$8,415,956,452	$1,199,547,030	$7,216,409,422

Exhibit I – Summary of Actuarial Valuation Results *(continued)*

Determination of Unfunded Actuarial Accrued Liability:		
1.	Actuarial accrued liability	$7,216,409,422
2.	Actuarial value of assets ($1,357,695,828 at fair value)	1,498,781,715
3.	Unfunded actuarial accrued liability	5,717,627,707

Components of normal cost:		Tier 1		Tier 2		Total	
		% of Payroll	Amount	% of Payroll	Amount	% of Payroll	Amount
1.	Retirement	19.63%	$65,840,305	12.20%	$26,756,873	16.70%	$92,597,178
2.	Turnover	0.24%	793,694	0.30%	666,051	0.26%	1,459,745
3.	Mortality	0.64%	2,135,093	0.68%	1,494,093	0.65%	3,629,186
4.	Disability	4.17%	13,978,943	3.87%	8,486,693	4.05%	22,465,636
5.	Total normal cost: (1) + (2) + (3) + (4)	24.68%	$82,748,035	17.05%	$37,403,710	21.66%	$120,151,745
6.	Total normal cost, adjusted for timing*	25.49%	85,495,180	17.62%	38,645,473	22.38%	124,140,653
7.	Administrative expenses	0.70%	2,334,707	0.48%	1,055,333	0.61%	3,390,040
8.	Total normal cost, including administrative expenses: (6) + (7)	26.19%	$87,829,887	18.10%	$39,700,806	22.99%	$127,530,693
9.	Expected employee contributions**					(9.15%)	($50,754,077)
10.	Employer normal cost: (8) + (9)					13.84%	$76,776,616
11.	Employer normal cost, adjusted for timing***					14.30%	$79,325,516

** Reflects timing adjustment to the middle of the year*
*** Based on payroll, adjusted to the middle of the year*
**** Reflects timing adjustment to the end of the year*

Exhibit II – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) − (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) − (a)] / (c)
12/31/2013	$991,213,282	$4,136,426,376	$3,145,213,094	23.96%	$416,491,784	755.17%
12/31/2014	988,141,316	4,343,587,556	3,355,446,240	22.75%	460,189,982	729.14%
12/31/2015	1,081,041,796	4,666,801,476	3,585,759,980	23.16%	465,231,594	770.74%
12/31/2016	1,074,857,735	5,045,890,302	3,971,032,567	21.30%	478,470,944	829.94%
12/31/2017	1,123,388,840	5,582,426,435	4,459,037,595	20.12%	469,407,281	949.93%
12/31/2018	1,130,369,929	6,155,919,204	5,025,549,275	18.36%	456,969,301	1,099.76%
12/31/2019	1,137,089,084	6,256,060,133	5,118,971,049	18.18%	457,082,316	1,119.92%
12/31/2020	1,275,913,387	6,570,504,235	5,294,590,848	19.42%	500,367,870	1,058.14%
12/31/2021	1,409,809,943	7,004,905,578	5,595,095,635	20.13%	520,047,197	1,075.88%
12/31/2022	1,498,781,715	7,216,409,422	5,717,627,707	20.77%	525,479,549	1,088.08%

Exhibit III – Solvency Test

Actuarial Valuation Date	(1) Active Member Contribution	(2) Retirees and Beneficiaries	(3) Active and Inactive Members (ER Financed Portion)	Actuarial Value of Assets	Portion (%) of Present Value Covered By Assets (1)	(2)	(3)
12/31/2013	$661,062,321	$2,535,327,207	$892,816,311	$991,213,282	100.00%	13.02%	0.00%
12/31/2014	670,825,942	2,675,919,242	946,985,303	988,141,316	100.00%	11.86%	0.00%
12/31/2015	692,657,194	2,875,934,283	1,045,091,771	1,081,041,796	100.00%	13.50%	0.00%
12/31/2016	702,218,711	3,107,218,181	1,236,453,410	1,074,857,735	100.00%	11.99%	0.00%
12/31/2017	701,745,771	3,520,967,001	1,359,713,663	1,123,388,840	100.00%	11.98%	0.00%
12/31/2018	684,682,219	3,993,065,563	1,478,171,422	1,130,369,929	100.00%	11.16%	0.00%
12/31/2019	717,595,358	4,195,697,523	1,342,767,251	1,137,089,084	100.00%	10.00%	0.00%
12/31/2020	718,594,775	4,405,361,692	1,446,547,768	1,275,913,387	100.00%	12.65%	0.00%
12/31/2021	732,793,563	4,628,054,041	1,644,057,976	1,409,809,943	100.00%	14.63%	0.00%
12/31/2022	753,151,280	4,818,499,936	1,644,758,206	1,498,781,715	100.00%	15.47%	0.00%

Exhibit IV – Funded Ratio

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

The chart below depicts a history of the funded ratios for this plan using the actuarial value of assets and the fair value of assets.

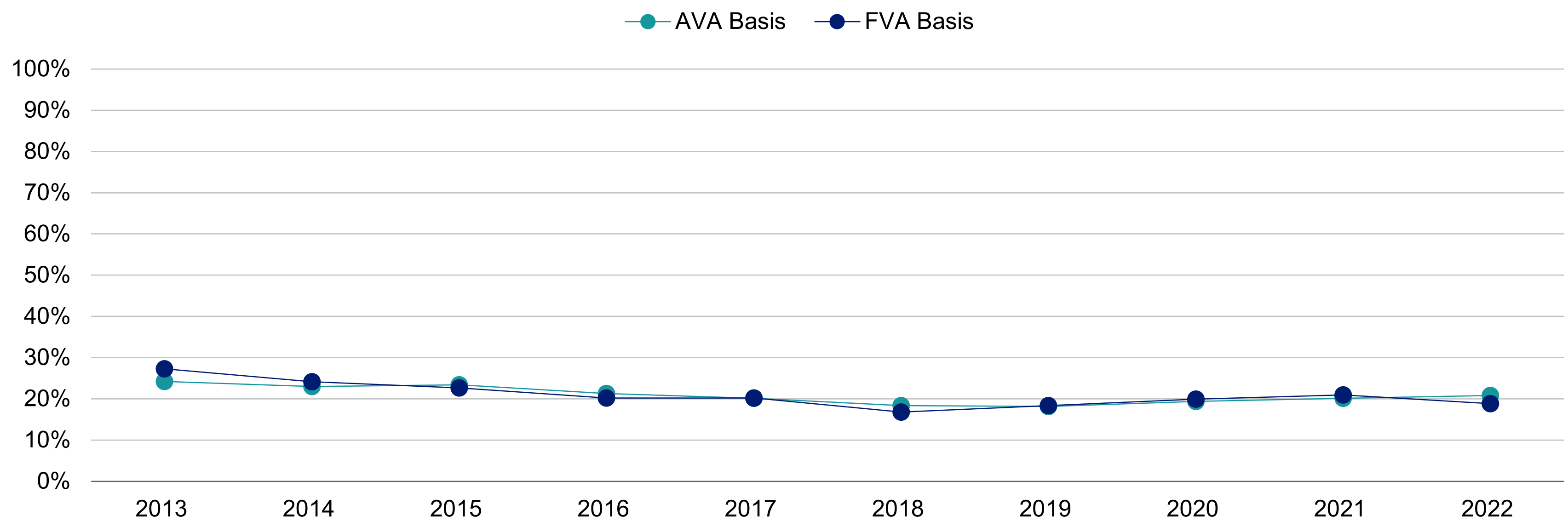

Exhibit V – History of Recommended Employer Multiples

Year of Report	Statutory Multiple	P.A. 99-0506 Multiple	Normal Cost Plus Interest	Normal Cost Plus Amortization: Level Dollar	Normal Cost Plus Amortization: Level % of Salary
1992 [2]	2.26	N/A	4.75	4.89	3.69
1993 [2]	2.26	N/A	4.89	5.03	3.81
1994 [1,2]	2.26	N/A	4.92	5.09	3.71
1995 [2]	2.26	N/A	5.16	5.33	3.78
1996	2.26	N/A	5.02	5.19	3.78
1997 [1,2,3]	2.26	N/A	3.95	4.08	3.00
1998 [2,4]	2.26	N/A	4.31	4.22	2.91
1999	2.26	N/A	3.56	3.49	2.41
2000 [1]	2.26	N/A	4.39	4.30	2.99
2001 [4]	2.26	N/A	4.61	4.44	3.12
2002	2.26	N/A	4.07	4.19	2.93
2003 [1,2]	2.26	N/A	4.90	5.08	3.18
2004 [2,5]	2.26	N/A	4.99	5.19	3.22
2005 [1,7]	2.26	N/A	4.35	4.54	3.09
2006	2.26	N/A	5.14	5.61	4.05
2007	2.26	N/A	4.93	5.39	3.89
2008	2.26	N/A	5.24	5.72	4.13
2009	2.26	N/A	5.70	6.24	4.47
2010	2.26	N/A	6.35	6.94	4.98
2011 [1]	2.26	N/A	6.81	7.47	5.30
2012	2.26	N/A	5.94	6.52	4.60
2013 [2]	2.26	N/A	5.90	6.45	4.53
2014	2.26	N/A	7.98	8.74	6.10
2015 [1]	N/A	4.66	7.12	7.90	5.72
2016 [2,8]	N/A	5.03	8.12	9.01	6.47
2017 [1,8]	N/A	5.36	8.46	9.41	6.71
2018 [1,8]	N/A	5.74	9.09	10.35	7.52
2019 [4]	N/A	8.58	9.48	10.79	7.85
2020	N/A	7.55	8.59	9.80	7.10
2021	N/A	7.87	8.84	10.07	7.33
2022	N/A	8.43	9.17	10.41	7.62

Notes:

[1] *Change in actuarial assumptions*
[2] *Change in benefits*
[3] *Change in asset valuation method to GASB*
[4] *Change in actuary*
[5] *To reflect long-term funding requirements, $10,182,825 and $3,229,938 have been excluded from the 2003 and 2006 employee contributions in the calculation of the respective recommended multiples. These amounts are employee contribution for retroactive pay increases.*
[6] *Prior to 2005, 40-year amortization is used. In 2005, OPEB based on 30-year amortization and pension on 40-year amortization. In 2006, 30-year amortization used for both pension and OPEB.*
[7] *There was a significant decrease in the multiple from 2004 to 2005. This change is primarily due to the significant increase in employee contributions.*
[8] *Funding based on P.A. 99-0506*

Exhibit VI – State Reporting Disclosure (40 ILCS 5/1A-110 (b)(5)(iv))

Information as of December 31	2022	2021
Actuarial Accrued Liability		
Retirees and beneficiaries	$4,818,499,936	$4,628,054,039
Active members	1,644,758,206	1,644,057,976
Accumulated active employee contributions	746,327,279	724,075,783
Payable to vested employees	6,824,001	8,717,780
Total	$7,216,409,422	$7,004,905,578
Net Assets Available for Benefits, Actuarial Value	$1,498,781,715	$1,409,809,943
Unfunded Actuarial Accrued Liability	$5,717,627,707	$5,595,095,635
Percent funded	20.77%	20.13%
Unfunded actuarial accrued liability as a percent of payroll	1,088.08%	1,075.88%
Payroll	$525,479,549	$520,047,197

Exhibit VII – Actuarial Reserve Liabilities

Information as of December 31:	2022	2021
Accrued Liability for:		
Active members*	$2,391,085,485	$2,368,133,759
Inactive	6,824,001	8,717,780
Reserves for:		
Retirees	$4,190,836,471	$4,034,632,305
Spouse annuitants	272,041,352	251,681,639
Compensation widows	60,148,226	62,093,204
Ordinary disability	1,356,224	1,913,317
Occupational disease disability	77,515,990	79,072,932
Duty disability	207,941,202	189,869,991
Children annuitants	8,583,167	8,706,533
Parent annuitants	77,304	84,118
Total Accrued Liability	7,216,409,422	7,004,905,578
Actuarial Net Assets	1,498,781,715	1,409,809,943
Unfunded Actuarial Liabilities	$5,717,627,707	$5,595,095,635

* *Accrued liability for active participants includes retirement liability for members in ordinary disability status.*

Exhibit VIII – Ordinary Death Benefit Reserve

	2022	2021
Assets		
Fund Balance	$25,264,009	$23,937,319
Present Value of Future Contributions:		
Contributions by members at $30 per year	1,534,984	1,532,420
Annual city contribution of $142,000	1,518,727	1,514,924
Unfunded Liability	(5,280,449)	(3,794,526)
Total Assets	$23,037,271	$23,190,137
Liabilities		
Present Value of Future Death Benefits:		
Active members	$9,632,851	$10,125,327
Retirees	13,404,420	13,064,810
Total Liabilities	$23,037,271	$23,190,137

Liabilities calculated with Plan mortality and 3% discount rate

Exhibit IX – Projection of Contributions, Liabilities, and Assets

Based on the results of the December 31, 2022, actuarial valuation, we have projected valuation results for a 33-year period (from December 31, 2022, through December 31, 2055).

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

In order to determine projected contributions, liabilities, and assets, certain calculations need to be made that are not normally required in a regular actuarial valuation. Benefit payout requirements, actuarial liabilities, and payroll were estimated over the period from 2023 through 2055 by projecting the membership of the Fund over the 33-year period, taking into account the impact of new entrants into the Fund.

To make the required projections, assumptions needed to be made regarding the age and salary distribution of new entrants as well as the size of the active membership of the Fund. The assumptions regarding the profile of new entrants to the Fund were based on the recent experience of the Fund with regard to new entrants. The size of the active membership of the Fund was assumed to remain constant over the 33-year projection period. The results of our projections are shown on the following pages.

According to the City's Pension Management Policy, "*…[s]tarting in fiscal year 2023, the City will annually budget for an advance pension contribution which, in addition to the statutorily required contribution, and in the determination of the CFO, will not increase the total net pension liability of the City's four pension funds based on best efforts projections and information available at the time of budget.*" For 2023 the City's additional pension payment of $38,720,000 is included in the Market Value of Assets and Actuarial Value of Assets. No future additional pension payments are reflected in the schedule.

Exhibit IX – Projection of Contributions, Liabilities, and Assets *(continued)*

Projection and Development of Statutory Contribution Based on the December 31, 2022 Actuarial Valuation

(All dollar amounts are in thousands. Employer Contributions are shown on a cash basis in the fiscal year they are actually paid, not receivable.
The funded ratio includes receivable contributions. Actuarial Liability and asset figures as of end of year.)

Year Ending	Actuarial Accrued Liability	Market Value of Assets	Actuarial Value of Assets	Unfunded Liability	Actuarial Value Funded Ratio	Capped Payroll	Employer Normal Cost	Statutory Contribution	Statutory Contribution as % of Pay	Employee Contributions	Benefit Payments	Admin Expenses
2022	$ 7,216,409	$ 1,357,696	$ 1,498,782	$ 5,717,628	20.77%	$ 525,480	$ 65,871	$ 399,210	75.97%	$ 53,031	$ 401,968	$ 3,390
2023[1]	7,398,089	1,526,576	1,650,909	5,747,180	22.32%	554,642	72,760	427,685	77.11%	50,755	419,755	3,475
2024	7,572,109	1,661,853	1,750,882	5,821,227	23.12%	565,513	71,459	443,074	78.35%	51,747	438,631	3,562
2025	7,739,529	1,799,861	1,848,397	5,891,132	23.88%	580,595	71,043	454,891	78.35%	53,123	457,290	3,651
2026	7,899,194	1,938,870	1,938,870	5,960,324	24.55%	593,917	70,522	465,329	78.35%	54,338	476,361	3,742
2027	8,050,201	2,077,957	2,077,957	5,972,245	25.81%	606,198	69,836	474,951	78.35%	55,459	495,527	3,836
2028	8,191,921	2,215,529	2,215,529	5,976,392	27.05%	616,599	69,243	483,100	78.35%	56,408	514,653	3,931
2029	8,325,734	2,354,174	2,354,174	5,971,560	28.28%	628,325	69,003	492,287	78.35%	57,478	532,324	4,030
2030	8,451,909	2,495,019	2,495,019	5,956,890	29.52%	640,868	69,108	502,114	78.35%	58,623	549,649	4,130
2031	8,569,316	2,636,298	2,636,298	5,933,018	30.76%	651,250	68,842	510,249	78.35%	59,570	566,979	4,234
2032	8,678,307	2,778,630	2,778,630	5,899,677	32.02%	661,171	68,596	518,022	78.35%	60,475	583,370	4,340
2033	8,778,882	2,923,826	2,923,826	5,855,057	33.31%	672,249	68,106	526,701	78.35%	61,486	599,066	4,448
2034	8,871,688	3,073,841	3,073,841	5,797,847	34.65%	684,397	67,870	536,219	78.35%	62,595	613,947	4,559
2035	8,957,824	3,227,630	3,227,630	5,730,194	36.03%	693,848	68,456	543,624	78.35%	63,457	627,848	4,673
2036	9,037,406	3,385,175	3,385,175	5,652,231	37.46%	701,872	68,819	549,911	78.35%	64,189	640,833	4,790
2037	9,111,230	3,547,121	3,547,121	5,564,109	38.93%	709,314	69,567	555,741	78.35%	64,868	652,960	4,910
2038	9,179,056	3,714,147	3,714,147	5,464,909	40.46%	716,488	69,907	561,362	78.35%	65,523	664,494	5,033
2039	9,241,648	3,887,474	3,887,474	5,354,174	42.06%	723,538	70,434	566,886	78.35%	66,166	675,074	5,158
2040	9,299,981	4,068,992	4,068,992	5,230,989	43.75%	731,236	71,308	572,917	78.35%	66,869	684,786	5,287
2041	9,353,377	4,259,022	4,259,022	5,094,355	45.53%	738,854	71,968	578,886	78.35%	67,564	694,642	5,419
2042	9,401,493	4,457,548	4,457,548	4,943,945	47.41%	745,605	72,539	584,175	78.35%	68,180	704,331	5,555
2043	9,444,217	4,666,613	4,666,613	4,777,604	49.41%	753,087	72,507	590,037	78.35%	68,863	713,228	5,694
2044	9,481,790	4,887,702	4,887,702	4,594,088	51.55%	761,073	72,678	596,294	78.35%	69,591	721,791	5,836
2045	9,514,085	5,121,965	5,121,965	4,392,120	53.84%	769,115	72,772	602,594	78.35%	70,325	730,064	5,982
2046	9,540,493	5,370,107	5,370,107	4,170,386	56.29%	777,036	72,714	608,801	78.35%	71,048	738,409	6,132
2047	9,561,313	5,634,090	5,634,090	3,927,223	58.93%	785,312	72,609	615,285	78.35%	71,803	746,061	6,285
2048	9,576,885	5,916,515	5,916,515	3,660,370	61.78%	794,343	72,288	622,361	78.35%	72,627	752,864	6,442
2049	9,588,263	6,220,225	6,220,225	3,368,038	64.87%	803,847	72,127	629,807	78.35%	73,495	758,508	6,603
2050	9,597,292	6,549,150	6,549,150	3,048,142	68.24%	814,056	72,134	637,806	78.35%	74,426	762,331	6,768
2051	9,604,534	6,905,797	6,905,797	2,698,737	71.90%	824,842	72,475	646,256	78.35%	75,410	765,850	6,937
2052	9,610,610	7,292,997	7,292,997	2,317,612	75.88%	835,791	72,725	654,835	78.35%	76,409	768,569	7,111
2053	9,616,530	7,713,969	7,713,969	1,902,561	80.22%	847,010	73,107	663,625	78.35%	77,433	770,391	7,289
2054	9,623,403	8,171,631	8,171,631	1,451,772	84.91%	857,883	73,683	672,143	78.35%	78,425	771,294	7,471
2055	9,632,819	8,669,537	8,669,537	963,282	90.00%	868,514	74,508	680,473	78.35%	79,395	770,949	7,658
2056	9,645,871	8,681,283	8,681,283	964,587	90.00%	879,307	75,624	159,070	18.09%	80,380	770,025	7,849
2057	9,663,849	8,697,464	8,697,464	966,385	90.00%	890,237	76,872	151,231	16.99%	81,378	768,232	8,045
2058	9,687,458	8,718,712	8,718,712	968,746	90.00%	901,325	78,359	152,278	16.89%	82,389	766,338	8,246
2059	9,717,374	8,745,637	8,745,637	971,737	90.00%	912,558	79,889	153,490	16.82%	83,414	764,209	8,453

[1] Assets include the Advanced Pension Funding Contribution of $38.72M paid in early January 2023.

Exhibit X.1 – Comparison of Employer Contribution to Actuarially Determined Contribution

Plan Year Ended December 31	Actuarially Determined Contributions (ADC)*	Actual Contributions**	Percentage Contributed
2013	$294,877,895	$103,669,015	24.89%
2014	304,265,411	107,334,399	23.32%
2015	323,544,987	236,104,362	50.75%
2016	333,952,291	154,101,396	32.21%
2017	372,845,121	228,452,611	48.67%
2018	412,220,284	249,684,038	54.64%
2019	442,044,761	255,382,266	57.77%
2020	466,556,303	368,422,961	78.97%
2021	476,497,828	367,481,614	77.12%
2022	509,936,459	399,209,599	78.29%
2023	528,571,846	--	--

* *The historical FABF Funding Policy does not conform to Actuarial Standards of practice. Therefore, the Actuarially Determined Contribution is equal to the normal cost plus an amount to amortize the unfunded actuarial accrued liability using level dollar payments and a 30-year amortization period. Amounts prior to 2015 were based on the Annual Required Contribution, which was equal to the normal cost plus an amount to amortize the unfunded actuarial accrued liability using a 30-year open period and level dollar amortization.*

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

Exhibit X.2 – History of Active Member Valuation Data

December 31	Active Members	Percent Increase	Annual Salaries	Percent Increase	Average Salary	Percent Increase	Actuarial Assumption	CPI Chicago
1992	5,204	-2.2%	$223,578,000	-1.8%	$42,963	0.5%	6.00%	3.0%
1993	5,124	-1.5%	221,600,136	-0.9%	43,247	0.7%	6.00%	3.0%
1993*	4,710	-8.1%	202,080,072	-8.8%	42,904	-0.8%	6.00%	3.0%
1994	4,753	0.9%	226,703,496	12.2%	47,697	11.2%	6.00%	2.2%
1995	4,678	-1.6%	228,604,584	0.8%	48,868	2.5%	6.00%	3.2%
1996	4,806	2.7%	233,033,832	1.9%	48,488	-0.8%	6.00%	2.7%
1997	4,856	1.0%	234,726,936	0.7%	48,338	-0.3%	5.00%	2.7%
1998	4,783	-1.5%	262,248,978	11.7%	54,829	13.4%	5.00%	1.5%
1999	4,855	1.5%	271,335,540	3.5%	55,888	1.9%	5.00%	2.6%
2000	4,878	0.5%	275,106,756	1.4%	56,397	0.9%	5.00%	4.0%
2001	4,930	1.1%	277,964,912	1.0%	56,382	0.0%	5.00%	0.8%
2002	4,910	-0.4%	277,053,144	-0.3%	56,426	0.1%	5.00%	2.5%
2003	4,909	0.0%	335,170,501	21.0%	68,277	21.0%	5.00%	1.7%
2004	4,856	-1.1%	334,423,753	-0.2%	68,868	0.9%	5.00%	2.2%
2005	4,999	2.9%	341,252,492	2.0%	68,264	-0.9%	5.00%	3.6%
2006	5,078	1.6%	387,442,074	13.5%	76,298	11.8%	5.00%	0.7%
2007	4,938	-2.8%	388,881,954	0.4%	78,753	3.2%	5.00%	4.7%
2008	5,037	2.0%	396,181,778	1.9%	78,654	-0.1%	5.00%	-0.6%
2009	5,137	2.0%	400,912,173	1.2%	78,044	-0.8%	5.00%	2.5%
2010	5,052	-1.7%	400,404,320	-0.1%	79,257	1.6%	5.00%	1.2%
2011	4,842	-4.2%	425,385,354	6.2%	87,853	10.8%	5.00%	2.1%
2012	4,740	-2.1%	418,964,763	-1.5%	88,389	0.6%	5.00%	1.7%
2013	4,685	-1.2%	416,491,784	-0.6%	88,899	0.6%	4.25%	0.5%
2014	4,809	2.6%	443,743,202	6.5%	92,273	3.8%	4.25%	1.5%
2015	4,735	-1.5%	449,037,894	1.2%	94,834	2.8%	3.75%	0.0%
2016	4,760	0.5%	461,906,144	2.9%	97,039	2.3%	3.75%	1.9%
2017	4,613	-3.1%	452,800,481	-2.0%	98,157	1.2%	3.75%	1.7%
2018	4,487	-2.7%	440,816,101	-2.6%	98,243	0.1%	3.50%	1.1%
2019	4,630	3.2%	457,082,316	3.7%	98,722	0.5%	3.50%	2.2%
2020	4,697	1.4%	500,367,870	9.5%	106,529	7.9%	3.50%	0.9%
2021	4,735	0.8%	520,047,197	3.9%	109,830	3.1%	3.50%	6.6%
2022	4,767	0.7%	525,479,549	1.0%	110,233	0.4%	3.50%	5.5%
Average Increase for the last 5 Years				**3.0%**		**2.3%**		**3.3%**

*Restated without disabilities for comparison. Percent increase (decrease) are based on change from with disabilities in 1993 to without disabilities in 1994.

Exhibit X.3 – New Annuities Granted During 2022

	Annuitants	Widow(er)s of Deceased Employees**	Widow(er)s of Deceased Annuitants	Compensation Widow(er)s***
Number retired/deceased	190	3	62	1
Average age attained	60.2	53.1	73.4	61.9
Average length of service	29.5	10.7	30.7	N/A
Average spouse age	59.0	N/A	N/A	N/A
Average annual salary	$121,653	N/A	N/A	N/A
Average annual final salary	$127,911	N/A	N/A	N/A
Total annual annuity	$16,936,865	$92,833	$2,716,388	$116,673
Average annual annuity	$89,141	$30,944	$43,813	$116,673
Total statutory liability	$262,189,645	$1,180,421	$23,368,247	$1,529,513
Average liability	$1,379,946	$393,474	$376,907	$1,529,513
Total investment (employee paid)	$43,789,834	N/A	N/A	N/A
Average investment*	$230,473	N/A	N/A	N/A
Liability/cost	5.99	N/A	N/A	N/A
Liability/final pay	10.79	N/A	N/A	N/A

* *Based on previously taxed contributions.*
** *Not including compensation or supplemental.*
*** *Does not include transfers from Supplemental Widows*

Exhibit X.4 – History of Retirees and Beneficiaries by Type of Benefit

	Annuitants					Disability				
December 31	Employee	Spouse	Supp. Widow(er)*	Child	Parent	Ordinary	Duty	Occupational	Widow(er) Comp.	Total
1992	2,261	1,277	68	113	1	11	286	147	40	4,204
1993	2,257	1,291	69	114	1	10	274	140	35	4,191
1994	2,207	1,316	66	114	2	6	284	142	36	4,173
1995	2,248	1,332	62	110	1	8	297	144	40	4,242
1996	2,257	1,328	61	110	1	8	292	169	44	4,270
1997	2,235	1,348	60	111	1	11	296	194	46	4,302
1998	2,251	1,360	56	125	2	8	295	197	49	4,343
1999	2,351	1,450	56	139	2	5	295	203	49	4,550
2000	2,538	1,440	51	132	2	6	257	139	49	4,614
2001	2,422	1,330	-	116	2	2	262	147	89	4,370
2002	2,411	1,330	-	121	1	2	257	144	85	4,351
2003	2,412	1,322	-	119	1	3	249	121	82	4,309
2004	2,441	1,352	-	114	1	7	244	113	81	4,353
2005	2,442	1,330	-	111	1	7	254	107	105	4,357
2006	2,459	1,322	-	110	1	6	257	113	114	4,382
2007	2,488	1,300	-	105	1	4	266	114	113	4,391
2008	2,471	1,306	-	98	1	4	269	124	108	4,381
2009	2,556	1,292	-	89	1	4	262	121	107	4,432
2010	2,577	1,261	-	83	1	4	259	124	100	4,409
2011	2,665	1,253	-	85	1	4	249	121	100	4,478
2012	2,821	1,260	-	83	1	2	232	116	98	4,613
2013	2,883	1,242	-	83	1	2	220	112	99	4,642
2014	2,977	1,222	-	82	1	1	220	108	93	4,704
2015	3,044	1,198	-	79	1	3	212	107	88	4,732
2016	3,130	1,175	-	84	1	3	202	100	85	4,780
2017	3,257	1,181	-	79	1	8	190	86	84	4,886
2018	3,422	1,181	-	78	1	6	170	89	81	5,028
2019	3,537	1,184	-	70	1	8	166	85	77	5,128
2020	3,632	1,174	-	75	1	12	172	83	72	5,221
2021	3,681	1,151	-	74	1	12	196	80	70	5,265
2022	3,761	1,138	-	70	1	8	184	69	69	5,300

* *In 2001, all Supplemental Widows were moved into the Compenensation Widows group.*

Exhibit X.5 – History of Average Employee Retirement Benefits Payable

	All Retirees		Retirees Who Retired During the Prior Year		
Retirement Year	Average Annual Benefit	Average Age	Average Annual Benefit	Average Age	Average Years of Service
1992	$23,503	69	$32,758	59.9	31.3
1993	25,031	69	34,267	61.6	31.7
1994	26,262	70	34,391	59.8	31.2
1995	27,935	70	38,872	60.3	32.1
1996	29,304	70	40,406	60.4	32.0
1997	30,787	70	41,543	59.8	31.6
1998	32,503	71	43,905	60.1	32.1
1999	34,067	71	44,001	60.4	31.4
2000	36,458	71	48,534	63.5	34.2
2001	38,048	71	45,768	60.2	30.9
2002	40,052	71	45,346	59.7	30.8
2003	42,131	71	50,943	60.2	31.7
2004	45,675	71	59,608	60.0	32.1
2005	47,917	71	59,117	59.2	31.4
2006	50,171	71	61,172	57.7	30.1
2007	52,446	71	64,076	58.1	30.0
2008	54,492	71	61,577	57.4	29.6
2009	57,023	71	67,310	57.8	30.3
2010	59,133	71	67,386	59.0	29.7
2011	61,879	71	70,893	58.5	29.4
2012	64,860	70	75,675	58.5	30.4
2013	67,286	70	73,808	57.6	30.2
2014	69,977	70	78,042	57.4	30.5
2015	71,823	70	73,541	58.4	28.7
2016	74,125	70	78,725	58.6	29.6
2017	77,904	69	82,815	58.4	30.4
2018	80,461	69	83,938	58.6	29.9
2019	83,088	69	83,406	59.0	29.0
2020	85,431	69	82,683	59.7	29.3
2021	88,157	69	84,346	59.5	28.0
2022	90,423	69	89,141	60.2	29.5

Exhibit X.6 – History of Annuities 1992 – 2022

	Employee Annuitants			Widow/Widower Annuitants		
December 31	Number of Annuitants	Total Annuities	Average Annuities	Number of Annuitants	Total Annuities	Average Annuities
1992	2,261	$53,140,074	$23,503	1,346	$10,774,709	$8,005
1993	2,257	56,495,862	25,031	1,361	12,121,722	8,906
1994	2,207	57,960,522	26,262	1,384	13,680,765	9,885
1995	2,248	62,797,419	27,935	1,395	14,495,633	10,391
1996	2,257	66,139,690	29,304	1,389	14,709,232	10,590
1997	2,235	68,808,890	30,787	1,409	15,397,832	10,928
1998	2,251	73,163,601	32,503	1,418	15,969,975	11,262
1999	2,351	80,090,897	34,067	1,508	18,136,173	12,027
2000	2,538	92,529,624	36,458	1,493	18,352,906	12,293
2001	2,422	92,152,832	38,048	1,332	16,516,021	12,399
2002	2,411	96,565,842	40,052	1,331	17,006,519	12,777
2003	2,412	101,620,962	42,131	1,323	17,490,584	13,220
2004	2,441	111,491,737	45,675	1,353	19,297,527	14,263
2005	2,442	117,014,053	47,917	1,331	20,481,794	15,388
2006	2,459	123,371,713	50,171	1,323	21,123,202	15,966
2007	2,488	130,485,435	52,446	1,301	21,290,764	16,365
2008	2,471	134,649,295	54,492	1,307	22,164,269	16,958
2009	2,556	145,751,375	57,023	1,293	22,652,897	17,520
2010	2,577	152,385,721	59,133	1,262	22,832,364	18,092
2011	2,665	164,908,801	61,879	1,254	23,449,616	18,700
2012	2,821	182,970,558	64,860	1,261	24,681,837	19,573
2013	2,883	193,984,459	67,286	1,243	25,252,147	20,315
2014	2,977	208,322,397	69,977	1,223	25,524,937	20,871
2015	3,044	218,628,245	71,823	1,199	26,048,384	21,725
2016	3,130	232,010,024	74,125	1,176	26,436,619	22,480
2017	3,257	253,734,772	77,904	1,182	28,637,750	24,228
2018	3,422	275,336,159	80,461	1,182	29,674,018	25,105
2019	3,537	293,881,951	83,088	1,184	30,733,318	25,957
2020	3,632	310,284,118	85,431	1,174	31,899,939	27,172
2021	3,681	324,506,728	88,157	1,151	32,634,414	28,353
2022	3,761	340,081,925	90,423	1,138	33,821,665	29,720

Exhibit X.7 – History of Annuitants Added to Payrolls 2005 – 2022

Employee Annuitants								
	Added[1]		Removed		End of Year			
Year Ended 12/31	Number	Annual Payment	Number	Annual Payment	Number	Annual Payment	Average Annual Benefit	Increase in Average Benefit
2005	126	$10,248,119	125	$4,725,803	2,442	$117,014,053	$47,917	4.9%
2006	123	10,689,546	106	4,331,886	2,459	123,371,713	50,171	4.7%
2007	126	11,168,192	97	4,054,470	2,488	130,485,435	52,446	4.5%
2008	109	9,696,869	126	5,533,009	2,471	134,649,295	54,492	3.9%
2009	185	15,610,755	100	4,508,675	2,556	145,751,375	57,023	4.6%
2010	117	11,242,038	96	4,607,692	2,577	152,385,721	59,133	3.7%
2011	197	18,074,820	109	5,551,740	2,665	164,908,801	61,879	4.6%
2012	275	24,560,716	119	6,498,959	2,821	182,970,558	64,860	4.8%
2013	187	17,780,058	125	6,766,157	2,883	193,984,459	67,286	3.7%
2014	211	20,629,503	117	6,291,565	2,977	208,322,397	69,977	4.0%
2015	175	17,023,263	108	6,717,415	3,044	218,628,245	71,823	2.6%
2016	199	20,036,064	113	6,654,285	3,130	232,010,024	74,125	3.2%
2017	252	29,720,953	125	7,996,205	3,257	253,734,772	77,904	5.1%
2018	278	29,352,500	113	7,751,113	3,422	275,336,159	80,461	3.3%
2019	243	26,821,900	128	8,276,108	3,537	293,881,951	83,088	3.3%
2020	232	26,120,255	137	9,718,087	3,632	310,284,118	85,431	2.8%
2021	164	22,742,673	115	8,520,063	3,681	324,506,728	88,157	3.2%
2022	190	24,615,489	110	9,040,292	3,761	340,081,925	90,423	2.6%

[1] Includes COLA increases for continuing annuitants

Exhibit X.8 – History of Widow/Widowers Added to Payrolls 2005 – 2022

Widow/Widower Annuitants								
	Added		Removed		End of Year			
Year Ended 12/31	Number	Annual Payment	Number	Annual Payment	Number	Annual Payment	Average Annual Benefit	Increase in Average Benefit
2005	94	$2,596,899	116	$1,412,632	1,331	$20,481,794	$15,388	7.9%
2006	84	1,964,568	92	1,323,160	1,323	21,123,202	15,966	3.8%
2007	59	1,341,091	81	1,173,529	1,301	21,290,764	16,365	2.5%
2008	77	1,796,751	71	923,246	1,307	22,164,269	16,958	3.6%
2009	66	1,605,852	80	1,117,224	1,293	22,652,897	17,520	3.3%
2010	55	1,404,275	86	1,224,808	1,262	22,832,364	18,092	3.3%
2011	62	1,661,849	70	1,044,597	1,254	23,449,616	18,700	3.4%
2012	79	2,361,949	72	1,129,728	1,261	24,681,837	19,573	4.7%
2013	71	2,032,935	89	1,462,625	1,243	25,252,147	20,315	3.8%
2014	59	1,675,707	79	1,402,917	1,223	25,524,937	20,871	2.7%
2015	61	2,029,302	85	1,505,855	1,199	26,048,384	21,725	4.1%
2016	64	2,523,786	87	1,612,104	1,176	26,436,619	22,480	3.5%
2017	83	3,605,382	77	1,404,251	1,182	28,637,750	24,228	7.8%
2018	71	4,644,122	71	1,406,722	1,182	29,674,018	25,105	3.6%
2019	68	2,394,217	66	1,334,917	1,184	30,733,318	25,957	3.4%
2020	81	3,115,757	91	1,949,136	1,174	31,899,939	27,172	4.7%
2021	65	2,558,463	88	1,823,988	1,151	32,634,414	28,353	4.3%
2022	65	2,809,221	78	1,824,299	1,138	33,821,665	29,720	4.8%

Exhibit XI.1 – Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions

The information and analysis used in supporting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Study performed for the period January 1, 2017, through December 31, 2021. Current data is reviewed in conjunction with each annual valuation.

Mortality Rates:

Post-retirement

The PubS-2010 Retiree Amount-weighted Mortality Table, using 119% of rates for males and 100% of rates for females (effective December 31, 2022)

Beneficiary:

The Pub-2010 Contingent Survivor Amount-weighted Mortality Table, using 100% of rates for males and 113% of rates for females (effective December 31, 2022)

Disabled:

The PubS-2010 Disabled Retiree Amount-weighted Mortality Table (effective December 31, 2022)

Pre-retirement:

The PubS-2010 Employee Amount-weighted Mortality Table (effective December 31, 2022)

The mortality tables specified above were determined to reasonably reflect the mortality experience of the Plan as of the valuation date. The mortality table was then adjusted to future years using generational projection under scale MP-2021 to reflect future mortality improvements.

Termination Rates:

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

Service	Rate (%)
0 – 0.99	2.00
1 – 1.99	0.80
2 – 8.99	0.60
9 – 13.99	0.50
14 – 29.99	0.40
30 and over	0.00

Retirement Rates:

Retirement rates are based on the recent experience of the Fund (effective December 31, 2022).

	Hired before January 1, 2011		Hired on or after January 1, 2011	
Attained Age	**Firefighters**	**Paramedics**	**Firefighters**	**Paramedics**
50	1.50%	2.00%	1.00%	1.00%
51	1.50%	2.75%	1.00%	1.00%
52	1.50%	2.75%	1.00%	1.00%
53	1.50%	3.50%	1.00%	1.00%
54	7.50%	12.00%	1.00%	1.00%
55	17.50%	20.00%	19.50%	22.00%
56	12.00%	12.00%	13.00%	13.00%
57	13.00%	12.00%	14.00%	13.00%
58	13.00%	12.00%	14.00%	13.00%
59	15.50%	14.00%	15.50%	14.00%
60	22.50%	15.00%	22.50%	15.00%
61	25.00%	30.00%	25.00%	30.00%
62	67.00%	25.00%	67.00%	25.00%
63	100.00%	25.00%	100.00%	25.00%
64		25.00%		25.00%
65		100.00%		100.00%

Disability Rates:

Disability rates are based on the recent experience of the Fund (effective December 31, 2022).

Attained Age	Rate
20 – 29	0.09%
30 – 34	0.10%
35 – 39	0.15%
40 – 44	0.32%
45 – 49	0.43%
50 – 54	0.74%
55 – 59	1.46%
60 – 63	1.75%

Unknown Data for Participants:	Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.
Spouse:	75% of members are assumed to be married, female spouses are assumed to be three years younger than male spouses, and 100% of spouses are assumed to be opposite gender. No assumption is made about other dependents.
Reciprocal Service:	No assumption for reciprocal service.
Military Service:	No assumption for military service.
Benefit Service:	Exact fractional years of service are used to determine the amount of benefit payable. After a participant has 20 years of service, future benefit service is increased to the nearest integer.
Decrement Timing:	All decrements are assumed to occur mid-year.
Decrement Relativity:	Decrement rates are used directly, without adjustment for multiple decrement table effects.
Decrement Operation:	Turnover decrements do not operate after member reached retirement eligibility for a minimum annuity formula benefit.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Pay Increase Timing:	Beginning of the fiscal year.
Beneficiary COLA Approximation:	For current retirees, benefits for future survivors were increased by 35% to approximate the value of COLA benefits earned prior to the retirees' death.
Member Contributions:	Based on payroll, adjusted to the middle of the year.
Net Investment Return:	6.75% per year, net of investment expense (effective December 31, 2018). The 6.75% assumption is composed of 2.50% inflation plus 4.25% real rate of return (effective December 31, 2022).
Inflation:	2.50% per year (effective December 31, 2022). The inflation assumption is used to determine annual increases in pension and the pensionable salary cap for Tier 2 members.
Wage Inflation and Payroll Growth:	3.50% per year.

Salary Increases:

Years of Service	Base Rate	Wage Inflation	Total
0	21.50%	3.50%	25.00%
1	9.50%	3.50%	13.00%
2	5.75%	3.50%	9.25%
3	4.75%	3.50%	8.25%
4	4.75%	3.50%	8.25%
5	0.50%	3.50%	4.00%
6 – 8	0.00%	3.50%	3.50%
9	3.25%	3.50%	6.75%
10 – 13	0.00%	3.50%	3.50%
14	3.25%	3.50%	6.75%
15 – 18	0.00%	3.50%	3.50%
19	3.75%	3.50%	7.25%
20 – 23	0.00%	3.50%	3.50%
24	3.00%	3.50%	6.50%
25 – 28	0.00%	3.50%	3.50%
29	1.25%	3.50%	4.75%
30 and over	0.00%	3.50%	3.50%

Administrative Expenses: Equal to actual expenses for the prior year. For purposes of the projection, future administrative expenses are assumed to increase by 2.50% each year.

Actuarial Value of Assets: Fair value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual fair value return and the expected return on the fair value, and is recognized over a five-year period.

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

Exhibit XI.2 – Projection Assumptions

Active Population:

Active members who are expected to terminate, retire, become disabled, or die during the year are replaced by new entrants such that the number of active members remains level during the projection period, based on the most recent actuarial valuation.

New Entrant Profile:

The entry age of future new entrants is based on the profile of current active members hired over the last five years with one or more years of service as of December 31, 2022. These members were hired from January 1, 2018, through December 31, 2022. Approximately 90% of the new entrants are assumed male.

Entry Age	Number
Less than 25	74
25 to 30	429
30 to 35	513
35 to 40	290
40 to 45	28
45 and over	29

New Entrant Starting Pay:

Based on the most recent employment contract, new entrants were assumed to earn $64,652 for the plan year ending December 31, 2022. The new entrant pay for member hired after 2022 is assumed to increase by the wage inflation assumption of 3.50%.

New Entrant Salary Increases:

Salary increases for new entrants subsequent to their starting pay at hire are based on the service-based salary increase assumptions.

The projections assumed a pay cap of $123,489 for 2023, increasing by 1.25% per year after plan year 2023. The annual increase of 1.25% is based on 50% of the CPI-U increase, which is assumed to be 2.50%.

Exhibit XII – Summary of Plan Provisions

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

Membership:	Any employee of the City of Chicago in its fire service as a firefighter, fire paramedic, fire engineer, marine engineer, or fire pilot, whose duty is to participate in the work of controlling and extinguishing fire at the location of any such fire, whether or not he is assigned to fire service other than the actual extinguishing of fire.
Tiers:	Tier 1: First hired before January 1, 2011 Tier 2: First hired on or after January 1, 2011
Employee Contributions:	Members of the Fund are required to contribute 9 1/8% of pensionable salary to the Fund as follows: 7 1/8% for the firefighter's annuity, 1.5% for the spouse's annuity, 3/8 of 1% for the automatic increases in the retirement annuity, and 1/8 of 1% for ordinary disability benefits. The contribution for ordinary disability benefits is not refundable.
Final Average Salary:	For Tier 1 members, the final average salary is the average salary of the highest four consecutive years within the last 10 years of service prior to retirement. For Tier 2 members, the final average salary is the average pensionable salary of the highest eight consecutive years within the last 10 years of service prior to retirement. Pensionable salary is limited to $106,800 in 2011, increased by the lesser of 3% or ½ of the change in CPI-U, not less than zero. For 2022, the salary limit was $119,829 and it is $123,489 for 2023.
Service:	All periods of active service, vacation, leave of absence with whole or part pay, military service, periods of disability for which the member receives a disability benefit, and leave of absence without pay to perform the duties of a member of the General Assembly prior to January 9, 1997. Service is computed on a day-to-day basis. Employees may purchase the 1980 strike time and periods of suspension less than one year. Employees may purchase, with 4% interest, periods of employment of the Chicago Fire Department from 1970 until the employee entered the Fund.

Retirement Annuity:

Tier 1

All Tier 1 retirement annuities are limited to 75% of highest salary. For participants who retire at age 50 or over with at least 20 years of service the minimum monthly annuity is the greater of $1,050 or 125% of the Federal Poverty Level. Retirement is mandatory at age 63, except for emergency medical technicians.

Earned Annuity	Eligibility: Age 50 and 10 years of service The earned annuity is based on Employee contributions accumulated for age and service annuity plus 1/10th of the sums accumulated from City contributions for the age and service annuity for each year of service over 10. At age 50 with 20 years of service or at age 63, the annuity is based on all sums accumulated to his or her credit.
Minimum Formula Annuity	Eligibility: Age 50 and 20 years of service The Minimum Formula Annuity is equal to 50% plus 2.5% for each year or fractional year of service over 20 years times final average salary. May not exceed 75% of final average salary.
Alternative Minimum Formula Annuity	Eligibility: Age 53 and 23 years of service The Alternative Minimum Formula Annuity is equal to 50% plus 2% of average salary for each year of service or fraction thereof after attaining age 53 with 23 years of service. Each participant who has completed 23 years of service before attaining age 53 shall have an additional 1% of average salary added for each year of service or fraction thereof in excess of 23 years up to age 53.
Compulsory Retirement Annuity	Eligibility: Age 63 and 10 years of service The Compulsory Retirement Annuity is equal to 30% of average salary for the first 10 years of service plus 2% of average salary for each completed year of service or fraction thereof in excess of 10 years, but not to exceed a maximum of 50% of average salary. The participant is entitled to statutory post retirement increases.

Tier 2	Eligibility: Age 50 and 10 years of service
Monthly Retirement Annuity	The Monthly Retirement Annuity is equal to 2.5% of average salary for each year of service, subject to an annuity reduction factor of one-half of 1% for each month that the participant's age at retirement is under age 55. Monthly retirement annuities shall not exceed 75% of average salary.
Automatic Increase:	
Tier 1	Either 20 or more years of service or receiving Compulsory Retirement Annuity: An employee annuitant is eligible to receive an annual increase of 3% of the original annuity (simple). This increase begins in January of the year of the first payment date following age 55 as long as the participant has been retired at least one year and one month. If the participant is over age 54 at retirement date, the automatic increase begins the first of the month following the first anniversary of his retirement and again each January 1st thereafter for life.
Tier 2	An employee annuitant or surviving spouse who is eligible to receive an increase in annuity benefit, shall receive an annual increase equal to the lesser of 3% or ½ of the annual unadjusted percentage increase in the Consumer Price Index-U. The increase is based on the amount of the originally granted benefit (simple). This increase begins in January of the year of the first payment date following the later of: 1) the attainment of age 60, or 2) the first anniversary of the annuity start date

Widow/Widower Annuity:	Payable until remarriage if the widow/widower remarries before age 60, except Compensation and Supplemental Annuities. If the annuity is suspended because the widow/widower remarries before age 60, annuity payments will be resumed if the subsequent marriage ends. Any widow/widower's annuity, which was suspended on account of remarriage prior to December 31, 1989, will be resumed if subsequent marriage ends, the later of July 14, 1995, or when the marriage ended. Beginning January 16, 2004, widows retain their rights to benefits after remarriage at any age. Benefits are not available to a widow of a firefighter who received a refund of contributions for widow's benefits, unless the refund is repaid with 4% interest per year.
Death in Service (Non-Duty)	The greater of: 1) if the firefighter dies with at least 1.5 years of serve, 30% of the salary attached to the rank of a first class firefighter in the classified career service at the time of the firefighter's death, 2) 50% of the annuity the deceased firefighter would have received if he had retired just prior to the date of death, 3) Earned Annuity benefit based on the total salary deductions and City contributions for age and service annuity and widow/widower's annuity. The widow of an active firefighter with 10 or more years of service will receive no less than 50% of the benefit that an active firefighter would have received had they attained age 50 and 20 years of service.
Death in Service (Duty Related)	Compensation annuity – The annuity paid to the spouse is equal to 75% of the firefighter's salary attached to his civil service position at the time of his death. The amount increases as the salary of the position increases.
Death in Service (Duty Disability)	Compensation annuity – The annuity paid to the spouse is equal to 75% of the firefighter's salary attached to his civil service position at the time of his death. The amount increases as the salary of the position increases. Death after retirement - If the firefighter dies after retirement, the spouse's annuity is equal to the greater of: 12) 50% (66-2/3% for Tier 2) of the annuity the deceased firefighter was receiving at the date of death, or 2) Earned annuity benefit based on the sums accumulated for the spouse annuity plus 10% of the accumulated City contributions for each year of service from 10 to 20 years, and the full accumulated City contributions after 20 years of service. The minimum annuity for any widow/widower is 125% of the Federal Poverty Level. For Tier 2 members, the annuity payable to the surviving spouse is equal to 66 2/3% of the participant's accrued retirement annuity without a reduction due to age.

Child Annuity:	A child's annuity is provided for an unmarried child of a deceased employee who is under the age of 18 (except where the child is so physically or mentally handicapped as to be unable to support himself). The annuity is 10% of the current annual maximum salary of a first class firefighter while a widow/widower survives and 15% when no widow/widower survives.
Family Maximum:	The total annuities for widow/widower and children cannot exceed 60% for non-duty death, or 100% for duty death, or the current maximum annual salary of a first class firefighter.
Parent Annuity:	A parent's annuity is provided for each surviving parent of a firefighter who dies prior to separation from service, or while out of service with at least 20 years of service, provided that there is no widow/widower or child and that the deceased firefighter was contributing to their support. The benefit is equal to 18% of the current annual salary attached to the classified position held by the firefighter at the time of death for each surviving parent.
Duty Disability Benefit:	Any employee who becomes disabled as the result of an injury incurred in the performance of any act of duty has a right to receive a duty disability benefit in the amount of 75% of salary at date of injury, plus $30 a month for each unmarried child less than age 18. If the child is handicapped, the $30.00 is payable until the participant is removed from his disability status. Child's duty disability benefit is limited to 25% of the employee's salary as of the date of injury. Effective January 1, 1994, the minimum benefit, if the employee has been on disability at least 10 years, is 50% of current salary of the rank held by the employee when he was removed from the Department payroll, regardless of whether that removal occurred before the disability date. The City contributes salary deductions for annuity purposes for the duty disability benefit. Such amounts contributed by the City after December 31, 1981, while the employee is receiving duty disability benefits, are not refundable to the employee and will be used for annuity purposes only.

Occupational Disease Disability Benefit:	Participants with a minimum of seven years of credible service that become disabled from heart disease, tuberculosis, any disease of the lungs or respiratory tract, AIDS, hepatitis C, stroke, or cancer that develops while employed by the department are entitled to occupational disease disability benefits. In order to receive this occupation disease disability benefit, the cancer involved must be a type which may be caused by exposure to heat, radiation or a known carcinogen as defined by the Internal Agency for Research on Cancer. Occupation disease disability benefits are equal to 65% of the participant's salary on the date of removal from payroll. The participant's children are also entitled to child's disability benefits in the amount of $30.00 per month per child under age 18. If the child is handicapped, the $30.00 is payable until the participant is removed from his disability status. The total amount of this benefit is not to exceed 75% of salary at the time of the grant. This benefit is fixed at the time the participant leaves the Fire Department payroll and is payable until the earlier of death, retirement, or a return to active duty. Effective January 1, 1994, no occupational disease disability benefit that has been payable for at least 10 years shall be less than 50% of the current salary attached from time to time to the rank and grade held by the participant at the time of his removal from the department payroll, regardless of whether that removal occurred before the effective date.
Ordinary Disability Benefit:	This benefit is granted for disabilities incurred other than in performance of an act of duty and is 50% of salary less 9% (for pension deductions) as of the last day worked. Length of time on disability is limited to a maximum of 50% of the employee's total service or five years, whichever occurs first. Ordinary disability benefits terminate when the disability ceases or the participant becomes eligible for minimum formula annuity. No children's benefits are payable.
Death Benefit:	An ordinary death benefit is paid to the designated beneficiary or beneficiaries of deceased participants. For active participants age 49 and under, the death benefit amounts to $12,000.00 and is reduced by $400.00 for each year over age 49 to a minimum of $6,000.00. A participant on disability is treated as though he were in active service in this regard. Eligible beneficiaries for participants retired after January 1, 1962, in receipt of retirement benefits, and whose separation from service (active duty) was effective on or after the participant's attainment of age 50, and application for such annuity was made within 60 days after separation from service (active duty), receive $6,000.00.

Refunds:	To Firefighters: Entire amount with interest An employee who resigns before age 50, or before age 57 with less than 10 years of service, is entitled to all salary deductions accumulated with interest to date of resignation (excluding ordinary disability pension deductions) with interest at 3%. A firefighter who receives a refund and who subsequently reenters service shall not receive (nor his or her widow/widower or parent) any annuity benefit or pension unless the refund is repaid with 4% interest. Repayment must be made within two years after reentry. For Widow/Widower Annuity: If the firefighter is not married when he retires on annuity, he or she will receive a refund of all his or her contribution, with interest, for the spouse's annuity. Refunds of Remaining Amounts: Amounts contributed by a firefighter, that have not been paid as an annuity or refund are refundable to the employee's estate with interest to the date of retirement or death, if the employee died in service. If there are children under age 18, the amount necessary to pay children annuities will not be refunded. No refund is paid to a widow/widower whose annuity is suspended because of marriage.
Compensation Widows:	Beginning January 1, 2001, mandatory retirement will have no effect on Widow benefits. Effective with the December 31, 2001, actuarial valuation, all Supplemental Widows have been reclassified as Compensation Widows.
Plan Year:	January 1 through December 31

Exhibit XIII – Legislative Changes in Plan Provisions

1968 to 1979 Sessions

- Compensation widow/widower annuities changed from $300 to 75% of salary.
- Supplemental widow/widower annuities became 40% of salary.
- Five-year average salary became four years.
- Minimum employee annuities increased from $200 in stages.
- Minimum widow/widower annuities increased from $100 in stages.
- Children’s annuities changed from $40/$60 to 10%/15% of salary of first class firefighter.
- Parent annuities increased to 18% of salary of first class firefighter.
- Lump sum benefits were increased.
- The deduction from salary increased from 1% to 1.5% of salary for the spouse annuity.

1979 Session

SB 854

- Recall of elective members of the Board of Trustees.

HB 291

- Authorizes invesment in Time Deposits of Certificate of Deposit.

HB 2012

- Under IRS Code Section 414(h), employer may pick up the employee contributions for all compensation earned after December 31, 1980, by a reduction in the cash salary or an offset to a future salary increase or by a combination of both.

1980 Session

- Transfer of credit to the General Assembly System.

HB 3635

- Reversed all changes made by HB 2012 and put the pick-up section as a new paragraph; they are treated as employee contributions for all purposes, including refunds and determination of the tax levy.

1981 Session

SB 21

- Actuarial Reporting Standards.

SB 851

- Authorizes investments in conventional mortgage pass-through securities.

SB 879

- Financial statement required by Department of Insurance within 6 months and actuarial statement within 9 months; $100 penalty per day if late.

HB 291

- Increase minimum survivor's annuity from $200 to $250.

Spring 1982 Session

SB 740

- Three percent post-retiremtn increase for employees born before January 1, 1930. All increases begin at age 60 instead of age 63 effective July 1, 1982.

SB 1127

- Group health hospital and surgical insurance premium $55 for annuitant not qualified to receive Medicare: $21 if annuitant is qualified, effectve January 1, 1983.

SB 1579

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

HB 2361

- Election by mail ballot.

Spring 1983 Session

SB 22

- Delegation of investment authority restrictions.

SB 1147

- Minimum reporting and actuarial information for 1984.

HB 366, SB 288

- Changes fiduciary standards: party in interest definition; reasonable care of co-fiduciary; eliminates civil action.

HB 377

- Cancer as occupational disability.

HB 380

- Paramedics as members July 1, 1983.

HB 455

- Bill of Rights.

HB 483

- Temporary position defined.

HB 514

- 10 percent prudent person investment category.

HB 755

- Change in lump sum death benefit: $6,000 if retired; $12,000 if active and under age 50, reduced bt $400 each year age age 50 or older.

HB 758

- Vote by mail.
- 50/20 2% minimum annuity formula (52/22 in 1984; 51/21 in 1985; 50/20 in 1986 and after).
- 30% salary of first class firefighter; widow/widower of active employee with 1.5 years of service effective June 30, 1984.
- 50% of retirement pension being paid (includes increases); widow/widower of retiree effective June 30, 1984.

City Ordinance

- Change in lump sum death benefit: $6,000 if retired; $12,000 if active and under age 50, reduced bt $400 each year age age 50 or older.
- Changes compulsory retirement from 63 to 70.

1984 Session

- Direct deposit.
- Illinois Public Employees' Pension Laws Commission abolished.

1985 Session

HB 164

- Occupational disability benefits from 50% to 65% of salary for new disabilities.
- Survivors; annuity for death in service 50% of the firefighter's annuity as if the deceased firefighter had retired just prior to the date of death.
- Removes alcoholism and venereal disease prohibition against paying ordinary disability.
- Removes adoption before age 50 requirement for child's benefit.

1986 Session

HB 2630

- Removes the age 18 limitation for handicapped children of duty and occupational disease disability recipients.
- Provides for waiver of annual physical examination for disability recipients if firefighter is permanently disabled and unable to ever return to service.

1987 Session

- No legislative changes.

1988 Session – City Ordinance

- Compulsory retirement changed to age 63.

1989 Session

HB 332

- $325 minimum widow/widower annuity effective January 1, 1988.

SB 95

- Changed the amount of fund paid health insurance “supplement” from January 1, 1988 until December 31, 1992 to $65 per month for each annuitant not qualified to receive Medicare benefits (and $35 if qualified) and from January 1, 1993 until December 31, 1997 the amounts are $75 and $45, respectively. Widows will now be eligible for supplement. The City will be required to pay 50% of the aggregated cost of health care claims for the retired group under all health care plans offered by the City. A procedure was established for the City to determine, with the help of an independent actuary, the aggregate cost of claims and premiums for each calendar year from 1989 through 1997 for the retired group.
- $475 minimum employee annuity effective January 1, 1990.
- Compensation and Supplemental annuitants may remarry after 1989 without loss of benefits.
- Employee refunds must be repaid at 4% before the later of two years after the date of reentry or January 1, 1992.
- Three percent postretirement increase beginning January 1, 1990, for employees born after December 31, 1929, and before January 1, 1940.
- Emplyee may purchase periods of suspension (not to exceed a total of one year of service) and 1980 strike time (not to exceed 23 days). Paramedic who transferred from the pension fund established under Article 8 of this Code to this Fund by operation of Public Act 83-780 may purchase Article 8 service at 4% annual compound interest rate prior to January 1, 1992, if the employee received a refund from the Article 8 fund.

1990 Session

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.

SB 1951

- Signed January 14, 1991. Service credit will be given for any periods prior to January 14, 1993, that an active firefighter who is a member of the General Assembly is absent to perform his legislative duties. No payment is required for this service credit. The current salary of the rank would be used for average salary for annuity purposes.
- Any firefighter who had service as a paramedic in the Municipal Fund and received a refund of contributions could receive credit for the service in the Fire Fund by making written application to the Board by January 1, 1992, and paying for the serive.
- Beginning December 31, 1990, any firefighter with at least 20 years of service may withdraw from the service at any age and receive an annuity calculated under Section 6-128 beginning at age 50 if under that age at withdrawal.
- Beginning January 1, 1990, the minimum widow/widower annuity is $400 per month for all those receiving a widow/widower annuity on January 14, 1991, and for future widow/widowers of employees who retired at age 50 or over with at least 20 years of service.
- If a widow/widower remarries after December 31, 1989, after attaining age 60, the annuity will continue without interruption. If the annuity is suspended because of remarriage before attaining age 60, annuity payments will be resumed if the subsequent marriage ends.
- If any widow/widower receives a widow/widower annuity from the Fire Fund and after December 31, 1989, marries a firefighter in the Fund, his/her first widow/widower annuity will be canceled if she accepts payment of a second widow/widower's annuity after he dies.
- Beginning January 14, 1991, any city officer can transfer his Fire service to the Municipal Fund.

1991 Session

- No legislative changes.

1992 Session

HB 969

- Approved March 26, 1992.
- Beginning January 1992, the minimum retirement annuity (requires retirement at age 50 or over with at least 20 years of service) was increased to $650 per month and the minimum widow/widower annuity was increased to $500 for those receiving an annuity and those who will be eligible in the future (requires retirement or death in service at age 50 or over with at least 20 years of service).

SB 1650

- Approved January 25, 1993.
- The minimum retirement annuity (requires retirement at age 50 with at least 20 years of service) was increased to $750 per month on January 1, 1993, and $850 per month on January 1, 1994.
- The minimum widow/widower annuity (requires retirement or death in service at age 50 or over with at least 20 years of service) was increased to $600 per month on January 1, 1993, and $700 per month on January 1, 1994, for those eligible present and future widow/widowers.
- Service credit will be given for any periods in General Assembly prior to January 9, 1997 (instead of January 14, 1993),
- The annuitant may waive all or any portion of his annuity.

1993 Session

SB 358

- Approved January 10, 1994.
- Beginnning January 1, 1994, minimum Duty and Occupational Disease Disabilities have been established, if the employee has been on disability for 10 years: 50% of current salary of rank at removal from Department payroll.

ADEA

- Effecitive January 1, 1994, the federal law (ADEA) allowing compulsory retirement at age 63 lapsed. As such, duty disability and occupational disease disability beneifts and widow/widower compensation benefits may be “open ended”; i.e., without limiting age.

1994 Session

- No legislative changes.

1995 Session

SB 114

- Approved July 14, 1995.
- The minimum widow/widower annuity was increased to $700 per month to anyone entitled to receive a widow/widower annuity.
- A widow/widower's annuity that was previously terminated because of remarriage before December 31, 1989, will be resumed upon proper application if the subsequent marriage has ended.
- Employees have until two years after the date of reentry or Januuary 1, 2000, to repay a refund.
- For employee annuitants born before January 1, 1945, the 3% postretirement increase begins at age 55.
- The provisions relating to purchase of credit for certain periods of service as a paramedic or other fire department employee were changed.
- The City is authorized to substitute funds obtained from Borrowings and other sources for a portion of its authorized tax levy for pension purposes.
- 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 Members before 1996.
- The Plan 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

SBJPA

- On August 20, 1996, the Small Business Job Protection Act was signed by President Clinton.
- Treatment of governmental plans under Code Section 415:
- Rule limiting annual benefit to 100 percent of the average of the highest three-year compensation no longer applies.
- Excess benefit plans are permitted to provide Members with benefits in excess of the Code Section 415 limits.
- Early retirement reduction does not apply to certain survivor and disability benefits.

- The definition of compensation now includes elective deferrals.
- Taxation of distributions:
  - $5,000 death benefit exclusion was repealed for deaths after August 20, 1996.
  - Five-year averaging for lump sum distributions was repealed effective January 1, 2000.
  - Annuity payments will be taxed according to a simplified general rule, which uses investment and age as of annuity starting date for annuities, which start on or after November 19, 1996.

1997 Session

HB 313

- Signed June 27, 1997.
- Coverage in the City group health insurance is extended through June 30, 2002, with some modification in plans offered. Pension fund supplement remains at $45 and $75 for Medicare eligible and non-Medicare eligible annuitants, respectively.

1998 Union Contract Cost of Living Increases

- The following salary increases are scheduled:
  - 1.5% effective July 1, 1995.
  - 1.5% effective January 1, 1996.
  - 1.5% effective July 1, 1996.
  - 3.5% effective January 1, 1997.
  - 3.75% effective January 1, 1998.
  - 2.25% effective January 1, 1999.

1998 Session

- The minimum widow/widower annuity (requires retirement or death in service at age 50 or over with at least 20 years of service) was increased to $800 per month on January 1, 1999, for those eligible present and future widow/widowers.

1999 Session

- No legislative changes.

2000 Session

- In 2000, the City of Chicago enacted mandatory retirement for all firefighters, except for emergency medical technicians, upon attainment of age 63.

2001 Session

- No legislative changes.

2002 Session

HB 5168

- Effective June 28, 2002.
- The pension fund subsidy for retiree health insurance was extended through June 30, 2003 (other than child annuitants). The subsidy is $75 per month if the annuitant is not eligible for Medicare and $45 per month if the annuitant is eligible for Medicare.

2003 Session

SB 1701

- Effective July 1, 2003.
- The healthcare benefits were extended and increased to $85 per month for non-Medicare eligible participants and $55 per month for Medicare eligible participants for the period from July 1, 2003, through June 30, 2008. Thereafter, the benefits are extended and increased from $85 to $95 and $55 to $65 for the period July 1, 2008, to June 30, 2013.
- The healthcare benefits referred to above are not and shall not be construed to be pension or retirement benefits for the purposes of Section 5 of Article XIII of the Illinois Constitution of 1970.

2004 Session

PA 93-0654

- Effective January 16, 2004.
- Changes to the definition of salary used for benefit calculations.
  - For members born before 1955, who hold an exempt position above career service rank, salary means the actual salary attached to the exempt rank position.
  - Salary as an ambulance commander shall be included. Employee contributions must be made retroactively before January 1, 2006. Beneficiaries may also make the contributions.
  - Additional compensation for being licensed as an EMT shall be included.

- Duty availability pay shall be included. Employee contributions must be made retroactively before January 1, 2006. Beneficiaries may also make the contributions.

- An employee who reaches the compulsory retirement age with greater than 10 years of service, but less than 20, is now entitled to an annuity of 30% of average salary for the first 10 years of service plus an additional 2% for each year in excess in excess of 10, not to exceed 50%
- The minimum annuity formula accrual rate for service after 20 years was increased from 2% to 2.5% with total benefits limited to 75% of final average pay.
- The minimum annuity was increased to $900 per month during 2004 and $1,000 per month thereafter.
- The widow of an active firefighter with 10 or more years of service will receive no less than 50% of the benefit the active firefighter would have received had he attained age 50 and 20 years of service.
- A widow who was married to a deceased firefighter before the firefighter began to receive a retirement annuity and for at least one year preceding the firefighter's death is entitled to a widow's benefit. Any refunded contributions must be repaid with 4% interest.
- A widow's benefit will continue following remarriage. Those annuities previously terminated will resume.
- Members born prior to January 1, 1955, are entitled to a 3% simple COLA commencing at the later of age 55 or the first anniversary of retirement. Members born on or after January 1, 1955, are entitled to a 1.5% COLA commencing at the later of age 60 or the first anniversary of retirement limited to 30%. Previously the cutoff date was January 1, 1945.
- Former City contributions for paramedics will be transferred to this fund with 11% interest and credited to the individual firefighter if he or she pays for the prior service as a paramedic in full.

Bertucci court opinion

- Effective June 29, 2004.
- For members who die while receiving duty disability payments, the widow's benefit is now 75% of the member's salary attached to his civil service position. The benefit increases as the salary attached to this position increases. Previously the widow's benefit was 50% of the member's benefit.

PA 93-0917 (HB 378)

- Changes the widow eligibility conditions by expanding widow benefits that were previously limited by marriage conditions after withdrawal or disability. Benefits cannot be reinstated or granted earlier than January 16, 2004.

- A firefighter who accumulated service under the Municipal Employees' Annuity and Benefit Fund of Chicago, who terminated and received a refund, may purchase such service credit until January 1, 2005. Those firefighters who retired after January 16, 2004, but before the effective date of this act, may still purchase service before January 1, 2005, and have their benefit recalculated. Employer contributions with interest for such service will be transferred from the Municipal Employees' Annuity and Benefit Fund to the Firemen's Annuity and Benefit Fund.

2005 Session

SB 23

- Approved June 27, 2005.
- Prohibits the investment or deposit from the retirement system or pension fund to certain entities doing business in or with the government of the Republic of the Sudan. Fund managing companies must certify that under Section 1-110.5 of the pension code that they have not loaned to, invested in, or otherwise transferred any of the pension fund assets to a forbidden entity.

2006 Session

- No legislative changes.

2007 Session

PA 95-0279

- Beginning January 1, 2008, removes restriction that a child be born or legally adopted before withdrawal from service for a child's annuity. Removes restriction requiring that adoption proceedings must have been initiated one year prior to the firefighter's death.

2008 Session

- No legislative changes.

2009 Session

PA 95-1036

- Effective February 17, 2009.
- Allows a terminally ill firefighter to apply for disability while still an active member.

PA 96-0006

- Effective April 3, 2009.
- The Illinois Governmental Ethics Act.

PA 96-260

- Effective August 11, 2009.
- A firefighter may purchase up to 24 months of service credit attributed to service in the armed forces of the United States prior to employment as a firefighter by making contributions to the Fund equal to: (i) employee contributions during the period served, (ii) employer normal costs during the period served and (iii) compound interest at the actuarially assumed rate from date of membership in the Fund until the date of payment.

PA 96-727

- Effective August 25, 2009.
- Extends the repayment of refund for reinstated service to January 1, 2001, with interest calculated at the actuarially assumed rate.
- Allows a firefighter to transfer eligible service with the Article 8 Fund – the Municipal Employees' Annuity and Benefit Fund of Chicago. The firefighter is required to pay the Fund an amount equal to; (i) employee contributions during the period served, (ii) employer normal costs during the period served and (iii) compound interest at the actuarially assumed rate from date of membership in the Fund until the date of payment. Written application must be made by January 1, 2010.
- Allows a firefighter to transfer up to 10 years of eligible service with the Article 4 Fund – "Downstate Fund." The firefighter is required to pay to the Fund an amount such that the transfer results in no additional unfunded actuarial accrued liability to the Fund based on the assumptions and methods used in the most recent actuarial valuation. Contributions transferred from the Downstate Fund are used to offset the required payment from the firefighter.
- Allows the Fund to recover damages from a third party responsible for the death or disability payable from the Fund.

PA 96-753

- Effective August 25, 2009.

- Provides that it is the public policy of the State to encourage pension funds to promote the economy of Illinois through the use of economic opportunity investments within the bounds of financial and fiduciary prudence.
- Requires the Fund to instruct the investment advisors to utilize investment strategies designed to ensure that all securities transactions are executed in such a manner that the total explicit and implicit costs and the total proceeds in every transaction are the most favorable under the circumstances.

2010 Session

Public Act 96-1466

- Effective August 20, 2010.
- Members entering the Fund on or after January 1, 2011, shall not be given service credit in the Fund for any period of time in which the member was in receipt of retirement benefits from any annuity and benefit fund in operation in the City.

Public Act 96-1495 (HB 3538)

- Effective January 1, 2011.
- Changes the financing for the Fund. Assets are marked to market at March 30, 2011. For fiscal years after March 30, 2011, actuarial value of assets is used based on five-year smoothing. The City levies a new tax starting in FY 2015. Each year, employer contributions combined with member contributions and other fund revenue must be equal to the amount that is sufficient to produce 90% funding by the end of fiscal year 2040. The projections are based on an open group projection and level percent of pay financing and statutorily required contributions, then the State, starting in FY 2016, could withhold State grants to the City, and directly deposit the withheld funds into the FABF, The withheld funds are limited to 33% of total State grants to City in FY 2016, 67% in FY 2017, and 100% on and after FY 2018,
- Establishes a new tier of benefits for participants that first become members on or after the effective date of January 1, 2011.
  - Minimum retirement eligibility is at age 55 with 10 years of service.
  - The annuity is based on an accrual rate of 2.5%, subject to a maximum of 75%
  - Employees may retire at age 50 with 10 years of service with the annuity based on an accrual rate of 2.5%, reduced by one half of one percent per month for retirement prior to age 55, subject to a maximum of 75%
  - Final average compensation is based on the average of the highest consecutive 96 months within the last 120 months of service.
  - Establishes a cap on final average salary of $106,800, as automatically increased by the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
  - Changes provisions for automatic increases in annuity:

    - Increases are equal to the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months, commencing at age 60 with no 30% cap.
    - Increase is applied to the original granted retirement annuity (simple).
  - Changes benefits provided to surviving spouses:
    - Surviving spouse annuity is equal to 66 2/3 percent of the participant's earned retirement annuity at the date of death.
    - Provides an automatic increase in annuity:
      - Increases are equal to the lesser of 3 percent or one-half of the annual increase in the Consumer Price Index-U during the preceding 12-months.
      - Increase is applied to the original granted retirement annuity (simple).

2011 Session

Public Act 97-0530 (SB 1672)

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

Public Act 97-0609 (SB 1831)

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

Public Act 97-0504 (HB 1670)

- Approved August 23, 2011.
- Amends the Open Meetings Act.

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

2012 Session

Public Act 97-0651

- Approved and effective January 5, 2012.
- Requires any reasonable suspicion of fraud against the Fund to be reported to the State's Attorney for investigation.
- Changes provisions for Union Leaves of Absence.

2013 Session

Public Act 98-0043 (HB 1584)

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

Section 4: Reporting Information

Public Act 98-0433 (HB 2620)

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

2014 Session

- No legislative changes.

2015 Session

- No legislative changes.

2016 Session

Public Act 99-0506

- Approved and effective May 30, 2016.
- Changes the funding policy. For payment years 2016 through 2020, specifies the amount for the City of Chicago’s required annual contribution to the Fund. Beginning in payment year 2021, the City’s total required contribution to the Fund shall be an amount that is equal to the normal cost of the fund, plus an amount sufficient to bring the total assets of the fund up to 90% of the total actuarial liabilities of the fund by payment year 2055 (instead of 2040).
- Changes the actuarial cost method to entry age normal.
- Includes provisions for funding from any proceeds received by the city in relation to the operation of a casino within the city.
- Provides a mechanism to enforce funding through mandamus.
- Creates a new minimum retirement annuity provision equal to 125% of the federal poverty level for certain persons.

Public Act 99-0905

- Approved and effective November 29, 2016.
- Specifies the manner of calculating the Tier 2 surviving spouse’s annuity for Tier 2 firefighters who die in service with at least 1 ½ years of service.
- Specifies the manner of calculating duty death benefits for Tier 2 surviving spouses and provides that Tier 2 duty death benefits are not payable where the death is the result of an intervening cause.

- Includes provisions for a minimum surviving spouse annuity equal to 125% of the federal poverty level.
- Increases the Tier 1 automatic increase in retirement annuity for persons born after December 31, 1954, but before January 1, 1966.
- Amends the States Mandates Act to require implementation without reimbursement.

2017 Session

Public Act 100-0344

- Approved and effective August 25, 2017.
- Provides for the forfeiture of benefits for any person who otherwise would receive a survivor benefit who is convicted of any felony relating to or arising out of or in connection with the service of the member from whom the benefit results.

Public Act 100-0539

- Approved and effective November 7, 2017.
- For firefighters born after December 31,1954, but before January 1, 1996, changed the initial increase granted and provides for a 3% increase if a 1.5% increase was previously granted.

Public Act 100-0544

- Approved and effective November 8, 2017.
- At any time during the six months following the effective date of the Public Act, an active member may apply for a transfer of up to 10 years of his or her creditable service accumulated in an Article 4 (downstate) pension fund.

2018 Session

Public Act 100-1144

- Approved and effective November 28, 2018.
- Authorizes a person to participate in the Chicago Firefighter Article if he or she:
  - Is or was employed and receiving a salary as a firefighter;
  - Has at least 5 years of service under the Chicago Firefighter Article;
  - Is employed in a position covered under a specified provision of the Chicago Municipal Article relating to aldermen and member of the city council;

- Made an election under the Chicago Municipal Article to not receive service credit or be a participant under that Article; and
- Made an election to participate under the Chicago Firefighter Article.

- Defines salary for such a person as the lesser of:
  - The salary associated with the highest career service rank under the Chicago Firefighter Article, or
  - The actual salary received by that person for service under a specified provision of the Chicago Municipal Article relating to aldermen and members of the city council.

Public Act 100-1148

- Approved and effective December 10, 2018.
- Technical correction related to filing copies of the report as required by Section 3.1 of the General Assembly Organizational Act and with the State Government Report Distribution Center for the General Assembly.

2019 Session

Public Act 101-0096

- Approved and effective July 19, 2019.
- Changed the term length for the annuitant member of the Retirement Board of the Firemen's Annuity and Benefit Fund.

Public Act 101-0365

- Approved and effective August 9, 2019.
- For firefighters entering service after January 1, 2020 changed the criteria for conclusive evidence of birth date.

Public Act 101-0474

- Approved and effective August 23, 2019.
- Provides for transfer of service between the Fund and Article 4 pension funds.

2020 Session

Public Act 101-0633

- Approved and effective June 5, 2020.

- Establishes presumptions regarding death because of exposure and contraction of COVID-19.

2021 Session

Public Act 101-0633

- Establishes presumptions regarding death because of exposure and contraction of COVID-19.

Public Act 101-0653

- Approved and effective February 26, 2021.
- Extends the end date of the period for which certain presumptions apply regarding death because of exposure and contraction of COVID-19.

Public Act 101-0673

- Approved and effective April 5, 2021.
- For Tier 1 firefighters born after January 1, 1966, changed the age of first increase and the amount of increases.

Public Act 102-0091

- Approved and effective July 9, 2021.
- Provides that firefighters receiving a retirement annuity may instead receive an occupation disease disability benefit until compulsory retirement age if certain conditions are met.

Public Act 102-0293

- Approved and effective August 6, 2021.
- Provides that when a future entrant who is not subject to the compulsory retirement age withdraws from service and is at least age 63, his or her age and service annuity shall be fixed as of the age he or she withdraws from service.
- Removes an age limitation on eligibility for a contribution refund.

2022 Session

Public Act 102-0836

- Approved May 13, 2022; retroactive to August 6, 2021.

- Reinstates the age limitation on eligibility for a contribution refund provided by Public Act 102-0293

Public Act 102-0884

- Approved and effective May 13, 2022
- Provides that beginning January 1, 2023, the minimum widow's annuity shall be no less than 150% (rather than 125%) of the Federal Poverty Level for all persons receiving widow's annuities on or after that date

2023 Session

Public Act 103-0002

- Approved and effective May 10, 2023.
- Provides that firefighters who became disabled as a result of exposure to COVID-19 on or after March 9, 2020, and on or before June 30, 2021, are eligible to receive a duty disability benefit.

Section 5: GASB 67 and 68 Information

Exhibit 1 – Net Pension Liability

The components of the net pension liability at December 31, 2022, were as follows:	
Total pension liability	$7,216,409,422
Plan fiduciary net position	1,357,695,828
Net pension liability	5,858,713,594
Plan fiduciary net position as a percentage of the total pension liability	18.81%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2022, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	3.50% to 25.00%, varying by years of service
Investment rate of return	6.75%, net of investment expense
Municipal bond index	3.72%, based on the Bond Buyer 20-Bond Index of general obligation municipal bonds effective as of the December 31, 2022, measurement date
Single equivalent discount rate	6.75%
Cost of living adjustments	Tier 1: 3% simple Tier 2: The lesser of 3% or one-half of the change in CPI-U, simple

Post-retirement mortality rates for non-disabled pensioners were based on the PubS-2010 Retiree Amount-weighted Mortality Table, using 119% of rates for males and 100% of rates for females, projected generationally using scale MP-2021. Post-retirement rates for disabled pensioners were based on the PubS-2010 Disabled Retiree Amount-weighted Mortality Table, projected generationally using scale MP-2021. Beneficiary mortality rates were based on the Pub-2010 Contingent Survivor Amount-weighted Mortality Table, using 100% of rates for males and 113% of rates for females, projected generationally using scale MP-2021. Pre-retirement mortality rates were based on the PubS-2010 Employee Amount-weighted Mortality Table, projected generationally using scale MP-2021.

The actuarial assumptions used in the December 31, 2022, valuation are based on the results of an experience study for the period January 1, 2017, through December 31, 2021.

Section 5: GASB 67 and 68 Information

Discount rate: The discount rate used to measure the total pension liability was 6.75%. The projection of cash flows used to determine the discount rate assumed member contributions will be made according to the contribution rate applicable for each member's tier and that employer contributions will be made as specified by Public Act 99-0506. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions and contributions from future plan members that are intended to fund the service costs of future plan members and their beneficiaries are not included. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make projected future benefit payments of current plan members throughout the projection period. Therefore, the long-term expected rate of return on pension plan investments of 6.75% was applied to projected benefit benefits for all periods.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of December 31, 2022, calculated using the discount rate of 6.75%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (5.75%) or 1-percentage-point higher (7.75%) than the current rate:

	1% Decrease (5.75%)	**Current Discount Rate (6.75%)**	**1% Increase (7.75%)**
Net pension liability as of December 31, 2022	$6,706,055,824	$5,858,713,594	$5,147,009,168

Exhibit 2 – Schedules of Changes in Net Pension Liability

	2022	2021
Total pension liability		
Service cost	$111,917,214	$112,730,338
Interest	466,819,133	429,630,005
Change of benefit terms	11,737,121	196,531,562
Differences between expected and actual experience	(30,666,655)	93,928,230
Changes of assumptions	53,664,613	(340,370,762)
Benefit payments, including refunds of employee contributions	(401,967,582)	(388,674,676)
Net change in total pension liability	211,503,844	103,774,697
Total pension liability – beginning	7,004,905,578	6,901,130,881
Total pension liability – ending (a)	$7,216,409,422	$7,004,905,578
Plan fiduciary net position		
Contributions – employer*	$399,209,599	$367,481,614
Contributions – employee	53,030,821	52,268,136
Net investment income	(155,590,040)	129,513,641
Benefit payments, including refunds of employee contributions	(401,967,582)	(388,674,676)
Administrative expense	(3,390,041)	(3,082,062)
Other	5,150	4,788
Net change in plan fiduciary net position	(108,702,093)	157,511,441
Plan fiduciary net position – beginning	1,466,397,921	1,308,886,480
Plan fiduciary net position – ending (b)	$1,357,695,828	$1,466,397,921
Fund's net pension liability – ending (a) – (b)	$5,858,713,594	$5,538,507,657
Plan fiduciary net position as a percentage of the total pension liability	18.81%	20.93%
Covered employee payroll	$525,479,549	$520,047,197
Fund's net pension liability as percentage of covered employee payroll	1,114.93%	1,065.00%

** Receivable amount to be paid the following year*

Exhibit 3 – Reconciliation of Net Pension Liability

Changes in the net pension liability from the beginning of the year to the end of the year arise from the net difference between changes in the total pension liability and plan fiduciary net position that occurred during the year. Changes in net pension liability will be recognized immediately as pension expense, or reported as deferred outflows of resources related to pensions or deferred inflows of resources related to pensions, depending on the nature of the change.

Differences between actual and expected investment-related experience are recognized over a closed five-year period. Differences between actual and expected non-investment-related experience and changes of assumptions are recognized over the average of the expected remaining service lives of all members who are provided with pensions through the pension plan (active employees and inactive employees). The amounts below that are not included in pension expense for the current year are included in deferred outflows of resources or deferred inflows of resources related to pensions.

	Increase/(Decrease) For Fiscal Year Ending December 31, 2022		
	Total Pension Liability (a)	**Plan Fiduciary Net Position (b)**	**Net Pension Liability (a) – (b)**
Balances at beginning of year	$7,004,905,578	$1,466,397,921	$5,538,507,657
Changes for the year			
Service cost	111,917,214	0	111,917,214
Interest	466,819,133	0	466,819,133
Differences between expected and actual experience	(30,666,655)	0	(30,666,655)
Contributions – employer	0	399,209,599	(399,209,599)
Contributions – member	0	53,030,821	(53,030,821)
Other income	0	5,150	(5,150)
Net investment income	0	(155,590,040)	155,590,040
Benefit payments, including refunds of employee contributions	(401,967,582)	(401,967,582)	0
Administrative expense	0	(3,390,041)	3,390,041
Change of assumptions	53,664,613	0	53,664,613
Changes of benefit terms	11,737,121	0	11,737,121
Net changes	211,503,844	(108,702,093)	320,205,937
Balances at end of year	$7,216,409,422	$1,357,695,828	$5,858,713,594

Exhibit 4 – Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	Year Established	Original Balance	Original Amortization Period	Amortization Amount	Outstanding Balance at December 31, 2022
Outflows					
Demographic	2017	$26,954,338	5.9972	$4,481,903	$0
Assumption	2017	414,218,762	5.9972	68,875,302	0
Assumption	2018	382,610,753	5.9966	63,804,615	63,587,678
Investment	2018	141,270,068	5.0000	28,254,012	0
Assumption	2019	190,954,465	6.0508	31,558,548	64,720,273
Demographic	2020	174,717,534	6.4542	27,070,449	93,506,187
Assumption	2020	30,468,135	6.4542	4,720,683	16,306,086
Demographic	2021	93,928,230	6.6913	14,037,271	65,853,688
Assumption	2022	53,664,613	6.8373	7,848,802	45,815,811
Investment	2022	242,681,044	5.0000	48,536,208	194,144,836
Total outflows				**$299,187,793**	**$543,934,559**
Inflows					
Demographic	2018	$56,417,879	5.9966	$9,408,311	$9,376,324
Demographic	2019	65,213,748	6.0508	10,777,707	22,102,920
Investment	2019	105,587,267	5.0000	21,117,453	21,117,453
Investment	2020	42,694,156	5.0000	8,538,831	17,077,662
Assumption	2021	340,370,762	6.6913	50,867,314	238,636,134
Investment	2021	52,621,382	5.0000	10,524,276	31,572,828
Demographic	2022	30,666,655	6.8373	4,485,200	26,181,455
Total inflows				**$115,719,092**	**$366,064,776**

** The average expected remaining service lives of all members is 6.8373 years, determined as of January 1,2022. This amount is equal to the total expected remaining service of 69,426 years, divided by total employees that are provided with pensions through the plan of 10,154 (as shown in the table below).*

	Expected Remaining Service	Counts	Average of the Expected Remaining Service
Active Members	69,426	4,735	14.6623
Inactive Members		154	
In Pay Members		5,265	
Total Employees	69,426	10,154	6.8373

Exhibit 4 – Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions *(continued)*

At December 31, 2022, deferred outflows of resources and deferred inflows of resources related to pensions are

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$159,359,875	$57,660,699
Changes of assumptions	190,429,848	238,636,134
Net differences between projected and actual earnings on pension plan investments	124,376,893	N/A
Total	$474,166,616	$296,296,833

Deferred outflows of resources and deferred inflows of resources related to pensions will be recognized as follows:

Year ended December 31:	
2023	$81,672,535
2024	48,578,634
2025	37,392,295
2026	29,508,645
2027	(22,098,672)
Thereafter	2,816,346

Exhibit 5 – Pension Expense

	Fiscal Year Ending December 31, 2022	Fiscal Year Ending December 31, 2021
Components of pension expense		
Service cost	$111,917,214	$112,730,338
Interest on the total pension liability	466,819,133	429,630,005
Projected earnings on plan investments	(87,091,004)	(76,892,259)
Contributions – member	(53,030,821)	(52,268,136)
Other income	(5,150)	(4,788)
Administrative expense	3,390,041	3,082,062
Recognition of:		
Changes of assumptions	125,940,636	107,297,954
Difference between expected and actual experience	20,918,405	28,978,032
Difference between projected and actual earnings on pension plan investments	36,609,660	(25,001,507)
Change of benefit terms	11,737,121	196,531,562
Total pension expense	$637,205,235	$724,083,263

Exhibit 6 – Schedule of Employer Contributions

Year Ended December 31	Actuarially Determined Contributions*	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Actual Employee Payroll**	Contributions as a Percentage of Covered Employee Payroll
2011	$250,056,273	$82,869,839	$167,186,434	$425,385,354	19.48%
2012	271,505,718	81,521,883	189,983,835	418,964,763	19.46%
2013	294,877,895	103,669,015	191,208,880	416,491,784	24.89%
2014	304,265,411	107,334,399	196,931,012	460,189,982	23.32%
2015	323,544,987	236,104,362	87,440,625	465,231,594	50.75%
2016	333,952,291	154,101,396	179,850,895	478,470,944	32.21%
2017	372,845,121	228,452,611	144,392,510	469,407,281	48.67%
2018	412,220,284	249,684,038	162,536,246	456,969,301	54.64%
2019	442,044,761	255,382,266	186,662,495	457,082,316	55.87%
2020	466,556,303	368,422,961	98,133,342	500,367,870	73.63%
2021	476,497,828	367,481,614	109,016,214	520,047,197	70.66%
2022	509,936,459	399,209,599	110,726,860	525,479,549	75.97%

* The historical FABF Statutory Funding Policy does not conform to Actuarial Standards of Practice; therefore, the Actuarially Determined Contribution is equal to the normal cost plus an amount to amortize the unfunded liability using level dollar payments and a 30-year amortization period. Amounts for fiscal years prior to 2015 were based on the “ARC,” which was equal to normal cost plus an amount to amortize the unfunded liability using a 30-year open period level dollar amortiization.

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

Notes to Exhibit 6

Valuation date	Actuarially determined contribution amount is determined as of December 31, with appropriate interest to the end of the year.
Methods and assumptions used to establish "actuarially determined contribution" rates:	
Actuarial cost method	Entry Age Actuarial cost method
Amortization method	30-year open, level dollar amortization
Asset valuation method	5-year smoothed fair value
Actuarial assumptions:	
Investment rate of return	6.75%, net of investment expense
Projected salary increases	3.50% to 25.00%, varying by years of service
Mortality	Post-retirement mortality rates were based on the RP-2014 Blue Collar Healthy Annuitant Mortality Tables, scaled by 106% for males and 98% for females, and projected generationally using scale MP-2017. Disabled mortality rates were based on the RP-2014 Blue Collar Healthy Annuitant Mortality Tables, scaled by 107% for males and 99% for females, and projected generationally using scale MP-2017.Pre-retirement mortality rates were based on the RP-2014 Blue Collar Employee Mortality, scaled by 92% for males and 100% for females, projected generationally using scale MP-2017.
Cost of living adjustments	Tier 1: 3% simple Tier 2: The lesser of 3% or one-half of the change in CPI, simple
Other assumptions:	Same as those used in the December 31, 2021, actuarial funding valuations.

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