

Dallas Police and Fire Pension System

**Actuarial Valuation and Review as of January 1, 2025 –
REVISED**



This valuation report should only be copied, reproduced, or shared with other parties in its entirety as necessary for the proper administration of the Plan.

© 2026 by The Segal Group, Inc.

Segal



2727 Paces Ferry Road SE, Building
One Suite 1400
Atlanta, GA 30339-4053
segalco.com
T 678.306.3100

February 6, 2026

Board of Trustees
Dallas Police and Fire Pension System
4100 Harry Hines Blvd., Suite 100
Dallas, TX 75219-3207

Dear Board of Trustees Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2025. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for the City's fiscal 2027.

This report has been revised from the version issued on September 26, 2025. In addition, the January 1, 2024 results have been restated to reflect the Funding Agreement with the City of Dallas adopted by the Board of Trustees on December 11, 2025.

This report has been prepared in accordance with generally accepted actuarial principles and practices for the exclusive use and benefit of the Board of Trustees, based upon information provided by the staff of the Dallas Police and Fire Pension System.

Segal does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results.

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

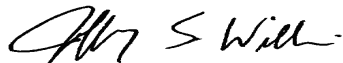
The actuarial calculations were directed under the supervision of Jeffrey S. Williams. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate. The assumptions used in this actuarial valuation were selected by the Board based upon my analysis and recommendations. In my opinion, the assumptions are reasonable and take into account the experience of the Plan and reasonable expectations. In addition, in my opinion, the combined effect of these assumptions is expected to have no significant bias.

Segal makes no representation or warranty as to the future status of the Plan and does not guarantee any particular result. This document does not constitute legal, tax, accounting or investment advice or create or imply a fiduciary relationship. The Board is encouraged to discuss any issues raised in this report with the Plan's legal, tax and other advisors before taking, or refraining from taking, any action.

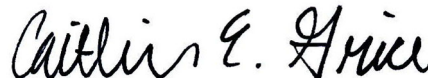
We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal



Jeffrey S. Williams, FCA, ASA, MAAA, EA
Vice President and Consulting Actuary



Caitlin E. Grice, FCA, ASA, MAAA, EA
Vice President and Consulting Actuary

Table of Contents

Section 1: Actuarial Valuation Summary.....	6
Purpose and basis.....	6
Valuation highlights	7
Summary of key valuation results.....	12
Important information about actuarial valuations.....	14
 Section 2: Actuarial Valuation Results	16
Member information.....	16
Actuarial experience	22
January 1, 2024	25
January 1, 2025.....	25
Actuarially determined contribution	28
Funding agreement contribution.....	29
Schedule of funding progress through December 31, 2024	31
Low-Default-Risk Obligation Measure (LDROM).....	33
Risk.....	34
GFOA funded liability by type	37
Volatility ratios	39
 Section 3: Supplemental Information	41
Exhibit A: Table of plan demographics	41
Exhibit B: Members in active service.....	43
Police members in active service and average pay as of December 31, 2024 by age and years of service	44
Fire members in active service and average pay as of December 31, 2024 by age and years of service.....	45

Table of Contents

Exhibit C: Reconciliation of member data.....	46
Exhibit D: Summary of income and expenses on a market value basis	47
Exhibit E: Determination of Actuarial Value of Assets	48
Exhibit F: Summary statement of plan assets	49
Exhibit G: History of financial information	50
Exhibit H: Table of amortization bases	51
 Section 4: Actuarial Valuation Basis	 52
Exhibit I: Actuarial assumptions, methods and models	52
Exhibit J: Summary of plan provisions.....	61
Members whose participation began before March 1, 2011	61
Members whose participation began on or after March 1, 2011.....	64
All members.....	65
 Section 5: GASB Information	 69
Exhibit K: Net Pension Liability.....	69
Exhibit L: Determination of discount rate and investment rates of return	70
Exhibit M: Discount rate sensitivity	71
Exhibit N: Schedule of changes in Net Pension Liability	72
Exhibit O: Schedule of employer contributions.....	74
 Appendix A: Definition of Pension Terms	 76

Section 1: Actuarial Valuation Summary

Purpose and basis

This report has been prepared by Segal to present a valuation of the Dallas Police and Fire Pension System as of January 1, 2025. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to provide information for required disclosures under Governmental Accounting Standards Board (GASB) Statement No. 67.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension System, as administered by the Board;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of December 31, 2024, provided by the System's IT Department;
- The assets of the Plan as of December 31, 2024, provided by the System's Finance Department;
- Economic assumptions regarding future salary increases and investment earnings;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.;
- Article 6243a-1, as amended by House Bill 3158 (HB 3158) signed into law by the Governor of Texas on May 31, 2017; and
- The Funding Agreement with the City of Dallas adopted by the Board of Trustees of the Pension System on December 11, 2025.

The majority of assumptions and methods used to value the Plan were set by the Board based on recommendations made by Segal following a five-year experience study for the period ended December 31, 2024.

Certain disclosure information required by the GASB Statement No. 68 as of September 30, 2025 for the City is provided in a separate report.

Section 1: Actuarial Valuation Summary

Valuation highlights

- The January 1, 2024 valuation results have been restated to reflect the Funding Agreement with the City of Dallas adopted by the Board of Trustees on December 11, 2025. Changes include removing the immediate partial cost of living adjustments (COLA), updating the ad hoc COLA start year from 2073 to 2046, when the System is projected to be 70% funded, and recalculating the actuarial determined contribution (ADC).
- Beginning in this restated January 1, 2025 actuarial valuation, results will include both an Actuarial Determined Contribution and a contribution amount as determined by the Funding Agreement.

Developments since last valuation

- **Asset returns:** The rate of return on the market value of assets was 9.25% for the year ending December 31, 2024. Note that this value may differ slightly from the value calculated by the investment consultant due to differences in methodology. The effective return on the actuarial value of assets, a notional value which smooths investment gains and losses over 5 years and is used to determine the ADC, was 8.91% for the same period due to the recognition of a portion of this year's investment gains and losses and a portion of prior years' investment gains and losses. This resulted in an actuarial gain when measured against the assumed rate of return of 6.50%. This actuarial investment gain decreased the ADC by \$2.7 million. We advise the Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments of 6.50%.
- **Contributions:** Actual City contributions made during the City's fiscal year ending September 30, 2025 of \$204.9 million were 94.2% of the actuarially determined contribution.
- **Experience:** The actuarial loss of \$70.6 million, or 1.25% of actuarial accrued liability, is due to an investment gain of \$43.0 million, or 0.76% of actuarial accrued liability, and a loss from sources other than investments of \$113.5 million, or 2.02% of the actuarial accrued liability prior to reflection of assumption changes. This loss was primarily due to salary increases greater than expected, partially offset by retirement and turnover experience.
- **Assumption changes:** The following actuarial assumptions were approved by the Board and changed with this valuation, following the completion of an experience study for the period January 1, 2020 through December 31, 2024:
 - All mortality tables updated to Pub-2016 and projected generationally using Scale MP-2021:
 - Healthy annuitant mortality table, multiplied times 1.25 for males and multiplied by 0.8 for females
 - Contingent beneficiary mortality table, multiplied times 1.1 for males and multiplied by 1.25 for females
 - Disabled annuitant mortality table, set forward five years for males
 - Pre-retirement mortality, set forward five years for males and set back two years for females

Section 1: Actuarial Valuation Summary

- Retirement rates for all participant groups:
 - DROP actives: Lowered age-based rates covering the same age ranges for Fire and Police
 - Non-DROP actives: Updated age-based rates covering the same age ranges for Fire and Police
 - Inactive vested members: 25% of those who terminate will take a cash out within the first two years following termination; afterwards, 100% retirement at Normal Retirement Age
- Age-based disability rates lowered
- Service-based turnover rates updated
- Spousal age difference updated from females three years younger than males to two years younger
- Payroll growth increased from 2.50% to 3.50%
- Salary scales based on service, with 10-14% increase based on rank in first year, based on 2025 pay scales.

As a result of these assumption changes, the employer normal cost increased by \$15.5 million and the actuarial accrued liability decreased by \$68.6 million. The total impact was an increase in the ADC of \$10.8 million, or 2.25% of projected pay.

- **Plan provisions:** The following plan changes based on Article 6243a-1, as amended by House Bill 4034 (HB 4034) and effective September 1, 2023 are included for the first time in this valuation:
 - For active members who pass away while in the line of duty, the surviving spouse benefit was increased to 100% of the member's accrued benefit. Further for Group B members who began active service before March 1, 2011, the benefit multiplier was increased for service earned on and after September 1, 2017 from the 20 & Out Table 2 to 2.5% at all ages. As a part of this plan change, an assumption was added that 30% of pre-retirement active deaths are in the line of duty.
 - For Group B members who began active service before March 1, 2011, the disability benefit multiplier was increased for service earned on and after September 1, 2017 from the 20 & Out Table 2 to 2.5% at all ages.

As a result of these plan changes, the employer normal cost increased by \$0.4 million and the actuarial accrued liability increased by \$2.7 million. The total impact was an increase in the ADC of \$0.6 million, or 0.13% of projected pay.

Section 1: Actuarial Valuation Summary

Actuarial valuation results

- **Funded ratio:** The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 34.05%, compared to the prior year funded ratio of 33.79%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio is 36.19%, compared to 35.70% as of the prior valuation date. These measurements are not necessarily appropriate for assessing the sufficiency of the plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.
- **Actuarially determined contribution (ADC):** The ADC for the fiscal year beginning October 1, 2025 is \$257.2 million, an increase of \$39.6 million from the prior fiscal year. The contribution as a percentage of projected pay increased from 45.52% of projected pay to 46.07% of projected pay.
- **Unfunded actuarial accrued liability (UAAL):** The UAAL (the excess of the actuarial accrued liability over the actuarial value of assets) is \$3.7 billion, which is an increase of \$77.2 million since the prior valuation.
- **Asset smoothing:** The total net investment gain not yet recognized is \$119.1 million, representing 5.9% of the market value of assets. The deferred gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next five years, to the extent it is not offset by recognition of investment losses derived from future experience. This implies that earning the assumed rate of investment return of 6.50% per year (net of investment expenses) on a fair value basis will result in investment gains on the actuarial value of assets in the next several years. If the net deferred gain was recognized immediately in the actuarial value of assets, the ADC would decrease from 46.07% of projected pay to 44.89% of projected pay.
- **GASB Accounting:** The information contained in Section 5 provides the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67, for inclusion in the Plan's and employer's financial statements as of December 31, 2024. The Net Pension Liability (NPL) and Pension Expense under GASB statement No. 68 for the inclusion in the plan and employer's financial statement as of September 30, 2025 will be provided separately. The accounting information utilizes different methodologies from those employed in the funding valuation, as required by GASB. The NPL is equal to the difference between the Total Pension Liability (TPL) and the Plan's fiduciary net position (equal to the market value of assets). The NPL as of December 31, 2024 is \$3.6 billion.

Section 1: Actuarial Valuation Summary

Funding considerations

- **Funding method:** Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the UAAL and the principal balance.
 - The Funding Agreement with the City of Dallas adopted by the Board of Trustees of the Pension System on December 11, 2025, pursuant to the requirements of Section 2.025 of Article 6243a-1 of Vernon's Revised Civil Statutes, calculates the ADC based on a closed amortization period of 30 years, established as of January 1, 2023. The Funding Agreement utilizes two amortization bases of specified amounts as of January 1, 2023. The first amortization base was in the amount of \$2,290,000,000 and is to be amortized over 30 years on a level percent of pay basis. The second amortization base was in the amount of \$988,028,785, with a five-year step up of the amortization payment, with the outstanding balance after five years to be amortized over a 25-year period on a level percent of pay basis. Beginning on January 1, 2024, each year's experience due to actuarial gains and losses or plan, assumption, or method changes are amortized over the amortization period remaining on the initial 2023 bases. Beginning in 2033, newly established bases will be amortized over a period of 20 years.
 - The Funding Agreement includes maximum contributions through the Fiscal Year ending September 30, 2054, based on a deterministic projection calculated by a third party as of January 1, 2023. There is some allowance in the Agreement for future increases in the UAL that may result due to experience losses, assumption changes, method changes or benefit changes. However, there is risk associated with this methodology.
 - The current Funding Agreement contribution is less than the ADC and, as a result, is not sufficient under current conditions to amortize the UAAL as of January 1, 2025 and achieve full funding by the projected year of 2053. This reflects the five-year step-up in amortization payments, the initial UAAL being based on an analysis other than the actuarial valuation, and net actuarial losses, including assumption and plan changes, since January 1, 2023 that are not fully reflected in the Funding Agreement UAAL payments. Further, the Normal Cost component of the Funding Agreement contribution is less than the current employer Normal Cost determined in this valuation and therefore does not fully cover the ongoing cost of benefits being accrued, increasing reliance on future contribution increases or favorable experience to prevent further growth in the UAAL.
 - The Funding Agreement includes a mechanism to add accumulated net losses through September 30, 2029 to the Funding Agreement contribution. However, this mechanism does not fully or immediately align contributions with the ADC, resulting in continued funding risk if losses persist.
 - If all actuarial assumptions are met and the City contributes in accordance with the Funding Agreement, the System is projected to achieve full funding by 2053.
- **Amortization of UAAL:** The total contributions made during the year ending December 31, 2024 were insufficient to reduce the UAAL. The UAAL will continue to grow unless contributions are increased, plan provisions are changed, or there are significant gains from investments and other sources.

Section 1: Actuarial Valuation Summary

Risk

- **Snapshot date:** It is important to note that this actuarial valuation is based on plan assets as of December 31, 2024. The Plan's funded status does not reflect short-term economic fluctuations but rather is based on the market values on the last day of the plan year. Segal is available to prepare projections of potential outcomes of market conditions and other demographic experience upon request.
- **Understanding risk:** Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. A more detailed assessment of the risks would provide the Board with a better understanding of the inherent risks in the Plan. This assessment may include scenario testing, sensitivity testing, stress testing and stochastic modeling.
 - We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition but have included a brief discussion of some risks that may affect the Plan in Section 2.
- **Contribution risk:** The Funding Agreement with the City set maximum contribution amounts, which may be less than the actuarially determined contributions, through the Fiscal Year ending September 30, 2054, based on a 30-year deterministic projection that assumes no future gains or losses. This includes a maximum payment on an unfunded actuarially accrued liability as of January 1, 2023 as calculated by an independent actuary. This methodology contains minimal allowance for future adverse experience through September 30, 2029. If future experience does not match the assumptions used to set the contributions, the unfunded actuarial accrued liability may not be paid off within 30 years. Deterministic projections that assume no future gains or losses, or assumption, method, or plan changes, can be useful for high-level planning, but should not be the basis for actual contribution policy, as gains and losses each year are unavoidable.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

Valuation Result	Current	Prior
Contributions for City's fiscal year beginning:	October 1, 2025	October 1, 2024
• City's Actuarially determined contribution	\$257,221,807	\$217,612,884
• City's ADC as a percent of projected pay	46.07%	45.52%
• Expected City contributions based on Funding Agreement	\$223,665,851	\$201,067,608
• Actual City contributions	—	204,888,932
Actuarial accrued liability for plan year beginning:	January 1, 2025	January 1, 2024
• Retired members and beneficiaries	\$3,520,994,086	\$3,606,964,608
• Inactive vested members	35,874,365	31,190,865
• Inactive members due a refund of employee contributions	1,108,763	1,891,621
• Active members	1,999,280,067	1,778,968,670
• Total actuarial accrued liability	\$5,557,257,281	\$5,419,015,764
• Normal cost including administrative expenses for plan year beginning January 1	128,029,735	97,794,349
Assets for plan year beginning January 1:		
• Market value of assets (MVA)	\$2,011,422,373	\$1,934,816,560
• Actuarial value of assets (AVA)	1,892,332,008	1,831,293,364
• Actuarial value of assets as a percentage of market value of assets	94.08%	94.65%
Funded status for plan year beginning January 1:		
• Unfunded actuarial accrued liability on market value of assets	\$3,545,834,908	\$3,484,199,204
• Funded percentage on MVA basis	36.19%	35.70%
• Unfunded actuarial accrued liability on actuarial value of assets	\$3,664,925,273	\$3,587,722,400
• Funded percentage on AVA basis	34.05%	33.79%
• Projected year of full funding	2053	2053
• Period remaining on initial bases	28	29

Section 1: Actuarial Valuation Summary

Valuation Result	Current	Prior
Key assumptions:		
• Net investment return	6.50%	6.50%
• Payroll growth rate	3.50%	2.50%
GASB information:		
• Discount rate	6.50%	6.50%
• Total Pension Liability	\$5,566,762,524	\$5,307,255,422
• Plan Fiduciary Net Position	2,011,422,373	1,934,816,560
• Net Pension Liability	3,555,340,151	3,372,438,862
• Plan Fiduciary Net Position as a percentage of Total Pension Liability	36.13%	36.46%
Demographic data for plan year beginning January 1:		
• Number of retired members and beneficiaries	5,242	5,231
• Number of DROP only beneficiaries	203	141
• Number of inactive vested members	240	254
• Number of inactive members due a refund of employee contributions	234	326
• Number of active members	5,356	5,131
• Total computation pay ¹	\$544,095,176	\$469,275,612
• Average compensation	101,586	91,459

¹ Total computation pay is the active members' actual payroll for the preceding year, increased by the salary scale applicable for each member to account for their anticipated salary increases in the upcoming year.

Section 1: Actuarial Valuation Summary

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:

Input Item	Description
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 System. 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 the System. 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.

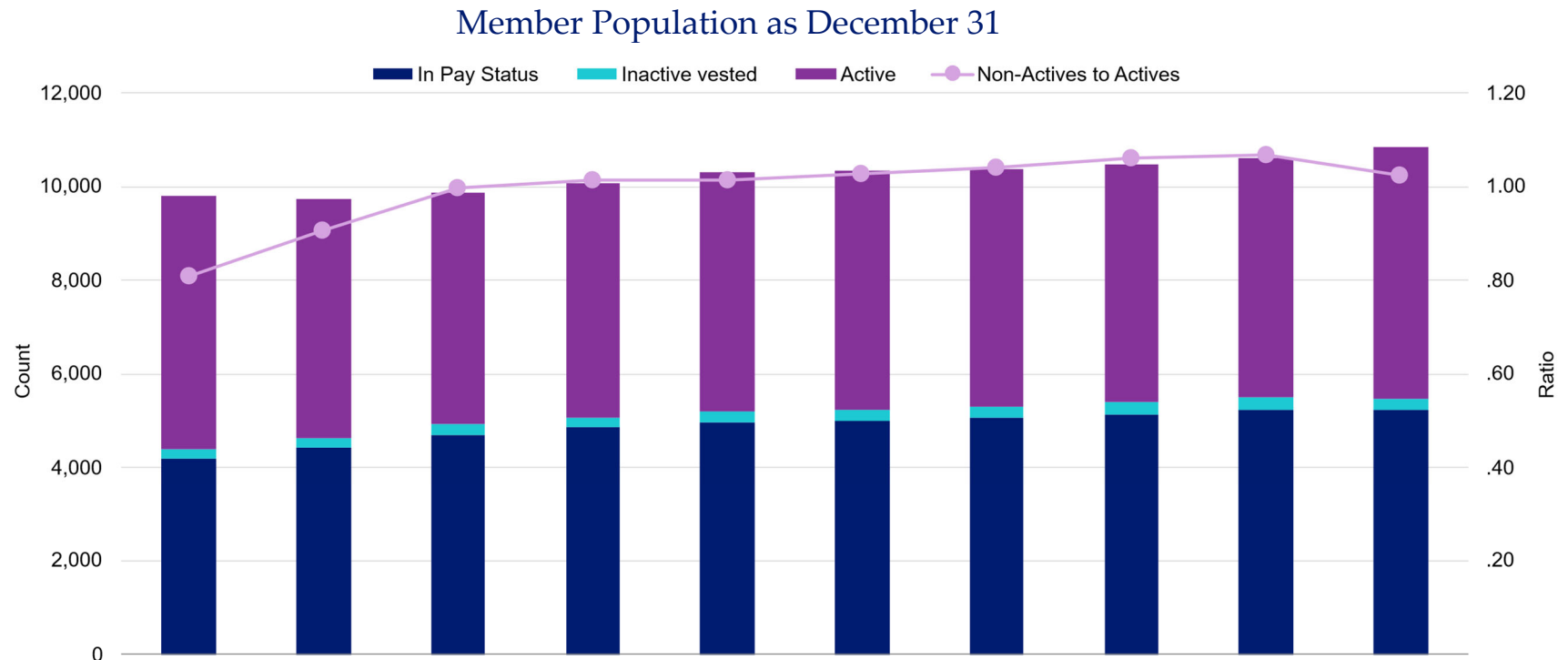
Section 1: Actuarial Valuation Summary

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 System. 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 System 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 and is not acting as a fiduciary to the Pension System. The valuation is based on Segal's understanding of applicable guidance in these areas and of the Pension System's provisions, but they may be subject to alternative interpretations. The System 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 System upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

Section 2: Actuarial Valuation Results

Member information



Legend	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
In Pay Status ¹	4,182	4,414	4,706	4,849	4,956	5,003	5,071	5,142	5,231	5,242
Inactive Vested ²	200	215	226	230	242	241	233	252	254	240
Active	5,415	5,104	4,952	5,012	5,121	5,106	5,088	5,085	5,131	5,356
Ratio	0.81	0.91	1.00	1.01	1.02	1.03	1.04	1.06	1.07	1.02

¹ Excludes beneficiaries who only have a DROP account

² Excluding terminated participants due a refund of employee contributions.

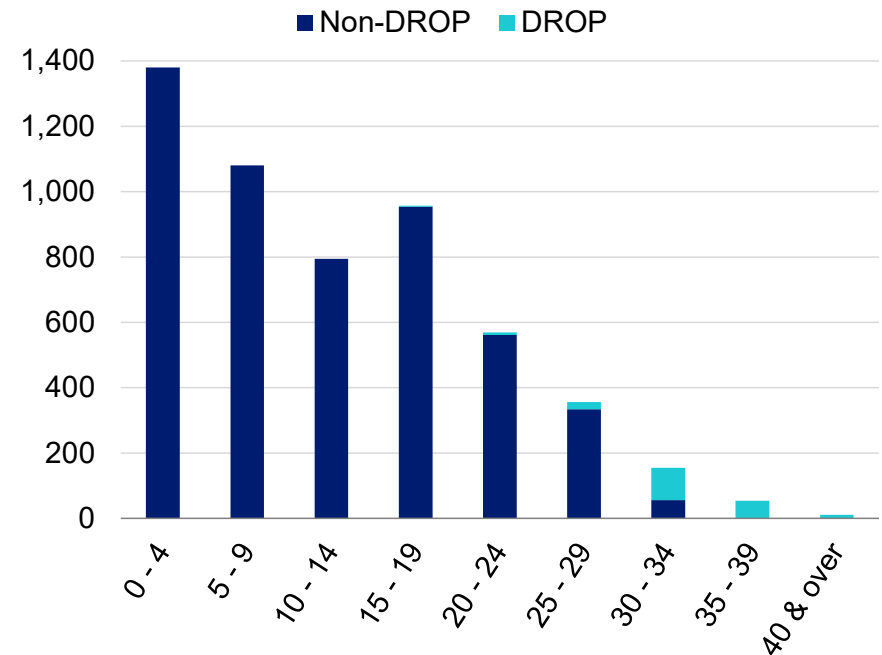
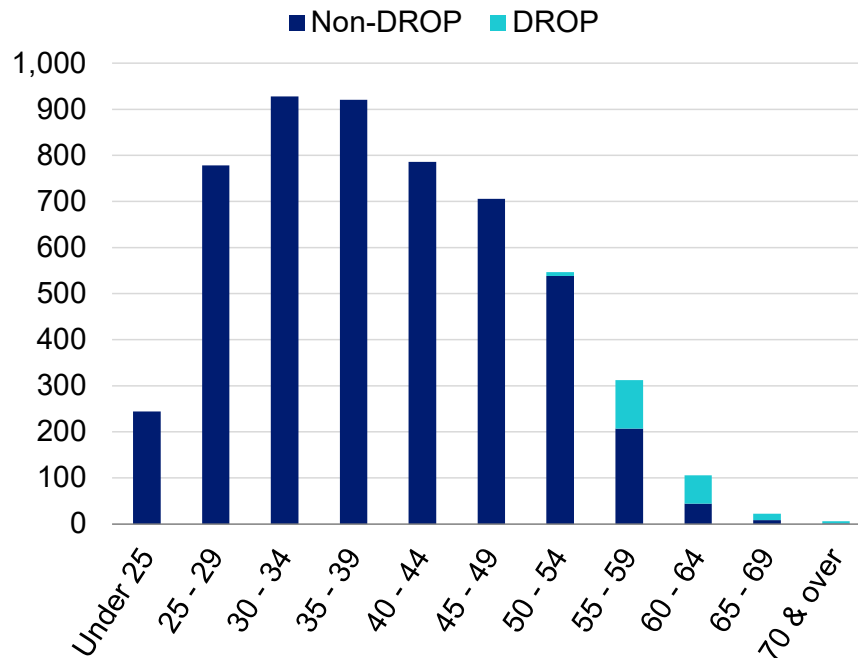
Section 2: Actuarial Valuation Results

Active members

Demographic Data	December 31, 2024	December 31, 2023	Change
Firefighters			
Active participants	2235	2,107	6.1%
Average age	39.6	39.9	-0.3
Average years of service	11.8	12.1	-0.3
Average computation pay	\$101,713	\$91,300	11.4%
Police Officers			
Active participants	3121	3,024	3.2%
Average age	40.1	40.2	-0.1
Average years of service	12.8	13.0	-0.2
Average computation pay	\$101,495	\$91,570	10.8%
Total			
Active participants	5356	5,131	4.4%
Average age	39.9	40.1	-0.2
Average years of service	12.4	12.6	-0.2
Average computation pay	\$101,586	\$91,459	11.1%

Section 2: Actuarial Valuation Results

Distribution of Active Members as of December 31, 2024
Actives by Age Actives by Years of Service



The number of active participants in DROP decreased from 210 at the end of 2023 to 195 at the end of 2024

Inactive members

In this year's valuation, there were 240 inactive members with a vested right to a deferred or immediate vested benefit. In addition, there were 234 inactive members entitled to a return of their employee contributions.

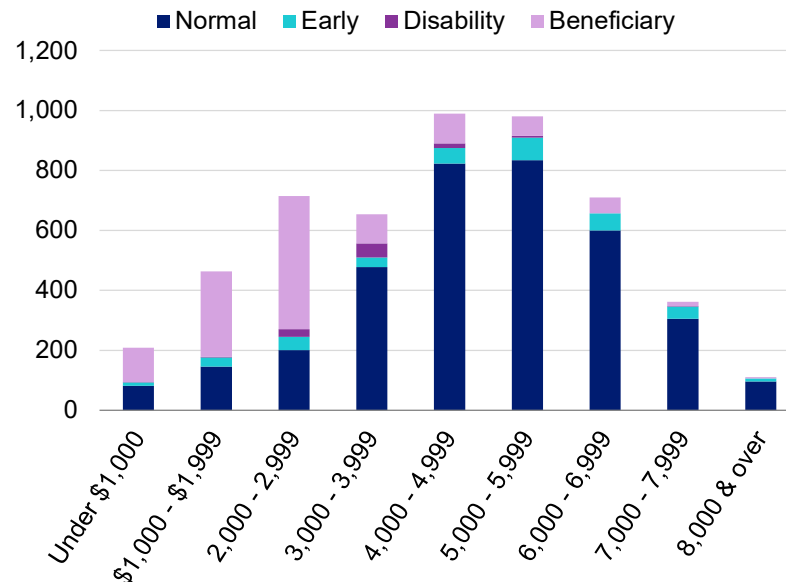
Section 2: Actuarial Valuation Results

Retired members and beneficiaries

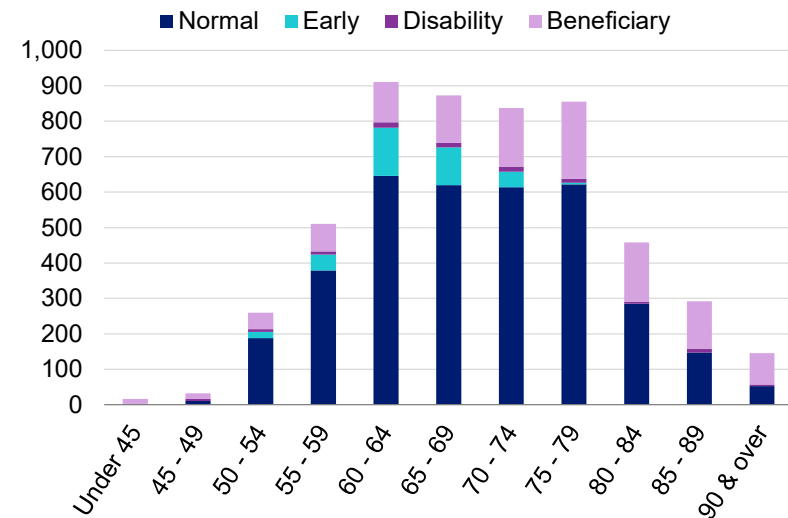
Demographic Data	December 31, 2024	December 31, 2023	Change
Retired participants	4,015	4,015	0.0%
Beneficiaries ¹	1,227	1,216	0.9%
Average age	69.8	69.5	0.3
Average amount	\$4,394	\$4,347	1.1%
Total monthly amount	23,031,899	22,740,890	1.3%

Distribution of Retired Members and Beneficiaries as of December 31, 2024

By Type and Monthly Amount



By Type and Age



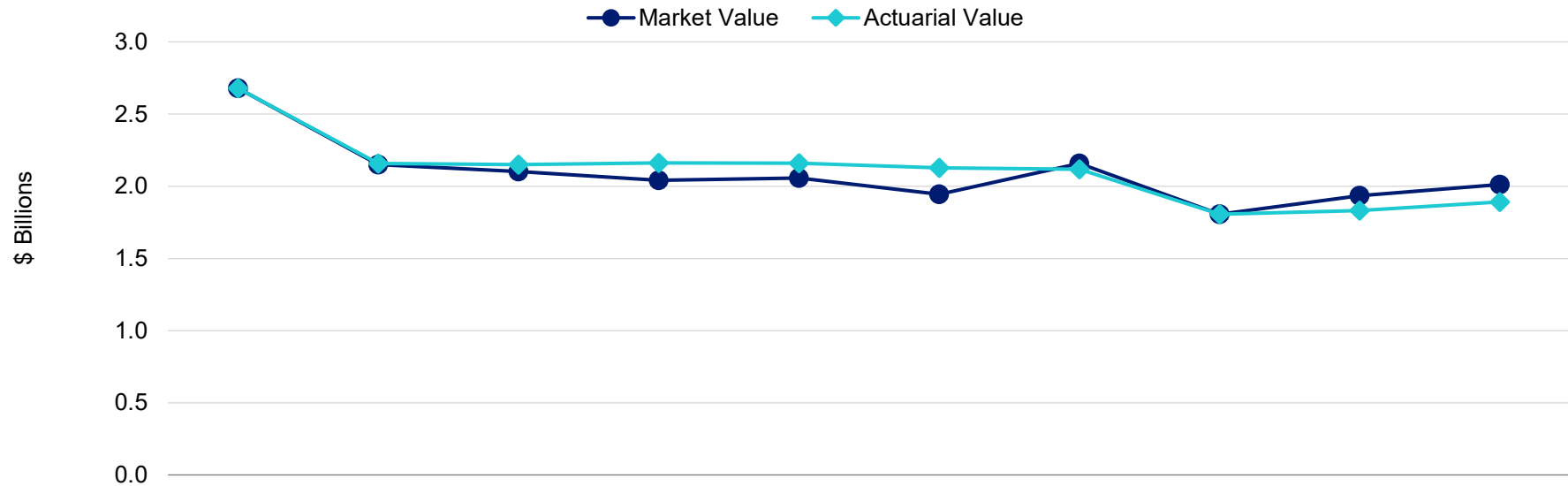
¹ Does not include beneficiaries with annuitized DROP accounts only and no lifetime annuity (203 for 2024 and 141 for 2023).

Section 2: Actuarial Valuation Results

Asset history for years ended December 31

- The decline in assets from 2015 to 2016 reflects the unusually large number of DROP payments made in 2016.
- The actuarial valuation of assets as of December 31, 2022 was reset to the market value of assets.

Market Value of Assets vs Actuarial Value of Assets



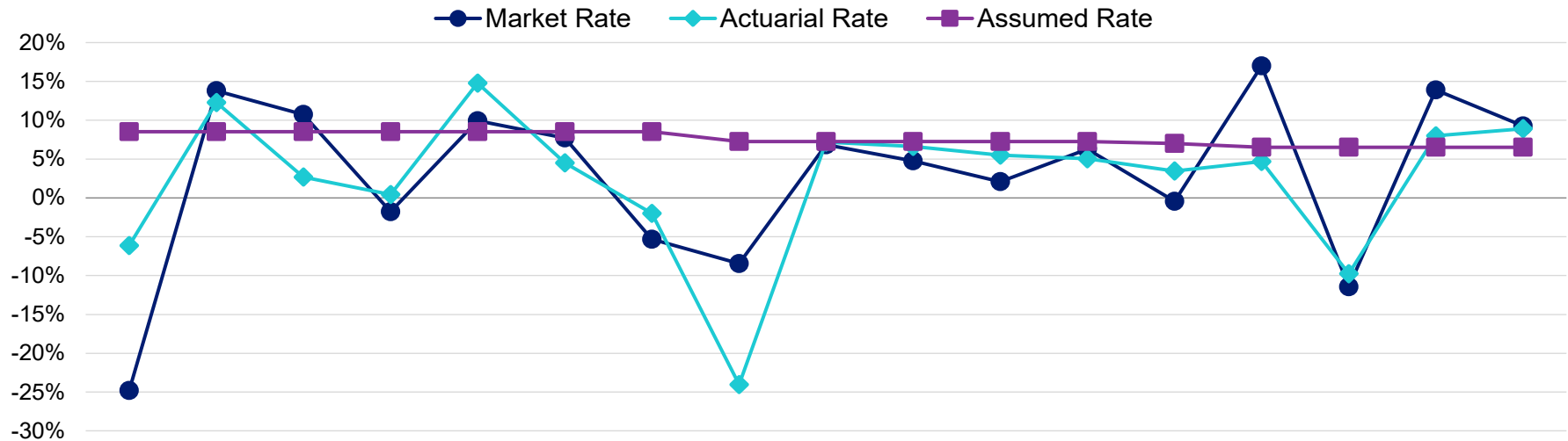
Legend	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
■ Market value ¹	\$2.68	\$2.15	\$2.10	\$2.04	\$2.06	\$1.94	\$2.16	\$1.81	\$1.93	\$2.01
■ Actuarial value ¹	2.68	2.16	2.15	2.16	2.16	2.13	2.12	1.81	1.83	1.89
Ratio	1.00	1.00	1.02	1.06	1.05	1.09	0.98	1.00	0.95	0.94

¹ In \$ billions

Section 2: Actuarial Valuation Results

Historical investment returns

Market and Actuarial Rates of Return versus Assumed Rate for Years Ended December 31



Legend	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Market rate ¹	-24.80%	13.78%	10.72%	-1.78%	9.92%	7.70%	-5.35%	-8.47%	6.82%	4.74%	2.09%	6.25%	-0.45%	16.99%	-11.46%	13.90%	9.25%
Actuarial rate ²	-6.14%	12.29%	2.69%	0.43%	14.79%	4.52%	-1.98%	-24.03%	7.16%	6.63%	5.48%	5.05%	3.46%	4.68%	-9.75%	7.98%	8.91%
Assumed rate	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	7.25%	7.25%	7.25%	7.25%	7.25%	7.00%	6.50%	6.50%	6.50%	6.50%

Average Rates of Return	Market Value	Actuarial Value
Most recent five-year average return:	5.07%	0.21%
Most recent ten-year average return:	3.12%	-3.90%
Most recent 15-year average return:	3.48%	-0.44%
17-year average return:	1.83%	0.01%

¹ Returns for 2014 and 2015 include significant write-downs in the System's assets

² Includes a change in asset method for plan years 2012, 2015 and 2023

Section 2: Actuarial Valuation Results

Actuarial experience

Assumptions should consider experience and should be based on reasonable expectations for the future.

Each year actual experience is compared to that projected by the assumptions. Differences are reflected in the actuarial valuation.

Assumptions are not changed if experience is believed to be a short-term development that will not continue over the long term. On the other hand, if experience is expected to continue, assumptions are changed.

Actuarial Experience for Year Ended December 31, 2024

Source	Amount
1. Net gain/(loss) from investments ¹	\$42,971,798
2. Gain/(loss) from administrative expenses	-421,974
3. Net gain/(loss) from other experience	-113,114,142
4. Net experience gain/(loss): 1 + 2 + 3 +4	-\$70,564,318

¹ Details on next page

Section 2: Actuarial Valuation Results

Investment experience

Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.

The assumed long-term rate of return of 6.50% considers past experience, the asset allocation policy of the Board and future expectations.

Investment Experience for Year Ended December 31

Item	2024 Market Value	2024 Actuarial Value
1. Net investment income	\$174,394,891	\$158,827,722
2. Average value of assets	1,885,922,021	1,782,398,825
3. Rate of return: 1 ÷ 2	9.25%	8.91%
4. Assumed rate of return	6.50%	6.50%
5. Expected investment income: 2 x 4	\$122,584,931	\$115,855,924
6. Net investment gain/(loss): 1 – 5	\$51,809,960	\$42,971,798

Section 2: Actuarial Valuation Results

Non-investment experience

Administrative expenses

Administrative expenses for the year ended December 31, 2024 totaled \$7,408,894, as compared to the assumption of 7,000,000. This resulted in an experience loss of \$421,974 for the year, including an adjustment for interest.

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:

- Mortality experience (more or fewer than expected deaths)
- The extent of turnover among members
- Retirement experience (earlier or later than projected)
- The number of disability retirements (more or fewer than projected)
- Salary increases (greater or smaller than projected)

The net loss from this other experience for the year ended December 31, 2024 amounted to \$113,114,142, which is 2.01% of the actuarial accrued liability.

Section 2: Actuarial Valuation Results

Actuarial assumptions

January 1, 2024

As part of the Funding Agreement adopted by the Board on December 11, 2025, the following assumption change was effective January 1, 2024:

- The ad hoc COLA start year was moved from 2073 to 2046, based on when the System is assumed to be 70% funded.

This change increased the total normal cost by 8.26%, increased the actuarial accrued liability by 2.20%, increased the Actuarially Determined Contribution by 7.07%, and decreased the funded percentage by 0.75% in the restated January 1, 2024 actuarial valuation results

January 1, 2025

Following an Experience Study for the period January 1, 2020 through December 31, 2024, the Trustees adopted the following assumption changes effective January 1, 2025:

- All mortality tables updated to Pub-2016 and projected generationally using Scale MP-2021:
 - Healthy annuitant mortality table, multiplied times 1.25 for males and multiplied by 0.8 for females
 - Contingent beneficiary mortality table, multiplied times 1.1 for males and multiplied by 1.25 for females
 - Disabled annuitant mortality table, set forward five years for males
 - Pre-retirement mortality, set forward five years for males and set back two years for females
- Retirement rates for the following participant groups:
 - DROP actives: Lowered age-based rates covering the same age ranges for Fire and Police
 - Non-DROP actives: Updated age-based rates covering the same age ranges for Fire and Police
 - Inactive vested members: 25% of those who terminate will take a cash out within the first two years after termination. Afterwards, 100% retirement at normal retirement age
- Age-based disability rates lowered
- Service-based turnover rates updated
- Spousal age difference updated from females three years younger than males to two years younger
- Payroll growth increased from 2.50% to 3.50%

Section 2: Actuarial Valuation Results

- Salary scales based on service, with 10-14% increase based on rank in first year, based on 2025 pay scales.

These changes increased the total normal cost by 16.27%, decreased the actuarial accrued liability by 1.22%, increased the Actuarially Determined Contribution by 4.38%, and increased the funded percentage by 0.42%.

Plan provisions

The following plan changes based on Article 6243a-1, as amended by House Bill 4034 (HB 4034) and effective September 1, 2023, are included for the first time in this valuation:

- For active members who pass away while in the line of duty, the surviving spouse benefit was increased to 100% of the member's accrued benefit. Further for Group B members who began active service before March 1, 2011, the benefit multiplier was increased for service earned on and after September 1, 2017 from the 20 & Out Table 2 to 2.5% at all ages. As a part of this plan change, an assumption was added that 30% of pre-retirement active deaths are in the line of duty.
- For Group B members who began active service before March 1, 2011, the disability benefit multiplier was increased for service earned on and after September 1, 2017 from the 20 & Out Table 2 to 2.5% at all ages.

These changes increased the total normal cost by 0.37%, increased the actuarial accrued liability by 0.05%, increased the Actuarially Determined Contribution by 0.24%, and decreased the funded percentage by 0.02%.

Section 2: Actuarial Valuation Results

Unfunded actuarial accrued liability

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2024

Component	Amount
1. Unfunded actuarial accrued liability at beginning of year	\$3,587,722,400
2. Total normal cost at beginning of year, including administrative expense assumption	97,794,349
3. Total contributions	-256,553,258
4. Interest on 1, 2 & 3	231,308,420
5. Expected unfunded actuarial accrued liability	3,660,271,911
6. Changes due to:	
a. Net experience loss	70,564,318
b. Assumptions	-68,583,591
c. Plan provisions	2,672,635
d. Total changes	4,653,362
7. Unfunded actuarial accrued liability at end of year	\$3,664,925,273

Section 2: Actuarial Valuation Results

Actuarially determined contribution

The actuarially determined contribution is equal to the city normal cost payment and a payment on the unfunded actuarial accrued liability. As of January 1, 2025, the actuarially determined contribution projected to October 1, 2025 is \$257,221,807, or 46.07% of projected pay.

Pursuant to the Funding Agreement with the City, the ADC is based on a closed amortization period of 30 years, established as of January 1, 2023. For valuation dates from January 1, 2024 through January 1, 2033, changes in the UAL will be amortized over the remaining period of the 2023 bases. For valuation dates beginning January 1, 2033, changes in the UAL will be amortized over 20-year periods. As of January 1, 2025, there are 28 years remaining on this schedule. The current funding policy is intended to result in predictable contributions that eliminate the UAL within 28 years, thereby providing benefit security to plan participants while balancing the needs of current and future contributors to the plan.

Actuarially Determined Contribution

Component	2025 Amount	2025 Percent of Projected Pay	2024 Amount	2024 Percent of Projected Pay
1. Total normal cost	\$121,246,713	21.72%	\$91,011,327	19.04%
2. Administrative expenses	6,783,022	1.21%	6,783,022	1.42%
3. Expected member contributions	-73,452,849	-13.16%	-63,352,208	-13.25%
4. Employer normal cost: (1) + (2) + (3)	54,576,886	9.78%	34,442,141	7.20%
5. Actuarial accrued liability	5,557,257,281		5,419,015,764	
6. Actuarial value of assets	1,892,332,008		1,831,293,364	
7. Unfunded actuarial accrued liability: (5) - (6)	3,664,925,273		3,587,722,400	
8. Employer normal cost projected to October 1, 2025 and 2024	56,003,351	10.03%	35,085,934	7.34%
9. Payment on projected unfunded actuarial accrued liability	193,245,395	34.61%	175,781,640	36.77%
10. Adjustment for timing ¹	7,973,061	1.43%	6,745,310	1.41%
11. Actuarially determined contribution: (8) + (9) + (10)	\$257,221,807	46.07%	\$217,612,884	45.52%
12. Projected pay ²	558,316,082		478,047,316	

¹ Actuarially determined contributions are assumed to be paid at the middle of the year.

² Total computation pay, or valuation pay, is the active members' actual payroll for the preceding year, increased by the salary scale applicable for each member to account for their anticipated salary increases in the upcoming year, projected 21 months with the payroll growth assumption to the beginning of the fiscal year.

Section 2: Actuarial Valuation Results

Funding agreement contribution

The Funding Agreement adopted by the Board is designed to reduce the volatility of the City's contribution amount by setting maximum payments through the Fiscal Year ending September 30, 2054, based on the initial 30-year amortization of a UAL as of January 1, 2023 and percent-of-pay corridors. The City's contribution determined by the Funding Agreement is shown below.

Funding Agreement Contribution

Component	2025 Amount	2025 Percent of Projected Pay	2024 Amount	2024 Percent of Projected Pay
1. Actuarially determined contribution	\$257,221,807	46.07%	\$217,612,884	45.52%
2. Amortization of January 1, 2023 UAL per Funding Agreement	179,482,000		161,656,000	
3. Administrative expenses per Funding Agreement	7,000,000		7,000,000	
4. Total 2023 UAL payment and administrative expenses per Funding Agreement: (2) + (3)	186,482,000		168,656,000	
5. Employer normal cost, excluding administrative expenses, projected to October 1, 2025 and 2024, with adjustment for timing	50,611,850	9.07%	29,077,432	6.08%
6. Funding Agreement corridor	37,183,851	6.66%	32,411,608	6.78%
7. Additional contribution subject to corridor: lesser of (5) and (6)	37,183,851	6.66%	32,411,608	6.78%
8. Funding Agreement contribution: (4) + (7)	\$223,665,851	40.06%	\$201,067,608	42.06%

Section 2: Actuarial Valuation Results

Reconciliation of actuarially determined contribution

Reconciliation from October 1, 2024 to October 1, 2025

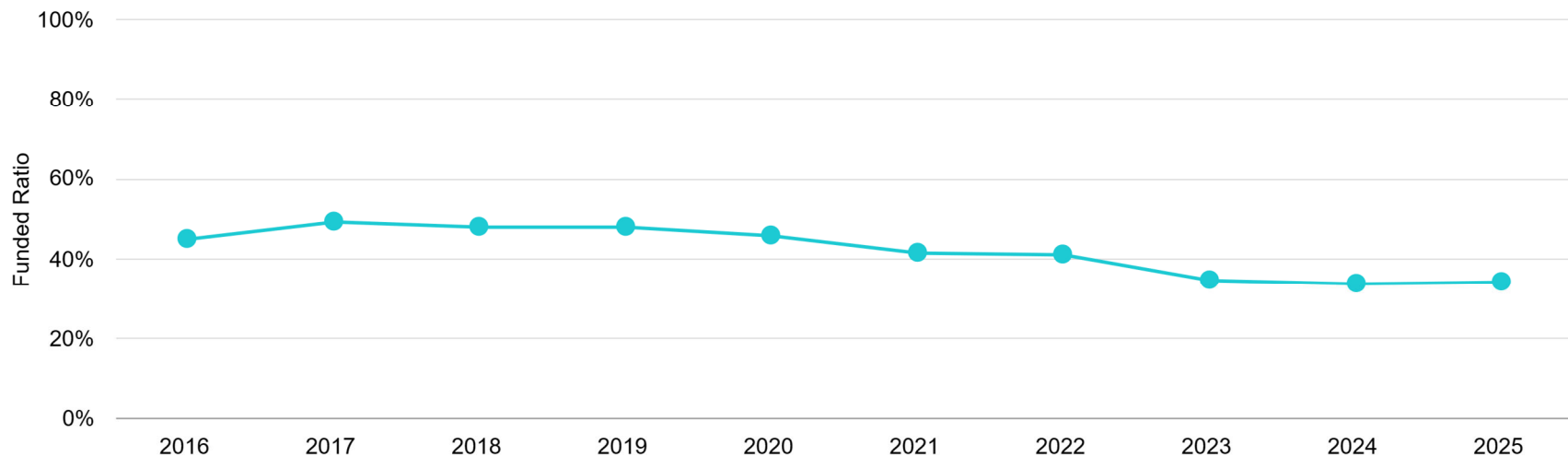
Component	Amount
Actuarially determined contribution as of October 1, 2025	\$217,612,884
Changes in Actuarially Determined Contribution due to:	
• Plan amendments	\$622,356
• Expected change in amortization payment due to payroll growth	4,535,115
• Change in actuarial assumptions	10,777,885
• Investment gain	-2,655,160
• Other gains and losses on accrued liability	7,015,219
• Other changes, including composition and number of members ¹	19,313,508
• Total change	\$39,608,923
Actuarially determined contribution as of October 1, 2026	\$257,221,807

¹ Includes impact of three-year step up of 2023 graded base

Section 2: Actuarial Valuation Results

Schedule of funding progress through December 31, 2024

Actuarial Valuation Date of January 1	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Computation Pay (c)	UAAL as a Percentage of Computation Pay [(b) – (a)] / (c)
2016	\$2,680,124,303	\$5,947,173,998	\$3,267,049,695	45.07%	\$365,210,426	894.57%
2017	2,157,799,730	4,367,180,454	2,209,380,724	49.41%	357,414,472	618.16%
2018	2,151,039,343	4,505,437,185	2,354,397,842	47.74%	346,036,690	680.39%
2019	2,161,899,662	4,494,822,504	2,332,922,842	48.10%	363,117,415	642.47%
2020	2,160,125,611	4,723,972,480	2,563,846,869	45.73%	396,954,743	645.88%
2021	2,127,834,406	5,115,966,592	2,988,132,186	41.59%	427,440,530	699.08%
2022	2,117,978,431	5,158,782,340	3,040,803,909	41.06%	436,971,384	695.88%
2023	1,806,567,341	5,249,014,813	3,442,447,472	34.42%	462,820,226	743.80%
2024	1,831,293,364	5,419,015,764	3,587,722,400	33.79%	469,275,612	764.52%
2025	1,892,332,008	5,557,257,281	3,664,925,273	34.05%	544,095,176	673.58%



Section 2: Actuarial Valuation Results

History of employer contributions

Actuarially Determined Contribution (ADC) versus Actual Contribution

City's Fiscal Year Ended September 30	ADC for Fiscal Year Ended September 30	ADC as Percentage of Computation Pay	Actual Contribution Amount During Fiscal Year	Actual Contribution as a Percentage of Computation Pay	Percent Contributed
2025	\$217,612,884	45.52%	\$204,888,932	42.86%	94.15%
2026	257,221,807	46.07%	--	--	--

Section 2: Actuarial Valuation Results

Low-Default-Risk Obligation Measure (LDROM)

Actuarial Standard of Practice No. 4 (ASOP 4) *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, requires the disclosure of a Low-Default-Risk Obligation Measure (LDROM) when performing a funding valuation. The LDROM presented in this report is calculated using the same methodology and assumptions used to determine the Actuarial Accrued Liability (AAL) used for funding, except for the discount rate. The LDROM is required to be calculated using “a discount rate...derived from low-default-risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future.”

The LDROM is a calculation assuming a plan’s assets are invested in an all-bond portfolio, generally lowering expected long-term investment returns. The discount rate selected and used for this purpose is the Bond Buyer General Obligation 20-year Municipal Bond Index Rate, published at the end of each week. The last published rate in December of the measurement period, by The Bond Buyer (www.bondbuyer.com), is 4.08% for use effective December 31, 2024. This is the rate used to determine the discount rate for valuing reported public pension plan liabilities in accordance with Governmental Accounting Standards when plan assets are projected to be insufficient to make projected benefit payments, and the 20-year period reasonably approximates the duration of plan liabilities. The LDROM is not used to determine a plan’s funded status or Actuarially Determined Contribution. The plan’s expected return on assets, currently 6.50%, is used for these calculations.

As of December 31, 2024, the LDROM for the system is \$0. The difference between the plan’s AAL of \$5,874,471,194 and the LDROM can be thought of as the increase in the AAL if the entire portfolio were invested in low-default-risk securities. Alternatively, this difference could also be viewed as representing the expected savings from investing in the plan’s diversified portfolio compared to investing only in low-default-risk securities.

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. In general, if plan assets were invested exclusively in low-default-risk securities, the funded status would be lower and the Actuarially Determined Contribution would be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce investment volatility and the volatility of employer contributions, it also may be more likely to result in higher employer contributions or lower benefits.

Section 2: Actuarial Valuation Results

Risk

The actuarial valuation results are dependent on a single set of assumptions; however, there is a risk that emerging results may differ significantly as actual experience proves to be different from the current assumptions.

We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Plan's future financial condition but have included a brief discussion of some risks that may affect the Plan.

- Economic and Other Related Risks. Potential implications for the Plan due to the following economic effects (that were not reflected as of the valuation date) include:
 - Volatile financial markets and investment returns lower than assumed
 - High inflationary environment impacting salary increases and COLAs

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

The System has experienced some of the challenges associated with investment risk and has had to write down the value of its assets significantly in recent years. Recognized market returns have been well below the long-term assumptions as the System rebalances the investment portfolio and are expected to continue to be below average in the short-term.

The market value rate of return over the last 17 years has ranged from a low of -24.80% to a high of 16.99%.

- 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 actuarially determined contribution.

- Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

City contributions are set by the Funding Agreement which includes maximum amounts and set contributions through the Fiscal Year ending September 30, 2029, which may be less than the actuarially determined contributions. If future experience does not match the assumptions used to set the contributions, the unfunded actuarial accrued liability may not be paid off within 30 years.

- 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.

Section 2: Actuarial Valuation Results

- There are external factors including legislative or financial reporting changes that could impact the Plan's funding and disclosure requirements. While we do not assume any changes in such external factors, it is important to understand that they could have significant consequences for the Plan.

- Actual Experience Over the Last Ten Years

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

- The annual investment gain(loss) on a market value basis has ranged from a loss of \$472.8 million to a gain of \$198.2 million.
- The annual non-investment gain(loss) has ranged from a loss of \$113.5 million to a gain of \$59.2 million.

Plan Year Ended	Market Investment Gain/(Loss)	All Other Gains and (Losses)
2015	-\$472,849,609	\$59,238,981
2016	-9,954,337	-53,565,950
2017	-52,151,589	-51,705,978
2018	-105,891,055	59,106,115
2019	-19,852,697	-13,622,672
2020	-149,294,320	-66,430,137
2021	198,197,350	31,267,441
2022	-377,563,609	45,173,646
2023	129,403,995	23,536,444
2024	51,809,960	-113,536,117

- The funded percentage on the actuarial value of assets has ranged from a low of 32.0% to a high of 49.4% since 2015.

Maturity Measures

- As pension plans mature, the cash needed 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 participant ratio of 1.02.
- For the prior year, benefits paid and administrative expenses were \$97.8 million more than contributions received. Plans with high levels of negative cash flows may have a need for a larger allocation to income-generating assets, which can create a drag on investment returns.

Section 2: Actuarial Valuation Results

Detailed Risk Assessment

- A more detailed assessment of the risks would provide the Board with a better understanding of the risks inherent in the Plan. This assessment may include scenario testing, sensitivity testing, stress testing, and stochastic modeling.
- A detailed risk assessment could be important for the Plan because:
 - The Plan's asset allocation has potential for a significant amount of investment return volatility.
 - Inactive and retired participants account for most of the Plan's liabilities, leaving limited options for reducing plan costs in the event of adverse experience.
 - Potential changes in the covered population may result in participant choices that vary from those assumed.
 - Actual contributions have been less than the actuarially determined contribution for several years, which may indicate additional funding challenges in the future.

Section 2: Actuarial Valuation Results

GFOA funded liability by type

The Actuarial Accrued Liability represents the present value of benefits earned, calculated using the Plan's actuarial cost method. The Actuarial Value of Assets reflects the financial resources available to liquidate the liability. The portion of the liability covered by assets reflects the extent to which accumulated plan assets are sufficient to pay future benefits, and is shown for liabilities associated with employee contributions, pensioner liabilities, and other liabilities. The Government Finance Officers Association (GFOA) recommends that the funding policy aim to achieve a funded ratio of 100 percent.

GFOA Funded Liability by Type as of December 31

Type	2025	2024
Actuarial accrued liability (AAL)		
Active member contributions	\$490,230,548	\$443,981,246
Retirees and beneficiaries	3,520,994,086	3,606,964,608
Inactive vested members	35,874,365	31,190,865
Active and inactive non-vested members (employer-financed)	1,510,158,282	1,336,879,045
Total	\$5,557,257,281	\$5,419,015,764
Actuarial value of assets	1,892,332,008	1,831,293,364
Cumulative portion of AAL covered		
Active member contributions	100.00%	100.00%
Retirees and beneficiaries	39.82%	38.46%
Active and inactive members (employer-financed)	0.00%	0.00%

Section 2: Actuarial Valuation Results

Actuarial balance sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, first the amount and timing of all future payments that will be made by the Plan for current members is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the "liability" of the Plan.

Second, this liability is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments for the unfunded actuarial accrued liability.

Actuarial Balance Sheet

Description	Year Ended December 31, 2024	Year Ended December 31, 2023
Liabilities		
Present value of benefits for retired members and beneficiaries (non-DROP)	\$2,731,088,101	\$2,793,502,442
Present value of benefits for retired members and beneficiaries (DROP)	789,905,985	813,462,166
Present value of benefits for inactive vested members	36,983,128	33,082,486
Present value of benefits for active members	3,428,552,608	2,710,258,893
Total liabilities	\$6,986,529,822	\$6,350,305,987
Current and future assets		
Total valuation value of assets	\$1,892,332,008	\$1,831,293,364
Present value of future contributions by members	879,430,893	648,816,018
Present value of future employer contributions for:		
• Entry age cost	549,841,648	282,474,205
• Unfunded actuarial accrued liability	3,664,925,273	3,587,722,400
Total of current and future assets	\$6,986,529,822	\$6,350,305,987

Section 2: Actuarial Valuation Results

Volatility ratios

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by computation pay, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measurement since it is based on the current level of assets.

The current AVR is about 3.7. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 3.7% of one-year's computation pay. Since actuarial gains and losses are amortized over 5 years, there would be a 0.7% of computation pay decrease/(increase) in the required contribution for each 1% asset gain or loss.

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by computation pay, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions. The current LVR is about 10.2. This is about 276% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long term.

Section 2: Actuarial Valuation Results

Year Ended December 31	Volatility Ratios	
	Asset Volatility Ratio	Liability Volatility Ratio
2015	7.3	16.3
2016	6.0	12.2
2017	6.1	13.0
2018	5.6	12.4
2019	5.2	11.9
2020	4.5	12.0
2021	4.9	11.8
2022	3.9	11.3
2023	4.1	11.5
2024	3.7	10.2

Section 3: Supplemental Information

Exhibit A: Table of plan demographics

Demographic Data	December 31, 2024	December 31, 2023	Change
Active members in valuation:			
• Number	5,356	5,131	4.4%
• Average age	39.9	40.1	-0.2
• Average years of service	12.4	12.6	-0.2
• Average computation pay	\$101,586	\$91,459	11.1%
• Account balances	490,230,548	443,981,246	10.4%
• Total active vested members	3,976	3,854	3.2%
Active members in valuation (excluding DROP):			
• Number	5,161	4,921	4.9%
• Average age	39.2	39.2	0.0
• Average years of service	11.6	11.7	-0.1
• Average computation pay	\$101,054	\$91,050	11.0%
Active members in valuation (DROP only):			
• Number	195	210	-7.1%
• Average age	60.1	59.6	0.5
• Average years of service	33.8	33.4	0.4
• Average computation pay	\$115,679	\$101,046	14.5%
• DROP Account balances	78,774,807	88,453,699	-10.9%
Inactive vested members:			
• Number	240	254	-5.5%
• Average age	42.4	42.2	0.2
• Average monthly benefit	\$1,324	\$1,315	0.7%

Section 3: Supplemental Information

Demographic Data	December 31, 2024	December 31, 2023	Change
Inactive nonvested members due a refund:			
• Number	234	326	-28.2%
• Accumulated contribution balance	\$1,108,763	\$1,891,621	-41.4%
Retired members:			
• Number in pay status	3,917	3,910	0.2%
• Average age	68.7	68.4	0.3
• Average monthly benefit	\$4,971	\$4,935	0.7%
Disabled members:			
• Number in pay status	98	105	-6.7%
• Average age	68.2	69.5	-1.3
• Average monthly benefit	\$3,554	\$3,562	-0.2%
Beneficiaries:			
• Number in pay status	1,227	1,216	0.9%
• Average age (excludes child beneficiaries)	73.7	72.9	0.8
• Average monthly benefit	\$2,619	\$2,525	3.7%
Beneficiaries with DROP only:	203	141	44.0%

Section 3: Supplemental Information

Exhibit B: Members in active service and average pay¹ as of December 31, 2024 by age and years of service

Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	244	244	--	--	--	--	--	--	--	--
	\$77,934	\$77,934	--	--	--	--	--	--	--	--
25-29	778	579	199	--	--	--	--	--	--	--
	\$84,852	\$81,755	\$93,862	--	--	--	--	--	--	--
30 - 34	928	366	461	101	--	--	--	--	--	--
	\$93,066	\$82,766	\$97,800	\$108,784	--	--	--	--	--	--
35 - 39	921	141	277	350	153	--	--	--	--	--
	\$102,584	\$81,072	\$97,805	\$110,065	\$113,946	--	--	--	--	--
40 - 44	786	32	104	205	384	61	--	--	--	--
	\$108,446	\$85,201	\$97,325	\$108,503	\$112,306	\$115,107	--	--	--	--
45 - 49	706	12	29	95	253	245	72	--	--	--
	\$112,592	\$81,594	\$93,626	\$108,164	\$112,837	\$116,282	\$117,824	--	--	--
50 - 54	547	4	8	26	123	172	186	28	--	--
	\$114,640	\$91,412	\$103,322	\$108,637	\$110,109	\$114,721	\$118,774	\$118,713	--	--
55 - 59	312	--	1	12	29	61	80	105	24	--
	\$114,917	--	\$103,878	\$108,988	\$110,413	\$115,575	\$114,737	\$115,879	\$118,505	--
60 - 64	106	1	1	3	12	26	15	20	26	2
	\$111,772	\$8,827	\$95,093	\$113,526	\$105,722	\$113,322	\$109,578	\$114,241	\$115,474	\$128,732
65 - 69	22	1	--	2	1	4	3	2	4	5
	\$107,641	\$86,559	--	\$108,332	\$99,315	\$100,297	\$113,607	\$106,684	\$114,737	\$110,250
70 & over	6	--	--	--	2	--	--	--	--	4
	\$118,878	--	--	--	\$103,394	--	--	--	--	\$126,620
Total	5356	1380	1080	794	957	569	356	155	54	11
	\$101,586	\$81,335	\$96,962	\$109,217	\$112,254	\$115,361	\$117,244	\$116,061	\$116,767	\$119,563

¹ Compensation is annualized for those hired during the prior plan year

Section 3: Supplemental Information

Police members in active service and average pay¹ as of December 31, 2024 by age and years of service

Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	132	132	--	--	--	--	--	--	--	--
	\$77,864	\$77,864	--	--	--	--	--	--	--	--
25-29	474	328	146	--	--	--	--	--	--	--
	\$85,497	\$82,042	\$93,258	--	--	--	--	--	--	--
30 - 34	531	193	261	77	--	--	--	--	--	--
	\$93,969	\$83,375	\$97,640	\$108,081	--	--	--	--	--	--
35 - 39	508	74	119	215	100	--	--	--	--	--
	\$103,089	\$80,636	\$97,635	\$108,972	\$113,547	--	--	--	--	--
40 - 44	461	20	47	96	250	48	--	--	--	--
	\$108,396	\$84,921	\$95,787	\$107,789	\$111,596	\$115,076	--	--	--	--
45 - 49	402	6	22	46	155	131	42	--	--	--
	\$110,823	\$82,630	\$91,239	\$108,296	\$112,037	\$113,339	\$115,549	--	--	--
50 - 54	331	2	5	20	88	98	100	18	--	--
	\$112,939	\$95,479	\$104,809	\$109,493	\$110,137	\$113,517	\$115,806	\$115,586	--	--
55 - 59	196	--	--	10	23	38	41	72	12	--
	\$113,554	--	--	\$108,474	\$109,823	\$114,322	\$113,957	\$114,337	\$116,425	--
60 - 64	66	--	--	1	9	14	9	14	18	1
	\$111,215	--	--	\$103,510	\$105,892	\$112,449	\$104,805	\$115,682	\$111,688	\$136,209
65 - 69	15	--	--	1	1	4	3	2	4	--
	\$107,786	--	--	\$103,143	\$99,315	\$100,297	\$113,607	\$106,684	\$114,737	--
70 & over	5	--	--	--	2	--	--	--	--	3
	\$115,412	--	--	--	\$103,394	--	--	--	--	\$123,424
Total	3,121	755	600	466	628	333	195	106	34	4
	\$101,495	\$81,631	\$96,253	\$108,502	\$111,619	\$113,560	\$114,820	\$114,582	\$113,719	\$126,620

¹ Compensation is annualized for those hired during the prior plan year

Section 3: Supplemental Information

Fire members in active service and average pay¹ as of December 31, 2024 by age and years of service

Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	112	112	--	--	--	--	--	--	--	--
	\$78,016	\$78,016	--	--	--	--	--	--	--	--
25-29	304	251	53	--	--	--	--	--	--	--
	\$83,845	\$81,379	\$95,527	--	--	--	--	--	--	--
30 - 34	397	173	200	24	--	--	--	--	--	--
	\$91,858	\$82,087	\$98,008	\$111,040	--	--	--	--	--	--
35 - 39	413	67	158	135	53	--	--	--	--	--
	\$101,962	\$81,554	\$97,933	\$111,805	\$114,698	--	--	--	--	--
40 - 44	325	12	57	109	134	13	--	--	--	--
	\$108,515	\$85,669	\$98,593	\$109,132	\$113,630	\$115,222	--	--	--	--
45 - 49	304	6	7	49	98	114	30	--	--	--
	\$114,931	\$80,559	\$101,127	\$108,039	\$114,103	\$119,663	\$121,010	--	--	--
50 - 54	216	2	3	6	35	74	86	10	--	--
	\$117,247	\$87,344	\$100,845	\$105,783	\$110,036	\$116,315	\$122,226	\$124,340	--	--
55 - 59	116	--	1	2	6	23	39	33	12	--
	\$117,221	--	\$103,878	\$111,560	\$112,672	\$117,645	\$115,558	\$119,243	\$120,585	--
60 - 64	40	1	1	2	3	12	6	6	8	1
	\$112,690	\$8,827	\$95,093	\$118,534	\$105,211	\$114,341	\$116,737	\$110,877	\$123,993	\$121,254
65 - 69	7	1	--	1	--	--	--	--	--	5
	\$107,333	\$86,559	--	\$113,522	--	--	--	--	--	\$110,250
70 & over	1	--	--	--	--	--	--	--	--	1
	\$136,209	--	--	--	--	--	--	--	--	\$136,209
Total	2,235	625	480	328	329	236	161	49	20	7
	\$101,713	\$80,977	\$97,848	\$110,233	\$113,466	\$117,902	\$120,179	\$119,259	\$121,948	\$115,530

¹ Compensation is annualized for those hired during the prior plan year

Section 3: Supplemental Information

Exhibit C: Reconciliation of member data

Description	Active Members	Inactive Vested Members ¹	Disableds	Retired Members	Beneficiaries ²	Total
Number as of January 1, 2024	5,131	254	105	3,910	1,216	10,616
New members	455	N/A	N/A	N/A	N/A	455
Terminations — with vested rights	-28	28	N/A	N/A	N/A	—
Terminations — without vested rights	-30	—	N/A	N/A	N/A	-30
Retirements	-94	-25	N/A	119	N/A	—
New disabilities	-2	—	2	N/A	N/A	—
Died with beneficiary	—	—	—	—	72	72
Died without beneficiary	-6	—	-10	-108	-46	-170
Lump sum cash-outs	-101	-15	N/A	N/A	N/A	-116
Rehire	31	-3	N/A	-3	N/A	25
Certain period expired	N/A	N/A	—	—	-9	-9
Data adjustments	—	1	1	-1	6	-5
Number as of January 1, 2025	5,356	240	98	3,917	1,227	10,838

¹ Excludes non-vested terminated members due a refund of contributions

² Excludes beneficiaries with DROP only

Section 3: Supplemental Information

Exhibit D: Summary of income and expenses on a market value basis

Item	Year Ended December 31, 2024	Year Ended December 31, 2023
Contribution and other income:		
• City contributions	\$188,633,391	\$171,960,839
• Member contributions	67,919,867	62,510,063
– Total contribution income	\$256,553,258	\$234,470,902
Investment income:		
• Investment income	\$181,869,341	\$249,561,564
• Less investment fees	-7,474,450	-6,463,286
– Net investment income	\$174,394,891	\$243,098,278
• Total income available for benefits	\$430,948,149	\$477,569,180
Benefit payments and expenses:		
• Administrative expenses	-\$7,408,894	-\$5,974,248
• Benefit payments	-341,808,845	-338,035,629
• Refunds	-5,124,597	-5,310,084
– Total benefit payments and expenses	-\$354,342,336	-\$349,319,961
Change in market value of assets	\$76,605,813	\$128,249,219
Market value of assets, beginning of the year	\$1,934,816,560	\$1,806,567,341
Market value of assets, end of the year	\$2,011,422,373	\$1,934,816,560

Section 3: Supplemental Information

Exhibit E: Determination of Actuarial Value of Assets

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 market 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 market 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, 2024

Item	Original Amount ¹	Percent Deferred ²	Unrecognized Amount ³	Amount
1. Market value of assets, December 31, 2024				\$2,011,422,373
2. Calculation of unrecognized return				
a. Year ended December 31, 2024	\$51,809,960	80%	\$41,447,968	
b. Year ended December 31, 2023	129,403,995	60%	77,642,397	
c. Total unrecognized return				\$119,090,365
3. Preliminary actuarial value: (1) - (2c)				1,892,332,008
4. Adjustment to be within 20% corridor				0
5. Final actuarial value of assets as of December 31, 2024: (3) + (4)				\$1,892,332,008
6. Actuarial value as a percentage of market value: (5) ÷ (1)				94.1%
7. Amount deferred for future recognition: (1) - (5)				\$119,090,365

¹ Total return minus expected return on a market value basis.

² Percent deferred applies to the current valuation year.

³ Recognition at 20% per year over five years. Deferred return as of December 31, 2024 recognized in each of the next four years:

a. Amount recognized on December 31, 2025	36,242,791
b. Amount recognized on December 31, 2026	36,242,791
c. Amount recognized on December 31, 2027	36,242,791
d. Amount recognized on December 31, 2028	10,361,992

Section 3: Supplemental Information

Exhibit F: Summary statement of plan assets

Item	As of December 31, 2024	As of December 31, 2023
Cash equivalents		
• Total cash equivalents	\$72,096,323	\$62,268,524
Accounts receivable:		
• Total accounts receivable	\$17,713,722	\$15,262,594
Capital assets	11,350,562	11,339,331
Investments:		
• Short-term investments	\$27,630,911	\$16,809,984
• Fixed income securities	401,780,308	362,092,006
• Equity securities	1,055,766,008	985,512,002
• Real assets	247,322,377	275,723,992
• Private equity	185,443,416	216,632,700
• Other	-49	0
• Total investments at market value	\$1,917,942,971	\$1,856,770,684
Total assets	\$2,019,103,578	\$1,945,641,133
Accounts payable:		
• Total accounts payable	-\$7,681,205	-\$10,824,573
Net assets at market value	\$2,011,422,373	\$1,934,816,560
Net assets at actuarial value	\$1,892,332,008	\$1,831,293,364

Section 3: Supplemental Information

Exhibit G: History of financial information

Year Ended December 31	City Contributions	Employee Contributions	Net Investment Return ¹	Admin. Expenses ²	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2015	\$114,885,723	\$25,676,327	-\$254,829,470	- -	\$285,003,174	\$2,680,124,303	\$2,680,124,303	100.0%
2016	119,423,106	25,518,317	159,355,111	\$9,492,445	825,092,132	2,149,836,260	2,157,799,730	100.4%
2017	126,318,005	32,977,425	98,457,176	8,089,584	296,153,811	2,103,345,471	2,151,039,343	102.3%
2018	149,356,565	49,332,262	42,822,297	5,861,410	297,081,055	2,041,914,130	2,161,899,662	105.9%
2019	155,721,087	52,268,293	124,259,607	6,445,251	309,860,549	2,057,857,317	2,160,125,611	105.0%
2020	161,950,183	57,305,399	-8,927,336	6,534,350	317,950,620	1,943,700,593	2,127,834,406	109.5%
2021	165,541,265	58,559,980	321,062,889	6,390,829	324,633,468	2,157,840,430	2,117,978,431	98.2%
2022	169,911,420	59,706,574	-240,891,386	6,361,999	333,637,698	1,806,567,341	1,806,567,341	100.0%
2023	171,960,839	62,510,063	243,098,278	5,974,248	343,345,713	1,934,816,560	1,831,293,364	94.6%
2024	188,633,391	67,919,867	174,394,891	7,408,894	346,933,442	2,011,422,373	1,892,332,008	94.1%

¹ On a market basis, net of investment fees

² Expenses were subtracted from net investment return prior to 2016

Section 3: Supplemental Information

Exhibit H: Table of amortization bases

Type	Date Established	Initial Period	Initial Amount	Annual Payment ¹	Years Remaining	Outstanding Balance
Initial base layer ²	1/1/2023	30	\$2,290,000,000	\$132,327,804	28	\$2,317,026,083
Initial graded layer ^{2,3}	1/1/2023	30	988,028,785	38,315,378	28	1,080,318,474
Actuarial loss	1/1/2024	29	127,084,062	6,535,300	28	127,763,092
Change in assumptions	1/1/2024	29	116,622,580	5,997,318	28	117,245,713
Actuarial loss	1/1/2025	28	88,482,867	4,526,050	28	88,482,867
Change in assumptions	1/1/2025	28	-68,583,591	-3,508,168	28	-68,583,591
Plan amendments	1/1/2025	28	2,672,635	136,710	28	2,672,635
Total				\$184,330,392		\$3,664,925,273

¹ Level percent of payroll

² The two 2023 initial bases are amortized using a 2.50% level percent of payroll assumption.

³ Annual payment based on year two of five-year step-up methodology.

Actuarial gain and loss bases Include annual actuarial experience along with an amount to ensure the outstanding balance of the bases equals the unfunded actuarial accrued liability.

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial assumptions, methods and models

Rationale for assumptions

The information and analysis used by the Board in selecting each assumption that has a significant effect on this actuarial valuation is shown in the Experience Study Report for the five-year period ended December 31, 2024. Current data is reviewed in conjunction with each annual valuation. Assumption changes are listed at the end of this exhibit.

Net investment return

6.50%. The net investment return assumption was chosen by the System's Board of Trustees, with input from the actuary. This assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the System's target asset allocation.

Section 4: Actuarial Valuation Basis

Salary increases

Year	Officers	Corporals, Drivers & Senior Officers	Sergeants, Lieutenants, Captains, Majors, Deputy Chiefs, Assistant Chiefs & Chiefs
2025	10.00%	14.00%	10.00%
2026+	Service based rates	Service based rates	Service based rates

Service	Rate
0-2	8.00%
3-5	7.00%
6-8	6.00%
9-11	5.00%
12-14	4.00%
15+	3.50%

The salary scale assumption is based on the 2025 pay scales, along with analysis completed in conjunction with an Experience Study Report for the five-year period ended December 31, 2024.

Payroll growth

3.50%, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.

Cost-of-living adjustments

Prior to October 1, 2046: 0.00%

Beginning October 1, 2046: 1.50%, on original benefit

The assumption for the year the COLA begins is updated periodically and set equal to the year the System is projected to be 70% funded on a market value basis after the COLA is reflected. The COLA assumption will automatically be updated as needed to remain five percentage points less than the net investment return assumption.

Section 4: Actuarial Valuation Basis

Administrative expenses

\$7,000,000 per year, payable monthly (equivalent to \$6,783,022 at the beginning of the year), or 1% of computation pay, if greater

Mortality rates

Healthy pre-retirement: Pub-2016 Public Safety Employee Amount-Weighted Mortality Table, set forward five years for males and set back 2 years for females, projected generationally using Scale MP-2021

Healthy annuitants and dependent spouses: Pub-2016 Public Safety Retiree Amount-Weighted Mortality Table, multiplied times 1.25 for males and multiplied times 0.8 for females, projected generationally using Scale MP-2021

Healthy contingent beneficiaries: Pub-2016 Public Safety Contingent Survivor Amount-Weighted Mortality Table, multiplied by 1.1 for males and multiplied by 1.25 for females, projected generationally using Scale MP-2021

Disabled annuitants: Pub-2016 Public Safety Disabled Retiree Amount-Weighted Mortality Table, set forward five years for males, projected generationally using Scale MP-2021

The tables above, with adjustments as shown and projected to the measurement date, reasonably reflect the mortality experience of the System as of the measurement date. The mortality tables are then generationally projected using Scale MP-2021 to anticipate future mortality improvement.

30% of pre-retirement active deaths are assumed to be in the line of duty.

Section 4: Actuarial Valuation Basis

Termination rates (%) before retirement

Disability

Age	Disability ¹
20	0.004
25	0.009
30	0.014
35	0.019
40	0.024
45	0.029
50	0.034
55	--
60	--

Withdrawal

Years of Service	Police	Fire
0	15.0	12.0
1	9.0	9.0
2 – 4	6.5	7.0
5	4.0	5.0
6 – 7	4.0	2.5
8	2.0	2.5
9 – 10	2.0	1.0
11 – 20	1.5	1.0
21 – 24	1.0	1.0
25 & over	0.0	0.0

¹ 100% of disabilities are assumed to be service related

Section 4: Actuarial Valuation Basis

Retirement rates

DROP Active Members

Age	Police Retirement Probability (%)	Fire Retirement Probability (%)
Under 52	0	0
52 – 56	11	5
57	20	20
58 – 59	20	30
60	30	30
61	30	20
62 – 64	10	20
65 & over	100	100

75% retirement rate after ten years in DROP.

Non-DROP Active Members

Age	Member with at least 20 years of service as of September 1, 2017 Retirement Probability (%)	Member with less than 20 years of service as of September 1, 2017 Retirement Probability (%)
Under 50	1	1
50 – 51	11	4
52 – 53	15	4
54 – 56	15	7
57 – 58	15	8
59 – 61	30	8
62	100	100

100% retirement rate once benefit multiplier hits 90% maximum

Section 4: Actuarial Valuation Basis

Weighted average retirement age

Age 58, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active members included in the January 1, 2025 actuarial valuation

Retirement for inactive vested participants

Terminated vested members are assumed to retire at Normal Retirement Age. 25% of members are assumed to take a lump sum cash out within the first two years of termination.

DROP utilization

No members are assumed to elect to enter DROP

Interest on DROP accounts

2.75% on account balances as of September 1, 2017, payable upon retirement

0.00% on account balances accrued after September 1, 2017

DROP payment period

Based on expected lifetime as of the later of September 1, 2017 or retirement date. Expected lifetime determined based on an 85% male/15% female blend of the current healthy annuitant mortality tables.

DROP annuitization interest

2.75%. Based on United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years.

Actuarial equivalence

Actuarial equivalence for optional forms of benefit payments are based on an 85% male/15% female blend of the current healthy annuitant mortality tables, along with an interest rate of 6.50%

Section 4: Actuarial Valuation Basis

Unknown data for members

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

Family composition

75% of members are assumed to be married. Females are assumed to be two years younger than males. The youngest child is assumed to be ten years old.

Benefit election

Married participants are assumed to receive the Joint and Survivor annuity form of payment and non-married participants are assumed to receive a Life Only annuity.

Actuarial value of assets

Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.

Actuarial cost method

Entry Age Actuarial Cost Method. Entry Age is the age at the time the member commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis, with Normal Cost determined using the plan of benefits applicable to each participant. Actuarial Liability is allocated by salary.

Amortization methodology

The Board adopted a methodology that established two amortization bases of specified amounts as of January 1, 2023. The first amortization base was in the amount of \$2,290,000,000 and is to be amortized over 30 years on a level percent of pay basis. The second amortization base was in the amount of \$988,028,785, with a five-year step up of the amortization payment, with the outstanding balance after five years to be amortized over a 25-year period on a level percent of pay basis. Beginning on January 1, 2024, each year's experience due to actuarial gains and losses or plan, assumption, or method changes are amortized over the amortization period remaining on the initial 2023 bases. Beginning in 2033, newly established bases will be set at a period of 20 years.

Section 4: Actuarial Valuation Basis

Models

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.

The blended discount rate used for calculating total pension liability for GASB is based on a model developed by our Actuarial Technology and Systems unit, comprised of both actuaries and programmers. The model allows the client team, under the supervision of the responsible actuary, control over the entry of future expected contribution income, benefit payments and administrative expenses. The projection of fiduciary net position and the discounting of benefits is part of the model.

Justification for change in actuarial assumptions

As part of the Funding Agreement adopted by the Board on December 11, 2025, the following assumption change was effective January 1, 2024:

- The ad hoc COLA start year was moved from 2073 to 2046, based on when the System is assumed to be 70% funded.

Following an Experience Study for the period January 1, 2020 through December 31, 2024, the Trustees adopted the following assumption changes effective January 1, 2025:

- All mortality tables updated to Pub-2016 and projected generationally using Scale MP-2021:
 - Healthy annuitant mortality table, multiplied times 1.25 for males and multiplied by 0.8 for females
 - Contingent beneficiary mortality table, multiplied times 1.1 for males and multiplied by 1.25 for females
 - Disabled annuitant mortality table, set forward five years for males
 - Pre-retirement mortality, set forward five years for males and set back two years for females
- Retirement rates for all participant groups:
 - DROP actives: Lowered age-based rates covering the same age ranges for Fire and Police
 - Non-DROP actives: Updated age-based rates covering the same age ranges for Fire and Police
 - Inactive vested members: 25% of those who terminate will take a cash out within the first two years following termination; afterwards, 100% retirement at Normal Retirement Age
- Age-based disability rates lowered

Section 4: Actuarial Valuation Basis

- Service-based turnover rates updated
- Spousal age difference updated from females three years younger than males to two years younger
- Payroll growth increased from 2.50% to 3.50%
- Salary scales based on service, with 10-14% increase based on rank in first year, based on 2025 pay scales.

In conjunction with the plan changes for HB 4034, the following actuarial assumption was added effective January 1, 2025:

- 30% of pre-retirement active deaths are assumed to be in the line of duty.

Section 4: Actuarial Valuation Basis

Exhibit J: 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.

Plan year

January 1 through December 31

Plan status

Ongoing

Members whose participation began before March 1, 2011

Normal retirement

Benefit earned prior to September 1, 2017:

- Age Requirement: 50
- Service Requirement: 5
- Amount: Greater of 3.0% of Average Computation Pay times years of Pension Service (maximum 96.0%) and \$2,200 per month. The \$2,200 per month minimum benefit is prorated if the Member retires with less than 20 years of service.
- Average Computation Pay: 36 consecutive months that reflect the highest civil service rank held by a member, plus Educational Incentive Pay, Longevity Pay and City Service Incentive Pay

Benefit earned beginning September 1, 2017:

- Age Requirement: 58
- Service Requirement: 5
- Amount: Greater of 2.5% of Average Computation Pay times years of Pension Service (maximum 90.0%) and \$2,200 per month. The \$2,200 per month minimum benefit is prorated if the Member retires with less than 20 years of service.
- Average Computation Pay: 60 consecutive months that reflect the highest civil service rank held by a member, plus Educational Incentive Pay, Longevity Pay and City Service Incentive Pay

Section 4: Actuarial Valuation Basis

20 and out reduced retirement

If eligible as of September 1, 2017:

- Age Requirement: None
- Service Requirement: 20 years
- Amount: 20 & Out Multiplier times 36-month (Table 1 Benefit) or 60-month (Table 2 Benefit) Average Computation Pay times years of Pension Service

**Benefit Accrued Before September 1, 2017
20 & Out Table 1**

Age	Multiplier
45 & under	2.00%
46	2.25%
47	2.50%
48	2.75%
49	2.75%
50 & above	3.00%

**Benefit Accrued Beginning September 1, 2017
20 & Out Table 2**

Age	Multiplier
53 & under	2.00%
54	2.10%
55	2.20%
56	2.30%
57	2.40%
58 & above	2.50%

If not eligible as of September 1, 2017:

- Age Requirement: None
- Service Requirement: 20 years
- Amount: 20 & Out Multiplier times 60-month Average Computation Pay times years of Pension Service

20 & Out Table 2

Age	Multiplier
53 & under	2.00%
54	2.10%
55	2.20%
56	2.30%
57	2.40%
58 & above	2.50%

Section 4: Actuarial Valuation Basis

Early retirement

If at least age 45 as of September 1, 2017 and less than age 50:

- Age Requirement: 45
- Service Requirement: 5
- Amount: Normal pension accrued prior to September 1, 2017 plus the benefit accrued based on the 20 & Out Table 2 for service beginning September 1, 2017, reduced by 2/3 of 1% for each whole month by which the benefit commencement date precedes age 50

Non-service connected disability

- Eligibility: Injury or illness (lasting more than 90 days) not related to or incurred while in the performance of the member's job, preventing the member from performing their departmental duties.
- Amount: Normal pension accrued

Service connected disability

- Eligibility: Injury or illness (lasting more than 90 days) obtained while on duty in the performance of the member's job.
- Amount: Normal pension accrued; if the member has less than 20 years of service, the benefit will be calculated as if they had 20 years at the time of disability

Benefit supplement

- Age Requirement: 55
- Service Requirement: 20 years, waived if member is receiving a service-connected disability
- Amount: 3% of the total monthly benefit (including any applicable COLA's) payable to the Member when the Member attains age 55. The benefit supplement shall not be less than \$75 per month.
- Beginning September 1, 2017, only those annuitants and their survivors already receiving the supplement will be eligible to maintain their current supplement, which will not change ongoing; no additional retirees will be eligible for the supplement.

Section 4: Actuarial Valuation Basis

Members whose participation began on or after March 1, 2011

Normal retirement

- Age Requirement: 58
- Service Requirement: 5
- Amount: 2.5% of Average Computation Pay for each year of Pension Service, maximum 90%. The minimum monthly benefit is \$110 times the number of years of Pension Service at retirement, but not greater than \$2,200.
- Average Computation Pay: 60 consecutive months that reflects the highest civil service rank held by a member plus Educational Incentive Pay plus Longevity Pay plus City Service Incentive Pay

20 and out reduced retirement

- Age Requirement: None
- Service Requirement: 20 years
- Amount: 20 & Out Multiplier times Average Computation Pay times years of Pension Service

20 & Out Table 2	
Age	Multiplier
53 & under	2.00%
54	2.10%
55	2.20%
56	2.30%
57	2.40%
58 & above	2.50%

Section 4: Actuarial Valuation Basis

Early retirement

- Age Requirement: 53
- Service Requirement: 5
- Amount: Normal pension accrued, reduced by 2/3 of 1% for each whole month by which the benefit commencement date precedes the normal retirement date

Non-service-connected disability

- Eligibility: Injury or illness (lasting more than 90 days) not related to or incurred while in the performance of the member's job, preventing the member from performing their departmental duties.
- Amount: The Member's accrued benefit, but not less than a pro-rated minimum benefit

Service-connected disability

- Eligibility: Injury or illness (lasting more than 90 days) obtained while on duty in the performance of the member's job.
- Amount: The greater of 50% of Average Computation Pay and the Member's accrued benefit; if the member has less than 20 years of service, the benefit will be calculated as if they had 20 years of service at the time of disability.

All members

Termination benefit

- With less than five years of pension service: Upon request, the member's contributions will be returned without interest.
- With at least five years of pension service: The member may either withdraw contributions or leave contributions in the Plan and receive a monthly benefit to commence no earlier than the member's earliest eligibility for retirement benefits. Retirement benefit is equal to the accrued benefit as of the date of termination.

Section 4: Actuarial Valuation Basis

Pre-retirement death benefits

While in active service, duty-related deaths: The greater of 100% of the Member's accrued benefit or a benefit based on 20 years of service. The benefit may not exceed 90% of Average Computation Pay.

While in active service, off-duty deaths: The greater of 50% of the Member's accrued benefit or a benefit based on 20 years of service. The benefit may not exceed 45% of Average Computation Pay.

After leaving active service, with fewer than five years: A lump sum benefit equal to the return of member contributions without interest.

After leaving active service, with at least five years: 50% of the Member's accrued benefit, with no early retirement reduction, or a refund of member contributions

Post retirement death benefit

50% or 100% of the pension the Member was receiving at the time of their death, depending on the form of joint and survivor annuity chosen; if there are no qualifying survivors, no further benefits will be paid.

Qualified surviving children benefit

50% of the pension the Member was receiving at the time of their death, divided equally among the children, paid until the youngest child is 19 years old or for life if the child becomes disabled prior to age 23, unless the death is in the line of duty and there is not a Qualified Surviving Spouse, in which case the children share 100% of the pension the Member was receiving at the time of their death.

Minimum survivor benefit

\$1,100 per month, not to exceed the actual amount the Member was receiving upon their death. If there are no Qualified Surviving Children, the minimum benefit to a spouse who is a Qualified Survivor shall be \$1,200 per month. If the Member had less than 20 years of Pension Service, the minimum benefit will be prorated based on actual years of Pension Service.

Section 4: Actuarial Valuation Basis

Special survivor benefit

- Eligibility: Upon leaving active service or joining DROP: a) the Member was at least 55 years old with at least 20 years of pension service, or b) the sum of the Member's age plus Pension Service was at least 78; **and**
Has no Qualified Surviving Children or disabled children currently eligible for survivor benefits; **and**
Whose Qualified Surviving Spouse is at least 55 years old. The Qualified Surviving Spouse does not have to be 55 years old at the time of the Member's death.
- Amount: Once all the eligibility conditions are met, the amount the Qualified Surviving Spouse will receive increases from 50% of the Member's pension benefit to a percentage of the Member's pension benefit based on the Member's applicable benefit multiplier times the number of years of Pension Service the Member worked.

Survivor benefit if no qualified surviving spouse or qualified surviving children

A lump sum that is the actuarial equivalent of 120 monthly payments of the greater of: 50% of the Member's pension benefit at the time of their death, or a benefit based on 20 years of the Member's service.

DROP

- Eligibility: Members in active service who are retirement eligible may elect to enter the Deferred Retirement Option Plan (DROP).
- Distribution: The DROP account balance will be paid over the expected future lifetime of annuitants.
- Interest: Based on United States Department of Commerce Daily Treasury Yield Curve Rates for durations between 5 and 30 years; interest rate is based on the expected lifetime of the members at the time they retire. Interest is only paid on DROP account balances as of September 1, 2017.
- Maximum years of crediting: Once an active member reaches 10 years in DROP they will no longer have their pension benefit credited to their DROP account.

Cost of living adjustments (COLAs)

After the plan is 70% funded, the Board may grant an ad hoc COLA based on the actual market return over the prior five years less 5%, not to exceed 4% of the base benefit, if, after granting a COLA, the funded ratio on a market value of assets basis is no less than 70%.

Member contributions

13.5% of computation pay for all members

Section 4: Actuarial Valuation Basis

City contributions

The City contributions for Fiscal Years ending September 30, 2025 through 2054 are based on 30-year closed amortization amount with five-year step-up for the unfunded actuarial accrued liability, and administrative expenses as well as set normal cost ranges as a percentage of pay, determined based on projections as of January 1, 2023 calculated by a third-party. New amortization layers will be established for changes in the unfunded liability over the later of a closed 20-year period or January 1, 2053, but will not be greater than the amounts established based on the initial amortization schedule.

Forms of benefits

50% or 100% Joint and Survivor Pension

Changes in Plan Provisions

The following plan changes based on Article 6243a-1, as amended by House Bill 4034 (HB 4034) and effective September 1, 2023 are included for the first time in this valuation:

- For active members who pass away while in the line of duty, the surviving spouse benefit was increased to 100% of the member's accrued benefit. Further, for Group B members who began active service before March 1, 2011, the benefit multiplier was increased for service earned on and after September 1, 2017 from the 20 & Out Table 2 to 2.5% at all ages.
- For Group B members who began active service before March 1, 2011, the disability benefit multiplier was increased for service earned on and after September 1, 2017 from the 20 & Out Table 2 to 2.5% at all ages.

Section 5: GASB Information

Exhibit K: Net Pension Liability

Components of the Net Pension Liability	Current	Prior ¹
Measurement date and reporting date for the Plan under GASB 67	December 31, 2024	December 31, 2023
Total Pension Liability	\$5,566,762,524	5,307,255,422
Plan Fiduciary Net Position	2,011,422,373	1,934,816,560
Net Pension Liability	3,555,340,151	3,372,438,862
Plan Fiduciary Net Position as a percentage of the Total Pension Liability ²	36.13%	36.46%

Actuarial assumptions. The Total Pension Liability (TPL) as of December 31, 2024, which was determined based on the results of an actuarial valuation as of January 1, 2025, used the following actuarial assumptions, applied to all periods included in the measurement:

Assumption Type	Assumption
Wage inflation	3.50%
Salary increases	10.00% or 14.00% in 2025, varying by rank, based on the 2025 pay scales; thereafter, 3.50% to 10.00% ,varying by service, including inflation
Net investment rate of return	6.50%, net pension plan investment expense, including inflation

Detailed information regarding all actuarial assumptions can be found in Section 4.

¹ Revised subsequent to publication of the January 1, 2024 actuarial valuation report.

² These funded percentages are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.

Section 5: GASB Information

Exhibit L: Determination of discount rate and investment rates of return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation. The target allocation (approved by the Board) and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return ¹
Global Equity	54%	6.13%
Emerging Market Equity	4%	7.40%
Private Equity	6%	9.65%
Short-Term Investment Grade Bonds	6%	1.35%
Investment Grade Bonds	4%	1.90%
High Yield Bonds	4%	3.50%
Bank Loans	4%	3.10%
Emerging Markets Debt	3%	3.60%
Private Credit	4%	6.10%
Real Estate	5%	3.50%
Natural Resources	3%	9.85%
Cash	3%	1.10%
Total	100.0%	

Discount rate. The discount rates used to measure the Total Pension Liability (TPL) was 6.50%. Based on changes adopted by the Board, which includes the City's payment of the actuarial determined contribution, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL.

¹ The real rates of return are provided by Segal Marco Advisors and are net of inflation.

Section 5: GASB Information

Actuarial cost method: In accordance with GASB 67, the TPL for active members is valued as the total present value of benefits once they enter the DROP. For the funding valuation, the liability for these members accumulates from their entry age until they are assumed to leave active service.

Exhibit M: Discount rate sensitivity

The following presents the Net Pension Liability (NPL) of the Plan as of January 1, 2025, calculated using the discount rate of 6.50%, as well as what the System's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (5.50%) or 1-percentage-point higher (7.50%) than the current rate.

Item	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Net Pension Liability	\$4,242,187,644	\$3,555,340,151	\$2,985,477,360

Section 5: GASB Information

Exhibit N: Schedule of changes in Net Pension Liability

Components of the Net Pension Liability	Current	Prior
Measurement date and reporting date for the Plan under GASB 67	December 31, 2024	December 31, 2023
Total Pension Liability		
Service cost	\$80,814,499	\$80,051,163
Interest	338,949,208	335,597,503
Change of benefit terms	2,702,621	0
Differences between expected and actual experience	109,670,922	-19,707,728
Changes of assumptions	74,303,294	0
Benefit payments, including refunds of member contributions	-346,933,442	-343,345,713
Net change in Total Pension Liability	\$259,507,102	\$52,595,225
Total Pension Liability — beginning	5,307,255,422	5,254,660,197
Total Pension Liability — ending	\$5,566,762,524	\$5,307,255,422
Plan Fiduciary Net Position		
Contributions — employer	\$188,633,391	\$171,960,839
Contributions — employee	67,919,867	62,510,063
Net investment income	174,394,891	243,098,278
Benefit payments, including refunds of member contributions	-346,933,442	-343,345,713
Administrative expense	-7,408,894	-5,974,248
Other	0	0
Net change in Plan Fiduciary Net Position	\$76,605,813	\$128,249,219
Plan Fiduciary Net Position — beginning	1,934,816,560	1,806,567,341
Plan Fiduciary Net Position — ending	\$2,011,422,373	\$1,934,816,560

Section 5: GASB Information

Components of the Net Pension Liability	Current	Prior
Net Pension Liability		
Net Pension Liability – ending	\$3,555,340,151	\$3,372,438,862
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	36.13%	36.46%
Covered payroll ¹	\$503,931,046	\$469,275,612
Plan Net Pension Liability as percentage of covered payroll	705.52%	718.65%

Notes to Schedule:

- **Benefit changes:** The benefit changes in 2024 are based on Article 6243a-1, as amended by House Bill 4034 (HB 4034) and effective September 1, 2023. These include changes to the line of duty death benefit and the line of duty disability benefit.
- **Change of Assumptions:** The assumption changes in 2024 were based on the recommendations in the experience study for the period January 1, 2020 through December 31, 2024 and included changes to the salary scale, mortality rates, withdrawal rates, retirement rates, disability rates, and assumed spousal age. Additionally, the Ad Hoc COLA assumption was updated from beginning in 2073 to 2046.

¹ Covered payroll represents compensation earnable and pensionable compensation. Only compensation earnable and pensionable compensation that would possibly go into the determination of the retirement benefits are included.

Section 5: GASB Information

Exhibit O: Schedule of employer contributions

Fiscal Year Ended September 30	Actuarially Determined Contributions in Fiscal Year Ended September 30	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2025	\$217,612,884	\$204,888,932	\$12,723,952	\$503,931,046	40.66%

Notes to Schedule:

- **Methods and assumptions used to determine contribution rates for the City's fiscal year ended September 30, 2025:**
These are not the same assumptions used in the January 1, 2024 actuarial valuation or for the Total Pension Liability as measured as of December 31, 2023.
- **Valuation date:** Actuarially determined contribution is calculated using a January 1, 2024 valuation date as of the beginning of the prior year. The actuarially determined contribution for the City's fiscal year ended September 30, 2025 was calculated in the January 1, 2024 actuarial valuation, with an interest and timing adjustment assuming the contribution will be paid in the City's fiscal year beginning October 1, 2024 and ending September 30, 2025.
- **Actuarial cost method:** Entry age
- **Amortization method:** The Board adopted a Funding Agreement with the City of Dallas that was based on a methodology that established two amortization bases of specified amounts as of January 1, 2023. The first amortization base was in the amount of \$2,290,000,000 and is to be amortized over 30 years on a level percent of pay basis. The second amortization base was in the amount of \$988,028,785, with a five-year step up of the amortization payment, with the outstanding balance after five years to be amortized over a 25-year period on a level percent of pay basis. Beginning on January 1, 2024, each year's experience due to actuarial gains and losses or plan, assumption, or method changes are amortized over the amortization period remaining on the initial 2023 bases. Beginning in 2033, newly established bases will be set at a period of 20 years.
- **Remaining amortization period:** 29 years as of January 1, 2024
- **Asset valuation method:** Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
- **Investment rate of return:** 6.50%, including inflation, net of pension plan investment expense
- **Inflation rate:** 2.50%

Section 5: GASB Information

- **Projected salary increases:** Inflation plus merit increases; varying by group and year
- **Retirement rates:** Group-specific rates based on age
- **Mortality:**
 - **Pre-retirement:** Pub-2010 Public Safety Employee Amount-Weighted Mortality Table, set forward five years for males, projected generationally using Scale MP-2019
 - **Healthy annuitant:** Pub- 2010 Public safety Retiree Amount-Weighted Mortality Table, set back one year for females, projected generationally using Scale MP-2019
 - **Healthy contingent beneficiaries:** Pub-2010 Public Safety Contingent Survivor Amount-Weighted Mortality Table, set back one year for females, projected generationally using Scale MP-2019.
 - **Disabled:** Pub-2010 Public Safety Disabled Retiree Amount-Weighted Mortality Table, set forward four years for males and females, projected generationally using Scale MP-2019.
- **Other information:** See Section 4, Exhibit H of the January 1, 2024 actuarial valuation for a full outline of assumptions. See Exhibit K of this section for the history of changes to plan provisions and assumptions over the last two years.
 - **DROP utilization:** 0% of Police and Fire members are assumed to elect to enter DROP.
 - **Interest on DROP accounts:** Beginning January 1, 2018, 2.75% payable upon retirement on active account balances as of September 1, 2017.

Appendix A: Definition of Pension Terms

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

Term	Definition
Actuarial accrued liability for actives	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial accrued liability for retirees and beneficiaries	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants 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. 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., 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 actuarial liabilities that are larger than projected.
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	<p>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:</p> <p>Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)</p> <p>Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and</p> <p>Discounted according to an assumed rate (or rates) of return to reflect the time value of money.</p>

Appendix A: Definition of Pension Terms

Term	Definition
Actuarial present value of future 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 Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions 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, as well as Actuarially Determined Contributions.
Actuarial value of assets	The value of the Plan'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 Actuarially Determined Contribution.
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 Plan.
Actuarially determined contribution	The employer's 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 Unfunded Actuarial Accrued Liability. 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 Unfunded Actuarial Accrued Liability. 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 intended to pay off the Unfunded Actuarial Accrued Liability.

Appendix A: Definition of Pension Terms

Term	Definition
Assumptions or actuarial assumptions	<p>The estimates upon which the cost of the Plan is calculated, including:</p> <p>Investment return — the rate of investment yield that the Plan will earn over the long-term future;</p> <p>Mortality rates — the rate or probability of death at a given age for employees and retirees;</p> <p>Retirement rates — the rate or probability of retirement at a given age or service;</p> <p>Disability rates — the rate or probability of disability retirement at a given age;</p> <p>Withdrawal rates — the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;</p> <p>Salary increase rates — the rates of salary increase due to inflation, real wage growth and merit and promotion increases.</p>
Closed amortization period	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined benefit plan	A retirement plan in which benefits are defined by a formula based on the member's compensation, age 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 Plan 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 based on recommendations from the Actuary.
Funded ratio	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.
GASB 67 and GASB 68	Governmental Accounting Standards Board (GASB) 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.

Appendix A: Definition of Pension Terms

Term	Definition
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	The portion of the Actuarial Present Value of Future Benefits and expenses, if applicable, allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member 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 each future year in determining the Amortization Period.
Plan Fiduciary Net Position	Market value of assets.
Service costs	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
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 excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
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 Benefits is determined. The expected benefits to be paid in the future are discounted to this date.