# Firemen's Annuity and Benefit Fund of Chicago

**Governmental Accounting Standards Board Statement Nos. 74 & 75 (GASB 74 & 75)**

Actuarial Valuation of Other Postemployment Benefits (OPEB)
Based on December 31, 2023 Measurement Date for Plan and Employer Reporting Purposes

May 2024



Segal

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June 7, 2024

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 Governmental Accounting Standards Board (GASB) Statement Nos. 74 & 75 Actuarial Valuation based on a December 31, 2023, measurement date. It summarizes the actuarial data used in this valuation; establishes the net other post-employment benefits (OPEB) liability as of December 31, 2023, under GASB Statement No. 74, the OPEB expense for the fiscal year ending December 31, 2023, under GASB Statement No. 75, and analyzes the preceding years' experience.

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

**Membership Data**

The census 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 assumptions and actuarial 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 in the December 31, 2023, 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 74 and 75. Further, in our opinion, the assumptions as approved by the Board appear to be reasonably related to the experience of the Fund.

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

Sincerely,

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

Daniel J. Siblik, ASA, FCA, MAAA, EA
Vice President and Actuary

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# Section 1: Actuarial Valuation Summary

## Purpose

This report has been prepared by Segal to present certain disclosure information required by Governmental Accounting Standards Board Statement Nos. 74 and 75 (GASB 74 and 75) based on a December 31, 2023, measurement date. It contains information that is disclosed by the Firemen's Annuity and Benefit Fund of Chicago (FABF or Fund or Plan) in accordance with GASB 74 and is used to assist FABF-affiliated employers with their reporting requirements under GASB 75.

The liabilities presented in this report were based on:

- The benefit provisions of the Fund, as outlined in 40 ILCS 5/4 and administered by the Retirement Board;
- The characteristics of covered active members, inactive vested members, and retirees as of December 31, 2023, provided by FABF staff;
- Economic assumptions regarding future salary increases; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

## Valuation Highlights

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

1. It is important to note that GASB 74 and 75 only define OPEB liability and expense for financial reporting purposes, and do not apply to contribution amounts for OPEB funding purposes, to the extent there are any.
2. The Net OPEB Liability (NOL) is equal to the difference between the Total OPEB Liability (TOL) and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the fair value of assets. At this point, there are no assets allocated to the FABF OPEB liability and the Plan is considered entirely unfunded. As such, the discount rate used to value the TOL is equal to the municipal bond index rate of 3.26% effective as of the December 31, 2023, measurement date.
3. The NOL as of December 31, 2023, is $8,992,151 compared to $8,336,979 as of December 31, 2022. The increase in NOL is primarily due to demographic experience and a decrease in the municipal bond index rate used in the valuation from 3.72% to 3.26%.
4. The TOL was based upon the results of the actuarial valuation as of December 31, 2023.

# Section 1: Actuarial Valuation Summary

**Summary of Key OPEB Valuation Results**

| | 2023 | 2022 |
|---|---|---|
| **Contributions for plan year:** | | |
| Actuarially determined contribution requirement | N/A | N/A |
| Expected employer contributions | 0 | 0 |
| Actual employer contributions | -- | -- |
| **Valuation elements for plan year ending December 31:** | | |
| Employer normal cost, including administrative expenses, adjusted for timing | $104,639 | $168,461 |
| Market value of assets | 0 | 0 |
| Actuarial accrued liability | 8,992,151 | 8,336,979 |
| Unfunded actuarial accrued liability | 8,992,151 | 8,336,979 |
| Funded ratio | 0.00% | 0.00% |
| **GASB information as of December 31:** | | |
| Discount rate | 3.26% | 3.72% |
| Total OPEB liability | $8,992,151 | $8,336,979 |
| **Demographic data as of December 31[1]:** | | |
| Number of retirees | 1,929 | 1,772 |
| Number of inactive members | 14 | 11 |
| Number of active members | 1,256 | 1,421 |

[1] Includes only participants potentially eligible for the retiree medical subsidy, currently or in the future. “Number of retirees” as shown in the table above are the actual number of retirees receiving the subsidy.

## 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. |
| **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, based on the applicable single equivalent discount rate. 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 Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan. |

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: GASB 74 and 75 Information

## Exhibit 1 – Net OPEB Liability

**Components of the Net OPEB Liability at December 31, 2023, were as follows**

| | |
|---|---|
| Total OPEB liability | $8,992,151 |
| Plan fiduciary net position | 0 |
| Net OPEB liability | 8,992,151 |
| Plan fiduciary net position as a percentage of the total OPEB liability | 0.00% |

**Actuarial assumptions:** The total OPEB liability was determined by an actuarial valuation as of December 31, 2023, using the following actuarial assumptions, applied to all periods included in the measurement:

| Assumption Type | Assumption |
|---|---|
| Wage inflation | 2.50% |
| Investment rate of return | 6.75%, net of investment expense |
| Municipal bond index | 3.26%, based on the Bond Buyer 20-Bond Index of general obligation municipal bonds effective as of the December 31, 2023, measurement date |
| Single equivalent discount rate | 3.26% |
| Election percentage | For current active and inactive vested participants eligible to receive the subsidies, 20% are assumed to receive the pre-Medicare subsidy and 60% are assumed to receive the post-Medicare subsidy. |

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

The actuarial assumptions used in the December 31, 2023, valuation are based on the results of an experience study for the period January 1, 2017, through December 31, 2021.

**Discount rate:** Since there are no assets dedicated to the OPEB plan, the discount rate used to measure the total OPEB liability was 3.26% based on the municipal bond index.

**Sensitivity of the net OPEB liability to changes in the discount rate.** The following presents the net OPEB liability as of December 31, 2023, calculated using the discount rate of 3.26%, as well as what the net OPEB liability would be if it were calculated using a discount rate that is
1-percentage-point lower (2.26%) or 1-percentage-point higher (4.26%) than the current rate:

| | 1% Decrease (2.26%) | Current Discount Rate (3.26%) | 1% Increase (4.26%) |
|---|---|---|---|
| Net OPEB Liability as of December 31, 2023 | $9,890,692 | $8,992,151 | $8,228,834 |

# Exhibit 2 – Schedules of Changes in Net OPEB Liability

| Components of the Net OPEB Liability | 2023 | 2022 |
|---|---|---|
| **Total OPEB liability** | | |
| Service cost | $104,639 | $168,461 |
| Interest | 300,579 | 185,376 |
| Change of benefit terms | 0 | 0 |
| Differences between expected and actual experience | 606,790 | 761,207 |
| Changes of assumptions | 366,244 | (1,283,254) |
| Benefit payments, including refunds of employee contributions | (723,080) | (650,401) |
| **Net change in total OPEB liability** | $655,172 | ($818,611) |
| Total OPEB liability – beginning | $8,336,979 | $9,155,590 |
| Total OPEB liability – ending (a) | $8,992,151 | $8,336,979 |
| **Plan fiduciary net position** | | |
| Contributions – employer | 723,080 | 650,401 |
| Contributions – employee | 0 | 0 |
| Net investment income | 0 | 0 |
| Benefit payments | (723,080) | (650,401) |
| Administrative expense | 0 | 0 |
| Other | 0 | 0 |
| Net change in plan fiduciary net position | $0 | $0 |
| Plan fiduciary net position – beginning | 0 | 0 |
| Plan fiduciary net position – ending (b) | 0 | 0 |
| Fund’s net OPEB liability – ending (a) – (b) | $8,992,151 | $8,336,979 |
| Plan fiduciary net position as a percentage of the total OPEB liability | 0.00% | 0.00% |
| Covered-employee payroll | $172,561,410 | $192,319,657 |
| Fund’s net OPEB liability as percentage of covered-employee payroll | 5.21% | 4.33% |

Changes in the net OPEB liability from the beginning of the year to the end of the year arise from the net difference between changes in the total OPEB liability and plan fiduciary net position that occurred during the year. Changes in net OPEB liability will be recognized immediately as OPEB expense or reported as deferred outflows of resources related to OPEB or deferred inflows of resources related to OPEB, 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 OPEB through the OPEB plan (active employees and inactive members, including retirees). The amounts below that are not included in OPEB expense for the current year are included in deferred outflows of resources or deferred inflows of resources related to OPEB.

# Exhibit 3 – Reconciliation of Net OPEB Liability

| | Increase/(Decrease) For Fiscal Year Ending December 31, 2023 | | |
|---|---|---|---|
| | **Total OPEB Liability (a)** | **Plan Fiduciary Net Position (b)** | **Net OPEB Liability (a) – (b)** |
| **Balances at beginning of year** | $8,336,979 | $0 | $8,336,979 |
| **Changes for the year** | | | |
| Service cost | 104,639 | 0 | 104,639 |
| Interest | 300,579 | 0 | 300,579 |
| Differences between expected and actual experience | 606,790 | 0 | 606,790 |
| Contributions – employer | 0 | 723,080 | (723,080) |
| Contributions – member | 0 | 0 | 0 |
| Other income | 0 | 0 | 0 |
| Net investment income | 0 | 0 | 0 |
| Benefit payments, including refunds of employee contributions | (723,080) | (723,080) | 0 |
| Administrative expense | 0 | 0 | 0 |
| Change of assumptions | 366,244 | 0 | 366,244 |
| Changes of benefit terms | 0 | 0 | 0 |
| **Net changes** | 655,172 | 0 | 655,172 |
| | | | |
| **Balances at end of year** | $8,992,151 | $0 | $8,992,151 |

# Exhibit 4 – Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB

| | Year Established | Original Balance | Original Amortization Period | Amortization Amount | Outstanding Balance at December 31, 2023 |
|---|---|---|---|---|---|
| **Outflows** | | | | | |
| Demographic | 2021 | $909,364 | 2.6448 | $221,702 | $0 |
| Demographic | 2022 | 761,207 | 3.2016 | 237,758 | 285,691 |
| Demographic | 2023 | 606,790 | 2.7241 | 222,749 | 384,041 |
| Assumption | 2023 | 366,244 | 2.7241 | 134,446 | 231,798 |
| **Total outflows** | | | | **$816,655** | **$901,530** |
| **Inflows** | | | | | |
| Assumption | 2021 | $233,476 | 2.6448 | $56,922 | $0 |
| Assumption | 2022 | 1,283,254 | 3.2016 | 400,816 | 481,622 |
| **Total inflows** | | | | **$457,738** | **$481,622** |

The average expected remaining service lives of all members is 2.7241 years, determined as of January 1, 2023. This amount is equal to the total expected remaining service of 8,728 years, divided by total employees that are provided with OPEB benefits through the plan of 3,204 (as shown in the table below).

| | Expected Remaining Service | Counts | Average of the Expected Remaining Service |
|---|---|---|---|
| Actives Members | 8,728 | 1,421 | 6.1422 |
| Inactive Members | | 11 | - |
| Retirees | | 1,772 | - |
| Total Members | 8,728 | 3,204 | 2.7241 |

# Exhibit 4 – Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB (continued)

At December 31, 2023, deferred outflows of resources and deferred inflows of resources related to OPEB are:

| | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|---|---|
| Difference between expected and actual experience | $669,732 | $0 |
| Changes of assumptions | 0 | 249,824 |
| Net differences between projected and actual earnings on OPEB plan investments | 0 | 0 |
| **Total** | $669,732 | $249,824 |

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

| Year ended December 31: | |
|---|---|
| 2024 | $194,137 |
| 2025 | 225,771 |
| 2026 | - |
| 2027 | - |
| 2028 | - |
| Thereafter | - |

## Exhibit 5 – OPEB Expense

| | Fiscal Year Ending December 31, 2023 | Fiscal Year Ending December 31, 2022 |
|---|---|---|
| **Components of OPEB expense** | | |
| Service cost | $104,639 | $168,461 |
| Interest on the total OPEB liability | 300,579 | 185,376 |
| Projected earnings on plan investments | 0 | 0 |
| Contributions – member | 0 | 0 |
| Other income | 0 | 0 |
| Administrative expense | 0 | 0 |
| Current year recognition of: | | |
| Changes of assumptions | (323,292) | (190,653) |
| Difference between expected and actual experience | 682,209 | 119,435 |
| Difference between projected and actual earnings on OPEB plan investments | 0 | 0 |
| Change of benefit terms | 0 | 0 |
| **Total OPEB expense** | $764,135 | $282,619 |

# Section 3: Assumptions & Plan Provisions

## Exhibit A – Definition of OPEB 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:<br>a. Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)<br>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<br>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 OPEB Liability (NOL). |
| **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 OPEB 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:<br>a. Investment return - the rate of investment yield that the Fund will earn over the long-term future;<br>b. Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates;<br>c. Retirement rates - the rate or probability of retirement at a given age;<br>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 market funded ratio, using the market value of assets (MVA), rather than the AVA, as another measure of the Plan's health. |
| **GASB:** | Governmental Accounting Standards Board |
| **GASB 74 and GASB 75:** | The Governmental Accounting Standards Board (GASB) issued Statement Number 74 Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans, and Statement Number 75 – Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions. Under these statements, all state and local government entities that provide other post-employment benefits are required to report the cost of these benefits on their financial statements. The accounting standards supplement cash accounting, under which the expense for postemployment benefits is equal to benefit and administrative costs paid on behalf of retirees and their dependents (i.e., a pay-as-you-go basis). |
| **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 OPEB Liability (NOL):** | The Net OPEB Liability is equal to the Total OPEB Liability minus the Plan Fiduciary Net Position |
| **Normal Cost:** | That portion of the Actuarial Present Value of OPEB 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 OPEB 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:** | Market value of assets. |
| **Total OPEB Liability (TOL):** | The actuarial accrued liability under the entry age normal cost method and based on the municipal bond index rate as described in GASB 74 and 75. |
| **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. |

# Exhibit B – 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, and was first effective as of December 31, 2022.

## 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 before retirement

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

Retirement 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% |

## Election Rates

For current active and inactive vested members eligible to receive the subsidies, 20% are assumed to receive the pre-Medicare subsidy and 60% are assumed to receive the post-Medicare subsidy. The information and analysis used in supporting the election percentage was performed as a part of, and first effective for, the December 31, 2021, valuation. Current data is reviewed in conjunction with each annual valuation.

## 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 C – 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.

## OPEB Benefit

- Benefit
  - $55 per month if the annuitant is not qualified to receive Medicare benefits
  - $21 per month if the annuitant is qualified to receive Medicare benefits
- Eligibility
  - Annuitant retired on or after August 23, 1989;
  - Annuitant was hired prior to July 1, 2003; and,
  - Annuitant must have either:

    a. participated in a group healthcare plan for which the Fund offers to deduct health insurance premiums from monthly annuities in accordance with the 1983 and1985 amendments to the Illinois Pension Code Statutes (currently either the BlueCross/Blue Shield plans sponsored by the City of Chicago or the Aetna plans sponsored by the Local 2);

    OR

    b. for the period between January 1, 2017, and December 31, 2019, participated in any health insurance plan and paid their healthcare insurance coverage themselves, either through an account on which the annuitant is named or an account established for the benefit of the annuitant.

## 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.

## Plan Year

January 1 through December 31

6427821v5/16075.002