The Police and Fire Retirement System of the City of Detroit

Annual Actuarial Valuation of Component I (Hybrid)

June 30, 2025



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January 12, 2026

Board of Trustees
The Police and Fire Retirement System
of the City of Detroit

Dear Board Members:

The results of the June 30, 2025 Annual Actuarial Valuation of Component I (Hybrid Plan) of the Police and Fire Retirement System (PFRS) of the City of Detroit are presented in this report.

Component II (Legacy Plan) benefits are the subject of a separate report.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the Retirement System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are:

- To provide an Actuarially Determined Employer Contribution (ADEC) rate for Fiscal Year 2027. This report includes calculations based upon the Board approved funding policy shown in the Appendix.
- To measure the System's funding progress.
- To provide a five-year funding projection. The five-year projection is to assist the Board with its duties related to Section 9.5 of the Plan.

This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different. In particular, the information provided in this report is not suitable for financial reporting in connection with GASB Statement Nos. 67 and 68. Such information is provided in a separate report.

The ADEC shown in this report are determined using the actuarial assumptions and methods disclosed in Section F of this report. Users of this report should be aware that contributing the amounts shown does not guarantee benefit security. This report includes risk metrics but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this Plan. A determination regarding whether or not the Plan sponsor is actually able to do so is outside our area of expertise, beyond the scope of the assignment, and was not performed.

This valuation was based upon records maintained and furnished by the Retirement System staff concerning active members, retirees and beneficiaries, and financial accounts as of the valuation date. Data was checked for year-to-year consistency, but was not audited by the actuary. We are not responsible for the completeness or accuracy of the data.

The assumptions used in the valuations concerning future experience are summarized in Section F of this report. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. The combined effect of the assumptions is expected to have no significant bias (i.e., not significantly optimistic or pessimistic). All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice.

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

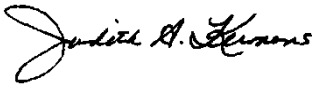
This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation, and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the Component I Plan of the Police and Fire Retirement System of the City of Detroit as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.



Judith A. Kermans, James R. Sparks and Kevin Noelke are Members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



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SECTION A

INTRODUCTION

Executive Summary

Valuation Date	June 30, 2025	June 30, 2024
Contributions for Fiscal Year Ending	June 30, 2027	June 30, 2026
Remaining Amortization Period Years	12	13
Employer Contributions		
UAAL Contribution (0% Minimum)	1.33%	2.60%
Employer Normal Cost Contribution	11.77%	11.74%
Total Employer Contribution %	**13.10%**	**14.34%**
Estimated Employer Contribution $	$ 33,064,341	$ 32,388,669
Member Contributions		
Average Member Contribution Rate	7.35%	7.26%
Estimated Member Contribution $	$ 18,551,367	$ 16,397,610
Membership		
Active Members (Excluding DROP)	3,282	3,025
DROP Members	120	120
Retirees and Beneficiaries	456	350
Post-2014 Pre-Conversion Duty Disability	107	110
Inactive, Nonretired Members	698	792
Total	4,663	4,397
Valuation Payroll (Excluding DROP)	$ 237,910,783	$ 212,896,977
Assets		
Pension Accumulation Fund	$ 352,731,300	$ 292,745,587
Employee Voluntary Contribution	10,873,137	5,454,201
Employee Mandatory Contribution	111,548,065	95,491,729
Rate Stabilization Fund (RSF)	-	-
Total Market Value of Assets (MVA)	475,152,502	393,691,517
Total Funding Value of Assets (FVA)	464,917,549	388,452,161
Return on Market Value of Assets	9.35%	9.19%
Return on Funding Value of Assets	8.25%	7.46%
Actuarial Information		
Total Normal Cost Rate	**19.12%**	**19.00%**
Actuarial Accrued Liability (AAL)	**$ 501,077,176**	**$ 447,694,119**
Unfunded Actuarial Accrued Liability (FVA Basis)	**$ 36,159,627**	**$ 59,241,958**
Funded Ratio (FVA Basis)	**92.78%**	**86.77%**
Unfunded Actuarial Accrued Liability (MVA Basis)	$ 25,924,674	$ 54,002,602
Funded Ratio (MVA Basis)	94.83%	87.94%
Risk Metrics		
Actuarial Accrued Liability / Payroll	2.1	2.1

Please see the comments of the report for important information regarding valuation results.

An estimate of the probability of future contributions being made was outside the scope of this project, not required by Actuarial Standards, and therefore, was not made.

Development of Employer Normal Cost Rate

	Contributions Expressed as a Percent of Payroll	
Valuation Date - June 30,	**2025**	**2024**
Normal Cost for Fiscal Year Ending June 30,	**2027**	**2026**
Normal Cost:		
Age & service allowances	11.70%	11.65%
Disability allowances	5.33%	5.26%
Death-in-service allowances	0.38%	0.38%
Administrative expenses	1.07%	1.07%
Refunds	0.64%	0.64%
Total Normal Cost	**19.12%**	**19.00%**
Average Member Contribution Rate*	7.35%	7.26%
Employer Normal Cost	**11.77%**	**11.74%**

* *Member contributions expected to be paid are a weighted average of 6% for those hired before July 1, 2014 and 8% for those hired after June 30, 2014.*

Actuarially Determined Employer Contribution (ADEC) for Fiscal Year Ending June 30, 2027

Development of FY 2027 Contributions		
As of June 30, 2025:		
Actuarial Accrued Liability (AAL)	$	501,077,176
Funding Value of Assets (FVA)		464,917,549
Unfunded Actuarial Accrued Liability (UAAL)	$	36,159,627
Rate Stabilization Fund (RSF)		-
UAAL + RSF	$	36,159,627
During Fiscal Year 2026:		
Assumed Employer Normal Cost		29,062,705
Assumed Employer Contribution		(35,139,898)
Interest at 6.75%		2,235,670
Projected UAAL as of June 30, 2026	$	32,318,104
Remaining Amortization Years		12
UAAL Contribution		1.33%
0% Minimum UAAL Contribution		1.33%
Normal Cost Contribution		11.77%
Actuarially Determined Employer Contribution (ADEC)		**13.10%**
Estimated Employer Contribution in Dollars	$	33,064,341
Estimated Member Contributions (for illustrative purposes only)		
Average Percent of Payroll		7.35%
Estimated Member Contribution in Dollars	$	18,551,367

The ADEC shown above should be applied to the active member payroll to determine the dollar contributions to be paid into the Retirement System on behalf of Component I for the 2027 Fiscal Year. However, such amounts should not be substantially less than the estimated contribution shown above. If contributions are not made until the end of the year, an interest adjustment should be made.

Contributions Comparative Schedule

Valuation Date June 30	Average Member Contribution Rate@	Employer Contribution for: Normal Cost	Employer Contribution for: Amount for UAAL	Total Employer Contribution	Amount for Rate Stabilization	Contributions Effective Plan Year	Employer Contribution Type#
2015	6.65%	11.02%	1.23%	12.25%	0.00%	2016/17	Mandated
2016	6.80%	11.06%	1.19%	12.25%	0.00%	2017/18	Mandated
2017	6.77%	11.52%	0.73%	12.25%	0.00%	2018/19	Mandated
2018	6.80%	11.57%	0.68%	12.25%	0.00%	2019/20	Mandated
2019	6.92%	11.87%	0.38%	12.25%	0.00%	2020/21	Mandated
2020	7.05%	11.68%	0.57%	12.25%	0.00%	2021/22	Mandated
2021^	7.06%	11.98%	0.27%	12.25%	0.00%	2022/23	Mandated
2022	6.99%	12.16%	0.39%	12.55%	N/A	2023/24	ADEC
2023	7.20%	11.98%	1.23%	13.21%	N/A	2024/25	ADEC
2024^^	7.26%	11.74%	2.60%	14.34%	N/A	2025/26	ADEC
2025	**7.35%**	**11.77%**	**1.33%**	**13.10%**	**N/A**	**2026/27**	**ADEC**

 # "Mandated" (Section 9.3(2)) at 12.25% of pay if specified by Plan document and POA. The Actuarial Determined Employer Contribution (ADEC) was first computed with the June 30, 2022 Actuarial Valuation to determine the contribution for the 2023/24 fiscal year.

@ Members hired before June 30, 2014 contribute 6%, members hired after June 30, 2014 contribute 8%.

^ After changes in actuarial assumptions and/or methods.

^^ After Plan Amendments.

Comments

Comment 1 – Plan Experience

Overall, plan experience was more favorable than assumed in the year ending June 30, 2025. The plan experienced a net gain of $19.7 million consisting of an asset gain (on a Funding Value of Asset basis) of $6.2 million and a net liability gain of $13.6 million. The $6.2 million investment gain includes phased-in investment gains from the 2024 and 2025 fiscal years, offset by a small phased-in loss from the 2023 fiscal year. The liability gains were driven in large part by more terminations than expected and fewer disablements than expected. Additional information about gains and losses is shown in Section B.

Comment 2 – Actuarial Assumptions

There were no changes in actuarial assumptions since the June 30, 2024 actuarial valuation. The next comprehensive review of experience is scheduled to occur prior to the June 30, 2026 actuarial valuation and will to cover the period from July 1, 2020 to June 30, 2025.

Comment 3 – Post Retirement Cost-of-Living-Adjustment (COLA)

This Plan has a post retirement COLA feature known as the Variable Pension Improvement Factor (VPIF). The VPIF can be granted only if the Section 9.5 five-year projection provided in Section B of this report shows the Plan funded status at 90% or greater at the end of the projection period based upon 6.75% future investment return. For purposes of Section 9.5 testing, the RSF is excluded from the assets. Actual versus expected (1.0%) VPIFs are treated as a gain or loss item for purposes of the valuation. A history of past VPIFs granted by the Board is shown in Section C. The current ADEC is calculated assuming a 1.0% VPIF will be paid each and every year in the future.

Comment 4 – Plan Option Factors

The Board adopted option factors for the Plan in 2017. It is our understanding that the new factors have been fully implemented as of this valuation.

An experience study is scheduled to be performed following the June 30, 2025 valuation. We recommenced the System consider whether the assumptions for optional forms of payment should be updated in conjunction with the next experience study.

Comment 4 – Funding

Mandatory employee contributions are initially set to 6.0% (8.0% if hired after June 30, 2014) of compensation but can be increased, if necessary, to maintain funding levels at 90% or above. Employer contributions were set at 12.25% of payroll through June 30, 2023. Employer contributions are actuarially determined beginning in the 2024 fiscal year (with the 2022 valuation year) to be the amount necessary to fund the Plan on an actuarial basis.

Comments

Comment 5 – DROP Cost Neutrality

Section 12.7(1) states that the DROP shall be effective only for as long as it is cost neutral to the City. Cost neutrality for this purpose is not defined. An assessment of the cost neutrality of the DROP was outside the scope of this valuation. We suggest the Board (or other appropriate party) define "cost neutral" for this purpose and establish a schedule for periodic review of the DROP plan meeting cost neutrality. We would be happy to work with the Board (or other appropriate party) to assist with this task.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability Mismatch Risk** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

Plan Risk Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk.

In our discussions with the Board and Investment Committee, we illustrated various investment return scenarios as part of the funding policy analysis. This type of analysis may also be considered a quantitative risk assessment. We recommend that the Board consider similar periodic analysis as appropriate under the Risk Controls of the newly approved funding policy.

The Board approved funding policy calls for illustrating the table of risk measures shown on the following pages. Please see the funding policy in the appendix for additional information. In the table on the following pages, the acronyms are as follows: FVA = Funding Value of Assets; MVA = Market Value of Assets; AAL = Actuarial Accrued liability; UAAL = Unfunded Actuarial Accrued Liability.

Funded Ratio

The funded ratio is the most widely known measure of a plan's financial strength, but the trend in the funded ratio is much more important than the absolute ratio. The funded ratio should trend to 100%. As it approaches 100%, it is important to re-evaluate the level of investment risk in the portfolio and potentially to re-evaluate the assumed rate of return.

Rate of Return, Geometric Average, and Standard Deviation

Investment return is probably the largest single risk that most systems face. The year-by-year return and the geometric average give an indicator of the realism of the System's assumed return.

Duration of the Present Value of Future Benefits (PVFB)

The duration is an approximate measure of sensitivity to changes in interest rates. The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, a duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Ratio of Unfunded Actuarial Accrued Liability to Payroll

The ratio of unfunded liability to payroll gives an indication of the plan's sensitivity to differences between assumed and actual experience related to the employer contributions. A value above approximately 300% or 400% may indicate high volatility relative to small gains and losses.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

Ratio of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

Ratio of Non-Investment Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, and stress tests. We can provide additional risk assessments at the Board's request.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

	2025	2024	2023	2022	2021	2020[3]	2019[3]
(i) Classic measures							
– Funded ratio							
MVA	94.8%	87.9%	96.0%	99.4%	114.3%	N/A	N/A
FVA	92.8%	86.8%	96.2%	99.4%	N/A	N/A	N/A
– UAAL amortization period	12	13	14	15			
– Portfolio rate of return							
MVA	9.35%	9.19%	6.39%	-1.54%	25.09%	-0.13%	2.37%
FVA	8.25%	7.46%	6.63%	N/A	N/A	N/A	N/A
– Geometric average portfolio rate of return[1]							
5-year							
MVA	9.36%	7.40%	6.02%	5.93%	8.55%	1.11%	2.37%
FVA	7.44%	7.04%	6.63%	N/A	N/A	N/A	N/A
10-year							
MVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
– Standard deviation of return[1]							
5-year							
MVA	9.68%	10.64%	10.85%	12.53%	13.90%	6.84%	7.74%
FVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10-year							
MVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FVA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(ii) Modified Duration of the PVFB	22.2	22.0	22.6	22.4	23.0	24.3	24.1
(iii) Total UAAL / Covered Payroll							
MVA	0.1	0.3	0.1	0.0	(0.2)	N/A	N/A
FVA	0.2	0.3	0.1	0.0	N/A	N/A	N/A
(iv) Total Assets / Covered Payroll							
MVA	2.0	1.8	1.6	1.6	1.6	1.2	1.1
FVA	2.0	1.8	1.6	1.6	1.5	1.3	1.1
(v) Total AAL / Covered Payroll	2.1	2.1	1.7	1.6	1.4	1.2	1.0
(vi) Non-Investment Cash flow / BOY MVA	10.8%	9.8%	12.8%	8.2%	13.6%	15.9%	21.6%
(vii) MVA / Benefit Payments	52.5	49.3	52.8	31.7	49.5	39.1	39.6
(viii) Solvency Liability ($ millions)[2]	$ 502.8	$ 500.3	$ 418.1	$ 355.0	$ 421.2	$ 277.3	

[1]These are developed prospectively from 2019 and consequently do not yet reflect full 5 or 10 years of experience.

[2]See discussion on the following pages.

[3]Results in the 2019 and 2020 column is based on a 0.5% VPIF assumption.

Low-Default-Risk Obligation Measure (Solvency Liability)

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the "Low-Default-Risk Obligation Measure" (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan**. The calculation and disclosure of this additional measure **is not intended to suggest that this is the "right" liability** measure for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.**

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the System is to finance each member's retirement benefits. To fulfill this objective, the discount rate that is used to value the accrued liabilities is set equal to the **expected return** on the System's diversified portfolio of assets (referred to sometimes as the investment return assumption). For the System, the investment return assumption is 6.75%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. The LDROM results presented in this report are based on the unit credit actuarial cost method and discount rates based upon the June 2025 Treasury Yield Curve Spot Rates (monthly average). The 1-, 5-, 10- and 30-year rates follow: 4.10%, 4.00%, 4.43% and 5.05%. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The funding policy includes solvency liability as part of the risk assessment. The solvency liability meets the criteria for LDROM disclosure. For purposes of solvency liability, the actuarial cost method has been changed from entry age normal to unit credit to reflect benefits accrued as of the valuation date with the following technical details:

- Accrued benefits as of the valuation date are based on applicable Normal Retirement multipliers times Average Final Compensation as of the valuation date times Credited Service as of the valuation date.
- The benefit payable under Ordinary Death Before Retirement were computed as though the member had retired the day before death, notwithstanding that the death was prior to the Normal Retirement Date, elected the Joint and 100% Option in favor of the spouse, and then died.
- Accrued benefits under Duty Disability were assumed to be payable upon becoming disabled.

Presented below are the actuarial accrued liability and the LDROM (Solvency Liability) as of June 30, 2025.

Valuation Accrued Liabilities	LDROM (Solvency Liability)
$ 501,077,176	$ 502,806,292

Low-Default-Risk Obligation Measure (Solvency Liability)

Commentary Regarding the LDROM

Some ways in which the LDROM can assist the Board of Trustees in a decision-making process include:

(1) It provides information to potentially allow for better risk management for the System;
(2) It places the appropriateness of potential employer contribution rate reductions or benefit enhancements in a better context; and
(3) It provides more complete information regarding the benefit security of the membership's benefits earned as of the measurement date.

Potentially Allows for Better Risk Management: A very useful risk metric to exhibit potential contribution rate volatility (or amortization period volatility for fixed rate plans) is the ratio of assets to payroll or AAL to payroll. How could we reduce that potential contribution rate volatility (or amortization period volatility for fixed rate plans)? The LDROM and liability driven investing (LDI) are closely related concepts.

Other than reducing benefits, all other things being equal, the only way to reduce that volatility is to immunize (i.e., LDI) a portion of the System's liability. This does not mean that the System needs to immunize all of the liability. For example, if they could immunize half of it, they could reduce the contribution rate volatility in half. This would require the actuary to use a cash flow matching method to value that portion of the liabilities. This means that the actuary would not use the System's investment return assumption for this portion of the liability, but the yield curve resulting from the fixed income portfolio that is being used to immunize the liability. The value of the assets (i.e., fixed income portfolio) and the value of the immunized liability would move in tandem with any changes (up or down) in future interest rates. The result being that the immunized portion of the System's liability would reduce the potential of producing new unfunded actuarial accrued liabilities. However, the fixed income portfolio would still have the minor potential for credit default risk.

Places the Appropriateness of Potential Employer Contribution Rate Reductions or Benefit Enhancements in a Better Context: Many PERS have adopted a funding policy. Many funding policies already take into account the System's funded ratio (based upon the AAL) when considering whether to allow for benefit enhancements or contribution rate reductions. For example, a System may not allow for a benefit enhancement if the funded ratio does not exceed a certain threshold. Similarly, a System may not allow for an employer contribution rate reduction in some circumstances. For example, a reduction to the employer normal cost contribution may not be allowed until the System reaches a funded ratio of 120%. Given the fact that most criteria are based upon the expectation of earning the investment return assumption, a System may want to consider extending these criteria to a funded ratio based upon the LDROM in addition to the AAL.

Provides more Complete Information Regarding the Benefit Security of the Membership's Benefits Earned as of the Measurement Date: Too often a high funded ratio (i.e., 100% funded) on an AAL basis is interpreted as benefit security for the participants. The fact that this funded ratio is based upon an expected measure is many times overlooked. If the AAL and LDROM measures are relatively close, then the System at least has the opportunity to make benefits payable in the future more secure.

Other Observations

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 6.75% on the funding value of assets), it is expected that:

1) The unfunded actuarial accrued liabilities will be fully amortized 15 years after June 30, 2023.
2) The funded status of the plan will increase gradually towards a 100% funded ratio; and
3) The unfunded accrued liability will decline gradually toward $0.

We have assessed that the Actuarially Determined Employer Contribution (ADEC) calculated under the funding policy in this report is reasonable. This assessment will be made each year with the determination based on the circumstances at that time and may or may not yield the same result.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the funding value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations; in other words, of transferring the obligations to an unrelated third party in an arm's length market value type transaction.
2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future administrative expense contributions.
3) The measurement would produce a different result if the market value of assets were used instead of the funding value of assets, unless the market value of assets is used in the measurement.

Limitations of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

Risks to Future Employer Contribution Requirements

There are ongoing risks to future employer contribution requirements to which the Retirement System is exposed, such as:

- Actual and Assumed Investment Rate of Return;
- Actual and Assumed Mortality Rates; and
- Amortization Policy.

Scenario Testing/Sensitivity Testing

If the Board would like to see additional projections, we would be happy to perform such projections.

SECTION B

FUNDING RESULTS

Actuarial Liabilities
as of June 30, 2025

Actuarial Present Value of	(1) Total Present Value	(2) Portion Covered by Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) – (2)
Age and service allowances based on total service likely to be rendered by present active members	$ 605,957,480	$ 255,507,156	$ 350,450,324
Disability benefits likely to be paid to present active members	138,682,613	131,386,085	7,296,528
Death-in-service benefits likely to be paid on behalf of present active members	12,818,713	9,562,138	3,256,575
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	55,956,267	49,106,805	6,849,462
Benefits attributed to voluntary member contributions	10,873,137	-	10,873,137
Benefits likely to be paid to vested inactive members	24,664,032	-	24,664,032
Benefits to be paid to members in the DROP, current retirees, beneficiaries, and future beneficiaries of current retirees	97,687,118	-	97,687,118
Total	**$ 946,639,360**	**$ 445,562,184**	**$ 501,077,176**
Funding Value of Assets (FVA)			$ 464,917,549
Unfunded Actuarial Accrued Liability (UAAL)			$ 36,159,627

Actuarial Balance Sheet

Assets and Present Value of Expected Future Contributions

A. Present Funding Value of Assets		
1. Net assets from System financial statements	$	475,152,502
2. Adjustment for Valuation Assets		(10,234,953)
3. Funding Value of Assets		464,917,549
B. Actuarial Present Value of Expected Future Employer Contributions		
1. For Normal Costs		257,549,970
2. For Rate Stabilization Fund		0
3. For Unfunded Actuarial Accrued Liability (UAAL)		36,159,627
4. Total		293,709,597
C. Actuarial Present Value of Expected Future Member Contributions		188,012,214
D. Total Present and Expected Future Resources	$	946,639,360

Present Value of Expected Future Benefit Payments

A. To DROP Members, Retirees and Beneficiaries	$	97,687,118
B. To Vested Terminated Members		24,664,032
C. To Present Active Members		
1. Allocated to service rendered prior to valuation date – Actuarial Accrued Liability		367,852,889
2. Allocated to service likely to be rendered after valuation date		445,562,184
3. Total		813,415,073
D. Voluntary Member Contributions		10,873,137
E. Rate Stabilization Fund		0
F. Total Actuarial Present Value of Expected Future Benefit Payments and Reserves	$	946,639,360

The above schedules exclude expected future contributions and expenditures for administrative expenses.

Development of Actuarial Gain or Loss

	Actuarial Accrued Liability (AAL) (A)	Funding Value of Assets (B)	Unfunded Actuarial Accrued Liability (C) = (A) - (B)
(1) Beginning of Year (BOY)	$ 447,694,119	$ 388,452,161	$ 59,241,958
(2) Normal Cost for Service Accruals*	39,317,601	N/A	39,317,601
(3) Normal Cost for Vol. Employee Contributions*	5,277,979	N/A	5,277,979
(4) Total Contributions	N/A	53,794,595	(53,794,595)
(5) Administrative Expenses	-	(2,179,170)	2,179,170
(6) Benefit Payments and Refunds	(9,055,317)	(9,055,317)	-
(7) Other	-	83,505	(83,505)
(8) Interest	31,418,837	27,659,743	3,759,094
(9) Expected End of Year Before Changes (1)+(2)+(3)+(4)+(5)+(6)+(7)+(8)	$ 514,653,219	$ 458,755,517	$ 55,897,702
(10) Changes Due to Plan Amendment	-	-	-
(11) Changes Due to Revised Assumptions	-	-	-
(12) Expected End of Year After Changes (9)+(10)+(11)	514,653,219	458,755,517	55,897,702
(13) Actual Value at End of Year	501,077,176	464,917,549	36,159,627
(14) Gain or Loss (12)-(13)	$ 13,576,043	$ (6,162,032)	$ 19,738,075
	Gain	Gain	Gain
(15) Percent of BOY AAL (14)/(1A)	3.0%	(1.4%)	4.4%

* *Normal Cost is based on the prior valuation and includes current year voluntary member contributions. The 2025 fiscal year normal cost includes a one-time $3,739,862 adjustment (positive normal cost) as a result of Police and Fire Retirement System contributions allocated to the General Retirement System during the 2024 fiscal year.*

Additional detail on the gains and losses is shown below:

Type of Risk Area	Gain (Loss) in Period: Totals ($ in millions)	Gain (Loss) in Period: Percent of Beginning of Year Liabilities #
Risks Related to Experience during the Year		
Economic Risk Areas:		
Investment Return (FVA)	6.2	1.4 %
Demographic Risk Areas:		
Active Experience/Other	13.0	2.9 %
Post-Retirement VPIF	0.0	0.0 %
Post-Retirement Mortality	0.6	0.1 %
Total Gain or (Loss) during Period (FVA Basis)	$19.7	4.4 %

 # Beginning of year liabilities were $447.7 million.

Active Experience is an estimate of the gain/loss attributable to the experience of members who were active at the beginning of the year (pay increases, retirements, withdrawals, etc.). Post-Retirement Mortality experience is an estimate of the gain/loss attributable to the mortality of retirees and beneficiaries in payment status at the beginning of the year. Other Experience includes all other gain/loss that occurred during the year including items such as: unexpected changes in data, inactive member experience, actual vs. expected benefit payments during the year, actual vs. expected VPIF increases, etc.

SECTION C

FIVE-YEAR FUNDED STATUS PROJECTION

Section 9.5, Fiscal Responsibility, of the Combined PFRS Plan contains several provisions for adjusting contributions and/or benefits to be determined based on a five-year projection of the funded status of the Plan. This section calls for two different funded status projection tests:

- Section 9.5(1) test for the funded status falling below 90%.
- Section 9.5(2) test for the funded status falling below 90% and remaining below 100%.

Section 9.5(3) specifies the interest rate to be used in the projections. Other methods and assumptions used in the projections are to be adopted by the Board based on the recommendation of the Investment Committee.

Projection Method:

We have been directed by the Board to use the following methods and assumptions (if applicable):

- Projections based on valuation assumptions except for those noted below.
- VPIF assumption is ½%.
- Transition Cost is netted out of the Actuarial Accrued Liability.
- The Transition Cost is based on a nine-year level dollar amortization of the initial Transition Cost amount which is calculated using a ½% VPIF.
- Projected assets exclude the projected value of the Rate Stabilization Fund.
- All future Employer contributions go to the Pension Accumulation Fund (PAF).
- The June 30, 2015 valuation generates the first test.
- There is a two-year delay between the valuation date and the VPIF determination date.
- The market value is projected using a 6.75% rate of return.
- Potential future arbitrage on the voluntary contribution reserve fund was not modeled. This assumption will be revisited if the voluntary contribution reserve fund becomes material.
- Each item in Section 9.5(2) will be added in the order listed until a threshold is reached.
- Projected contributions include an expected asset transfer from the Component II Annuity Savings Fund (ASF), equal to 1.50% of the projected ASF balances through June 30, 2024. This represents the difference between the assumed rate of return of 6.75% and the maximum interest rate that can be credited to the ASF accounts of 5.25%.
- 6% of payroll member contributions for members hired as of June 30, 2014. 8% for members hired after June 30, 2014.
- Employer contributions equal to the Actuarially Determined Employer Contributions in fiscal year 2024 and later.
- Component II ASF balances were assumed to be withdrawn as a level dollar amount over the next 10 years.
- Voluntary contributions and interest are not reflected.

Results to Determine if VPIF May Be Awarded

5-Year Projection Assuming 6.75% Investment Return in all Future Years - 0.5% VPIF

Valuation Date June 30	Fiscal Year June 30	A Total AAL (Net of Vol. Cont.)	B Assets* (Net of Vol. Cont. & RSF)	C = (B/A) Net Funded Ratio
2025	2026	$ 464,528,672	$ 464,279,365	100%
2026	2027	525,237,797	533,724,712	102%
2027	2028	587,415,467	602,752,453	103%
2028	2029	651,252,099	674,440,053	104%
2029	2030	716,944,006	749,025,672	104%
2030	2031	784,845,722	826,910,297	105%

* *Based on Market Value of Assets (MVA).*

Comment 1: As shown above, the Funded Ratio is above 90% by the end of the 5-year projection period. According to Section 9.5(1), the Board is not prohibited from awarding the VPIF (to any retiree) since the Funded Ratio is above 90%.

Comment 2: Projection results assuming a full 1.0% VPIF are shown below. For Section 9.5 projections, the current Board directions are to use a 1/2% VPIF assumption. The results below provide the Board with further information regarding risk when making decision regarding Section 9.5.

5-Year Projection Assuming 6.75% Investment Return in all Future Years - 1% VPIF

Valuation Date June 30	Fiscal Year June 30	A Total AAL (Net of Vol. Cont.)	B Assets* (Net of Vol. Cont. & RSF)	C = (B/A) Net Funded Ratio
2025	2026	$ 490,204,039	$ 464,279,365	95%
2026	2027	554,919,954	533,688,994	96%
2027	2028	621,392,818	602,628,886	97%
2028	2029	689,815,682	674,154,678	98%
2029	2030	760,387,128	748,480,650	98%
2030	2031	833,464,391	825,982,501	99%

* *Based on Market Value of Assets (MVA).*

Results to Determine if Remedial Action under Section 9.5(2) Shall Be Taken

Since the test required to determine if remedial action under Section 9.5(1) results in a Funded Status above 90% by the end of the 5-year projection, the test required to determine if remedial actions under Section 9.5(2) also results in a Funded Status above 90% by the end of the 5-year projection. **We believe this means that remedial actions under Section 9.5(2) are not required.**

History of Variable Pension Improvement Factor (VPIF) Granted to Retirees

History of VPIF Granted to Retirees

Plan Year Beginning July 1 of (1)	Actual (2)
2015	N/A
2016	0.0%
2017	1.0%
2018	1.0%
2019	1.0%
2020	1.0%
2021	1.0%
2022	1.0%
2023	1.0%
2024	1.0%
2025	1.0%
Average VPIF:	
Last five years:	1.00%
Last three years:	1.00%

The VPIF is assumed to be 1% for all future years for the determination of the ADEC**.**

Section 9.5 in its entirety is shown below:

Sec 9.5. Fiscal Responsibility: Benefit Reductions and Increased Funding Obligations

(1) To safeguard the long-term actuarial and financial integrity of the Retirement System, in the event the funding level of Component I of the Retirement System projected over a five-year period falls below ninety percent (90%), the Trustee may not award the variable Pension Improvement Factor (Escalator) described in Section 6.2 to any individual beginning with the Plan Year following the Plan Year in which such determination is made and continuing until the funding level is restored to not less than ninety percent (90%).

(2) In the event the funding level of the Retirement System projected over a five-year period falls below ninety percent (90%), the following remedial action shall be required in the order set forth below, beginning with the Plan Year following the Plan Year in which such determination is made and continuing until the funding level is projected to be one hundred percent (100%) on a market value basis within the next five years:

(a) The remedial action required in Section 9.5(1) shall be implemented or continued;
(b) All amounts credited to the Rate Stabilization Fund shall be transferred to the Pension Accumulation Fund for the purposes of funding benefits payable under the Retirement System;
(c) Mandatory Employee Contributions for active and new employees shall be increased by one percent (1%) for up to the next following five Plan Years;
(d) Mandatory Employee Contributions for active and new employees shall be increased by an additional one percent (1%) per year;
(e) Mandatory Employee Contributions for active and new employees shall be increased by an additional one percent (1%) per year;
(f) The Retirement Allowance payable to a Retiree shall not include the variable Pension Improvement Factor (Escalator) that was most recently paid to the Retiree on the date the funding level is projected to fall below ninety percent (90%);
(g) The Retirement Allowance payable to a Retiree shall not include the variable Pension Improvement Factor (Escalator) that was most recently added to the Member's Retirement Allowance for the Plan Year preceding the Plan Year referenced in paragraph (f) above;
(h) Mandatory Employee Contributions for active and new employees shall be increased by an additional one percent (1%) per year; and
(i) Contributions made to the Retirement System by the City shall be increased, consistent with applicable actuarial principles and the *Public Employee Retirement System Investment Act, as amended, MCL 38.1132 et seq*.

(3) For purposes of this Section 9.5, the "funding level" shall mean the ratio of the market value of the assets of Component I of the Retirement System to the actuarial accrued liability of Component I of the Retirement System. The actuarial accrued liability shall be calculated by the Plan's Actuary utilizing an interest rate assumption of six and three-quarters percent (6.75%) and other reasonable assumptions as directed by the Board upon the recommendation of the Investment Committee. The market value of assets shall be determined on the basis of a three-year look back period of smoothed investment returns.

SECTION D

FUND ASSETS

Statement of Plan Assets
(Assets at Market Value)

Asset Class	June 30, 2025	June 30, 2024
Cash and Cash Equivalents	$ 54,492,949	$ 37,491,049
Investments at fair value	416,727,700	352,380,228
Receivables	3,069,168	3,795,752
Cash and Investments held as collateral for securities lending	19,362,352	12,664,078
Capital Asset - Net	2,897,967	2,993,642
Accounts Payable	(21,397,634)	(15,633,232)
Total Market Value of Assets	**$ 475,152,502**	**$ 393,691,517**

Totals may not add due to rounding.

The above schedule shows results for the Hybrid (Component I) plan only**.** We understand that, for purposes of determining investment return, Hybrid and Legacy assets are comingled and that resulting investment return is prorated between the two plans proportionate to the total assets within each system.

Reconciliation of Plan Assets

	Fiscal Year Ending June 30, 2025					FYE June 30, 2024
	Voluntary Employee Contribution	Mandatory Employee Contribution	Pension Accumulation Fund	Rate Stabilization Fund	Total	Total
Market Value Beginning	$ 5,454,201	$ 95,491,729	$ 278,647,508	$ 14,098,079	$ 393,691,517	$ 329,599,406
Additions:						
Employer Contributions	-	-	31,389,198	-	31,389,198	26,739,022
Member Contributions	5,277,979	17,127,418	-	-	22,405,397	15,180,977
Investment Income - Net	338,727	-	38,478,645	-	38,817,372	31,775,980
Other Income	-	-	83,505	-	83,505	617,213
Transfers	(139,857)	-	14,237,936	(14,098,079)	-	-
Total	5,476,849	17,127,418	84,189,284	(14,098,079)	92,695,472	74,313,192
Deductions:						
Benefit Payments	-	-	7,926,322	-	7,926,322	7,035,525
Refund of Member Contributions	57,913	1,071,082	-	-	1,128,995	945,666
Administrative Expenses	-	-	2,179,170	-	2,179,170	2,239,890
Total	57,913	1,071,082	10,105,492	-	11,234,487	10,221,081
Market Value Ending	$ 10,873,137	$ 111,548,065	$ 352,731,300	$ -	$ 475,152,502	$ 393,691,517
Market Value Rate of Return	4.24%	0.00%	12.98%	0.00%	9.35%	9.19%

Funding Value of Assets

	2023	2024	2025	2026	2027
A. Funding Value Beginning of Year	$ 275,590,423	$ 330,306,828	$ 388,452,161		
B. Market Value End of Year	329,599,406	393,691,517	475,152,502		
C. Market Value Beginning of Year	275,590,423	329,599,406	393,691,517		
D. Contributions during Year:					
D1. City Contributions	22,291,713	26,739,022	31,389,198		
D2. Member Contributions	12,857,368	15,180,977	22,405,397		
D3. Other	8,482,713	617,213	83,505		
D4. Total	43,631,794	42,537,212	53,878,100		
E. Disbursements:					
E1. Benefits Paid during Year	4,046,935	7,035,525	7,926,322		
E2. Refunds	2,200,425	945,666	1,128,995		
E3. Administrative Expenses	2,107,276	2,239,890	2,179,170		
E4. Total	8,354,636	10,221,081	11,234,487		
F. Investment Income:					
F1. Average Funding Value: A + (D4 - E4) / 2	293,229,002	346,464,894	409,773,968		
F2. Assumed Rate	6.75%	6.75%	6.75%		
F3. Amount for Immediate Recognition: F1 X F2	19,792,958	23,386,380	27,659,743		
F4. Market Total: B - C - D4 + E4	18,731,825	31,775,980	38,817,372		
F5. Amount for Phased-In Recognition: F4-F3	(1,061,133)	8,389,600	11,157,629		
G. Phased-In Recognition of Investment Income:					
G1. Current Year: F5/3	(353,711)	2,796,533	3,719,210		
G2. 1st Prior Year	0	(353,711)	2,796,533	$ 3,719,210	
G3. 2nd Prior Year	0	0	(353,711)	2,796,534	$ 3,719,209
G4. Total Recognized Investment Gain	(353,711)	2,442,822	6,162,032	6,515,744	3,719,209
H. Total Interest Recognized - Current Year: F3 + G4	19,439,247	25,829,202	33,821,775		
I. Funding Value End of Year:					
I1. Preliminary Funding Value End of Year: A + D4 - E4 + H	330,306,828	388,452,161	464,917,549		
I2. Upper Corridor Limit 115% x B	379,039,317	452,745,245	546,425,377		
I3. Lower Corridor Limit 85% x B	280,159,495	334,637,789	403,879,627		
I4. **Funding Value End of Year**	**$ 330,306,828**	**$ 388,452,161**	**$ 464,917,549**		
J. Difference between Market & Funding Value: B - I4	(707,422)	5,239,356	10,234,953		
K. Recognized Rate of Return: H / F1	6.63%	7.46%	8.25%		
L. Market Rate of Return: F4 /(C +(D4-E4)/2)	6.39%	9.19%	9.35%		
M. Ratio of Funding Value to Market Value: I4 / B	100.21%	98.67%	97.85%		

The Funding Value of Assets recognizes assumed investment income fully each year. Differences between actual and assumed investment income are phased-in over a closed 3-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. The Funding Value of Assets is intended to be unbiased with respect to Market Value. At any time, it may be either greater or less than Market Value.

SECTION E

PARTICIPANT DATA

Summary of Participant Data as of June 30, 2025

Actives

A) Count reported in Active file	10,631
B) Duplicate Records	(14)
C) General Revenue Group	(7,286)
D) Hired after valuation date	-
E) No date of hire on file	-
F) No salary on file	(4)
G) Refunded Hybrid Mandatory Contribution	(41)
H) On Retiree File	(4)
I) Actives excluding DROP	3,282

Inactive Vested

A) Number of records reported on data file	4,461
B) Records on Retiree File	(8)
C) General Revenue Group	(3,379)
D) Zero Hybrid benefit service	(240)
E) Less than 10 years of Legacy plus Hybrid vesting service	(122)
F) Zero mandatory contribution balance	(5)
G) Terminated after 6/30/2025	(9)
H) Number of records to value	698

Retired

A) Number of Records reported on data file	20,210
B) Number of records not in P/F plan	(11,512)
C) Pre-Conversion Duty-Disability	(107)
D) Coded as Legacy Records	(8,015)
E) Records in DROP	(120)
F) Records with no current pension or annuity	-
G) Expired Dependent Child Benefit	-
H) Number of records valued	456

Notes:

Active Row B: It is our understanding that through the course of the year these members were terminated from either GRS or PFRS and are active in the other plan. This resulted in there being two records for these members. These people will only be included in their current reported revenue group.

Active Row C*:* Are records that were reported with a revenue group other than “7” (police) or “8” (fire).

Active Row G: It is our understanding that records who have refunded Hybrid Mandatory Contributions are no longer entitled to Hybrid Plan benefits. If they still have Legacy service, they are added to the Legacy Inactive rolls.

Inactive Row C*:* Are records that were reported with a revenue group other than “7” (police) or “8” (fire).

Inactive Row F: Assumed to have refunded and forfeited Hybrid defined benefit.

Reconciliation

	Active		Term. Vested	DROP		Retirees		Post-2014 Pre-Conversion Duty Disability		Totals
	Count	Pay	Count	Count	Annual Benefits	Count	Annual Benefits	Count	Annual Benefits	Count
2024	**3,025**	**$ 212,896,977**	**792**	**120**	**$ 974,580**	**350**	**$ 2,078,959**	**110**	**$ 4,264,721**	**4,397**
Change in Pay^/Pensions	N/A	17,822,897	N/A	N/A	22,527	N/A	58,523	N/A	(61,411)	
New	378	15,673,458	21							399
New Beneficiary						3	44,169	-	-	3
DROP	(10)	(858,878)	(9)	19	173,986					-
Retired/Duty-Death	(21)	(1,951,823)	(52)	(19)	(106,063)	102	639,251	-	-	10
Non-Duty Disabled	(2)	131,218				2	9,991			-
Duty Disabled	(2)	142,876	-					2	98,393	(2)
Assumed Death/Removals			(54)	-	-	(1)	(16,116)	(4)	(138,447)	(59)
Vested Term	-	-	-							-
Non-Vested Terminated	(86)	(5,945,942)								(86)
Rehired	-	-	-	-	-	-	-	-	-	-
Data Adjustment	-	-	-	-	-	-	-	(1)	(47,714)	-
2025	**3,282**	**$ 237,910,783**	**698**	**120**	**$ 1,065,030**	**456**	**$ 2,814,777**	**107**	**$ 4,115,543**	**4,662**

^ For the 2025 data, the pay provided was actual pay paid during the prior fiscal year. We annualized the provided payroll for new hires.

Notable Data Changes

The data adjustments relate to records where we could not specifically identify the activity during the year. 54 Terminated Vested members were valued last year but will not be valued this year because there is no record in this year's data. This, in effect, is assuming that these members refunded and forfeited their defined benefit. Similarly, 21 new Terminated Vested members were valued this year but not in last year's valuation.

Data Approximations and Assumptions

As part of our review of the data received from the System, we discussed questionable or missing data with System staff and developed approximations and assumptions in order to perform the valuation. We provided System staff with a letter dated December 16, 2025 with additional information regarding data reconciliation, processing instructions, and assumptions regarding unresolved issues. Note, that the letter disclosed our remaining data processing procedures and assumptions and details our reconciliation and final valuation data. System staff has approved the detail and final data disclosed in that letter.

The purpose of this section in this report is to summarize any unresolved concerns about questionable data that are relevant and could have a significant effect on the valuation as disclosed in that letter. This summary also discusses any significant steps we have taken to improve the data due to identifying questionable data values or relationships, significant judgments, or assumptions we have applied to the data.

Active

These records are reported in the Excel data file titled "2025 Act Val Active.xlsx."

This year's active data file provided 2014 class code information. This information was previously carried over from prior valuations. Eligibility for 20 & Out was determined by using the class code in 2014 as provided in the current data set in the Legacy plan.

Inactive Vested

These records are reported in the Excel data file titled "2025 Act Val Vested.xlsx."

As part of the processing of deferred member data, in cases where the reported frozen AFC was not provided or appeared unreasonably low (less than $1,000), $52,000 was used. Members with vesting service of less than 8 years (Legacy plus Hybrid) were assumed to be non-vested and were not valued.

Data Approximations and Assumptions – (Continued)

Retired Members, Beneficiaries and DROP Members

These records are reported in the Excel data file titled "2025 Act Val Retired.xlsx." This file is used in conjunction with information from the data provider (class code and agency).

Adjustment assumptions include:

- In cases where the benefit is identified to be a joint and survivor benefit and a beneficiary is not listed in the data, it was assumed that male spouses were 3 years older than females;
- Benefits for dependent children are assumed to cease at age 21; and
- For non-converted duty disability members reported in the Hybrid data:
    - Converted benefits are assumed to commence at age 65;
    - Hybrid service was projected from June 30, 2014 to age 65. This service was limited to ensure that total Legacy and Hybrid service would not be greater than 25 years; and
    - Computed AFC by using the pre-conversion benefit currently being paid divided by the appropriate pre-conversion multiplier (66 2/3% or 50%).

Post-2014 Pre-Conversion Duty Disability are members that were reported as duty disabled after June 30, 2014 and have not yet converted. In the data, they are reported as Component I (Hybrid) members. We have valued the pre-conversion benefit out of the Component I (Hybrid) plan and estimated the post-conversion benefit payable out of Component I (Hybrid) and Component II (Legacy). Post-conversion benefits were calculated by using:

- Estimated benefit service that will be attributable to each plan upon conversion. The service on the file is service accrued from date of hire to the date of retirement (disability). The date of retirement and reported service is used to:
    - Calculate Hybrid benefit service which is the amount of service accruing after 2014 to age 65. This service was limited to ensure that total Legacy and Hybrid service would not be greater than 25 years; and
    - Calculate Legacy benefit service which is frozen as of 2014.
- Estimated AFC which is determined through the current benefit:
    - 50% of AFC is payable if the member has more than 25 years of service; and
    - 66 2/3% of AFC is payable if the member has less than 25 years of service.

Active Members June 30, 2025
by Attained Age and Years of Eligibility Service

Police Members

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll *
Under 20	18							18	$ 786,840
20-24	253	6						259	14,255,193
25-29	315	143						458	30,503,577
30-34	220	226	25					471	34,163,771
35-39	130	114	37	19				300	22,396,609
40-44	33	46	27	56	26	1		189	15,928,283
45-49	14	15	11	38	68	51		197	18,065,306
50-54	7	3	5	24	40	88	4	171	16,294,390
55-59	1		5	15	26	42	9	98	9,220,386
60-64	1		2	3	10	14	4	34	2,876,334
65-69				1	2	3		6	441,970
70-74							1	1	109,750
Totals	**992**	**553**	**112**	**156**	**172**	**199**	**18**	**2,202**	**$165,042,409**

Fire Members

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll *
Under 20	1							1	$ 39,369
20-24	77	1						78	3,356,082
25-29	167	24	2					193	10,209,770
30-34	106	52	24					182	11,184,998
35-39	90	48	42	4				184	12,017,129
40-44	34	17	34	11	10			106	7,459,197
45-49	12	8	14	21	31	34		120	9,473,386
50-54	6	3	8	10	42	51	12	132	11,540,770
55-59		1	3	9	14	35	19	81	7,277,196
60-64						1	2	3	310,477
Totals	**493**	**154**	**127**	**55**	**97**	**121**	**33**	**1,080**	**$72,868,374**

** Excluding DROP members.*

Total Active Members June 30, 2025
by Attained Age and Years of Eligibility Service

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll ^
Under 20	19							19	$ 826,209
20-24	330	7						337	17,611,275
25-29	482	167	2					651	40,713,347
30-34	326	278	49					653	45,348,769
35-39	220	162	79	23				484	34,413,738
40-44	67	63	61	67	36	1		295	23,387,480
45-49	26	23	25	59	99	85		317	27,538,692
50-54	13	6	13	34	82	139	16	303	27,835,160
55-59	1	1	8	24	40	77	28	179	16,497,582
60-64	1		2	3	10	15	6	37	3,186,811
65-69				1	2	3		6	441,970
70-74							1	1	109,750
Totals	**1,485**	**707**	**239**	**211**	**269**	**320**	**51**	**3,282**	**$237,910,783**

Summary

	DPOA	LSA	Fire	6/30/2025 Totals	6/30/2024 Totals
Number	1,638	564	1,080	3,282	3,025
% Change in active members from prior year	9.8 %	7.8 %	6.9 %	8.5 %	10.7 %
Annual payroll^ ($ millions)	$109.9	$55.2	$72.9	$237.9	$212.9
Average pay	$67,069	$97,844	$67,471	$72,490	$70,379
% Change in average pay from prior year	2.3 %	3.3 %	4.0 %	3.0 %	(5.7)%
Average age	32.8	44.6	38.2	36.6	36.9
Average benefit service	4.6	10.0	6.3	6.1	5.8
Average eligibility service*	6.0	18.1	10.3	9.5	9.9

^ *Excluding DROP members. Pay provided was actual pay paid during the prior fiscal year. The provided payroll was annualized for new hires.*

* *Hybrid service plus legacy service.*

Historical Summary of Active Member Data

Valuation	Active Members		Valuation Payroll*		Average Salary		Average (in Years)		
Date	No.	% Increase	$ Amount	% Increase	$ Amount	% Increase	Age	Service	Entry Age
2014	2,608	N/A	$ 132,566,687	N/A	$ 50,831	N/A	41.0	14.2	26.8
2015	2,484	(4.8)%	131,695,469	(0.7)%	53,017	4.3%	41.0	14.2	26.8
2016	2,483	(0.0)%	128,837,649	(2.2)%	51,888	(2.1)%	40.6	13.8	26.8
2017	2,523	1.6%	141,225,328	9.6%	55,975	7.9%	39.1	12.5	26.6
2018	2,575	2.1%	146,689,948	3.9%	56,967	1.8%	38.4	12.0	26.5
2019	2,488	(3.4)%	150,041,943	2.3%	60,306	5.9%	38.0	11.7	26.3
2020	2,559	2.9%	153,055,458	2.0%	59,811	(0.8)%	37.3	11.1	26.3
2021	2,551	(0.3)%	158,718,175	3.7%	62,218	4.0%	37.0	10.6	26.4
2022	2,581	1.2%	168,385,617	6.1%	65,240	4.9%	37.4	10.7	26.7
2023	2,732	5.9%	203,829,938	21.0%	74,608	14.4%	37.2	10.4	26.8
2024	3,025	10.7%	212,896,977	4.4%	70,379	(5.7)%	36.9	9.9	27.0
2025	3,282	8.5%	237,910,783	11.7%	72,490	3.0%	36.6	9.5	27.1

* *For the 2024 valuation and thereafter, pay provided is actual pay paid during the prior fiscal year. We annualized the provided payroll for new hires. Prior to 2024, data was reported as a prospective annualized rate of pay.*

Summary of Retiree and Inactive Data

Retirees

	Police	Fire	6/30/2025 Totals	6/30/2024 Totals
Number	288	168	456	350
Annual benefits including annuities as reported	$ 1,848,348	$ 993,103	$ 2,841,451	$ 2,105,633
Average benefits as reported	$ 6,418	$ 5,911	$ 6,231	$ 6,016
% Change in average benefit from prior year	2.1%	6.4%	3.6%	-3.5%

Inactive Vested Members

	Police	Fire	6/30/2025 Total	6/30/2024 Total
Number	652	46	698	792
Average AFC	$ 55,742	$ 56,108	$ 55,766	$ 62,601
Average service	3.8	3.8	3.8	3.7
Annual benefits (estimated)	$ 2,915,274	$ 208,736	$ 3,124,010	$ 3,865,233
Average benefits (estimated)	$ 4,471	$ 4,538	$ 4,476	$ 4,880
% Change in average Service	1.1%	27.9%	2.9%	-4.2%
% Change in average AFC	-11.1%	-9.1%	-10.9%	3.7%

DROP Members

	Police	Fire	6/30/2025 Totals	6/30/2024 Totals
Number	91	29	120	120
Annual benefits as reported	$ 689,754	$ 375,276	$ 1,065,030	$ 974,580
Average benefits as reported	$ 7,580	$ 12,941	$ 8,875	$ 8,122
% Change in average benefit from prior year	0.9%	19.3%	9.3%	3.8%

Post-2014 Pre-Conversion Duty Disability

	Police	Fire	6/30/2025 Totals	6/30/2024 Totals
Number	74	33	107	110
Annual benefits as reported	$ 2,863,129	$ 1,252,414	$ 4,115,543	$ 4,264,721
Average benefits as reported	$ 38,691	$ 37,952	$ 38,463	$ 38,770
Annual post-conversion benefits (estimated)	$ 1,679,887	$ 681,455	$ 2,361,342	$ 2,461,271
Average post-conversion benefits (estimated)	$ 22,701	$ 20,650	$ 22,069	$ 22,375
% Change in average post-conversion benefit	0.3%	-4.8%	-1.4%	-2.9%

Comparison of Valued Benefits with Actual Payments

	Retirees and Beneficiaries	DROP*	Post-2014 Pre-Conversion Duty Disability	Total	Benefits Paid FYE 2025
Count	456	120	107	683	
Annual Benefits	$ 2,841,451	$ 905,275	$ 4,115,543	$ 7,862,269	$ 7,926,322

* *Includes reduction for 75%/85% of benefit payable during DROP.*

Summary of Membership Data by Category (Excluding Disability Retirees)

	June 30, 2025	June 30, 2024
Active Members (Excluding DROP)		
Number	3,282	3,025
Average age (years)	36.6	36.9
Average service (years)	9.5	9.9
Average salary	$ 72,490	$ 70,379
Total payroll supplied, annualized	$ 237,910,783	$ 212,896,977
Members in DROP		
Number	120	120
Average age (years)	57.7	57.1
Total annual benefits	$ 1,065,030	$ 974,580
Average annual benefit	$ 8,875	$ 8,122
Vested Inactive Members		
Number	698	792
Average age (years)	52.6	52.3
Total annual deferred benefits	$ 3,124,010	$ 3,865,233
Average annual deferred benefit	$ 4,476	$ 4,880
Service Retirees		
Number	417	318
Average age (years)	58.7	59.3
Total annual benefits	$ 2,285,312	$ 1,648,528
Average annual benefit	$ 5,480	$ 5,184
Beneficiaries (Including Death in Service)		
Number	19	16
Average age (years)	38.6	35.4
Total annual benefits	$ 232,128	$ 186,233
Average annual benefit	$ 12,217	$ 11,640

Summary of Membership Data by Category
(Disability Retirees)

	June 30, 2025	June 30, 2024
Post-2014 Pre-Conversion Duty Disability		
Number	107	110
Average age (years)	50.3	49.7
Total annual benefits (pre-conversion)	$ 4,115,543	$ 4,264,721
Average annual benefit (pre-conversion)	$ 38,463	$ 38,770
Total annual benefits (post-conversion)	$ 2,361,342	$ 2,461,271
Average annual benefit (post-conversion)	$ 22,069	$ 22,375
Other Disability Retirees		
Number	20	16
Average age (years)	58.1	55.2
Total annual benefits	$ 324,012	$ 270,872
Average annual benefit	$ 16,201	$ 16,929

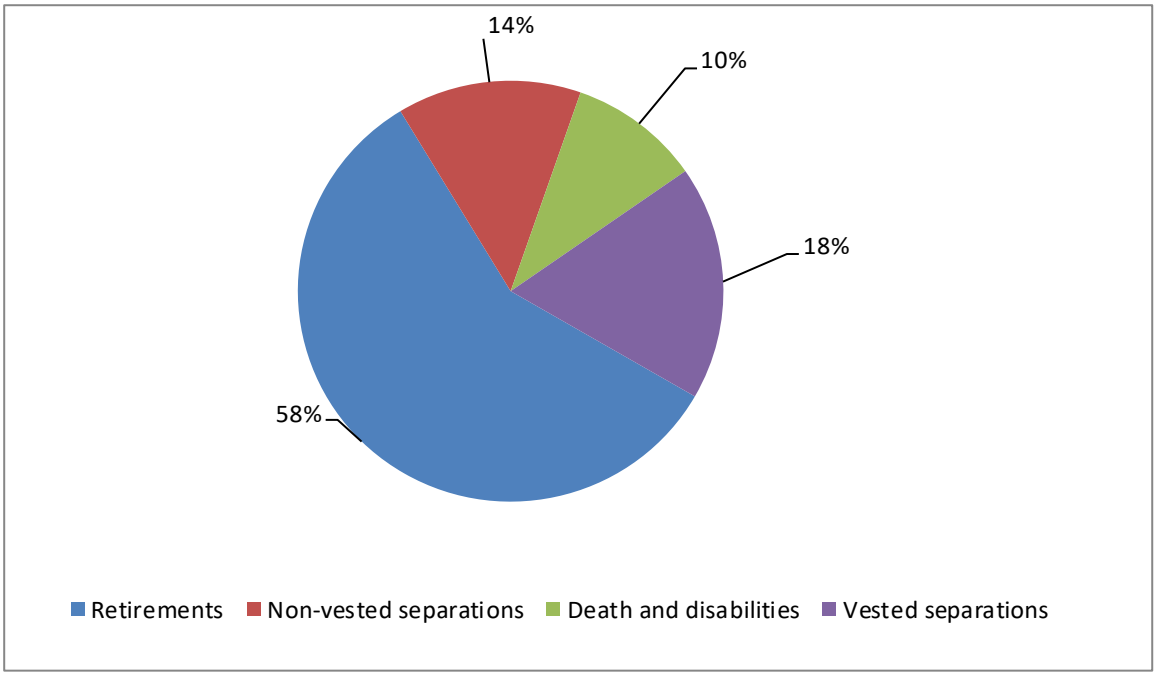
Comparative Statement of Annual Retirement Allowances Being Paid to Component I Retirees and Beneficiaries (Excluding DROP Members and Pre-Conversion Duty Disability)

June 30	Number Retired	Current Allowances Total^	Current Allowances Average
2015*	67	N/A	N/A
2016	44	$ 34,901	$ 793
2017	63	81,742	1,297
2018	89	193,240	2,171
2019	116	339,711	2,929
2020	156	454,594	2,914
2021	183	616,523	3,369
2022	257	1,505,128	5,857
2023	296	1,819,521	6,147
2024	350	2,078,959	5,940
2025	456	2,814,777	6,173

** Hybrid retiree benefits were not made available in 2015.*

^ Excludes annuitized portion of member balances.

Expected Terminations from Active Employment for Current Active Members



The chart above shows the expected future development of the present population in simplified terms. The Retirement System presently covers 3,282 active members. Eventually, 449 members are expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. 2,519 members are expected to receive monthly retirement benefits either by retiring directly from active service (including DROP), or by retiring from vested deferred status. 314 members are expected to become disabled or die in service. Vested Separations may include members eligible to retire in the Component II (Legacy) plan but not yet eligible to retire in this Component I (Hybrid) plan. A detailed discussion on how members eligible to retire in Component II (Legacy) but not eligible to retire in Component I (Hybrid) are treated is included in Section F of this report.

SECTION F

METHODS AND ASSUMPTIONS

Funding Methods

The entry age actuarial cost method was used in determining liabilities and normal cost as prescribed by Section 9.3(1) of the Combined PFRS Plan. Under this method, each individual's normal cost is determined as a level percent of pay based on a replacement life normal cost. The Normal Cost for each member is based on the Component I benefits and eligibilities applicable to that member and is determined to be the level percent of payroll from hire date to the age of last decrement or DROP necessary to fund the benefits. This method is based on the objective of the Plan to separately fund Transition Cost and future accruals. The application of this method differs for funding and accounting.

A Level Percent of Payroll amortization method is used to systematically eliminate (pay off) the Unfunded Actuarial Accrued Liability (UAAL) over a closed 15-year period from July 1, 2023.

Summary of Assumptions and Methods Used for Actuarial Valuations Adopted by Board of Trustees

All demographic assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on experience studies where noted.

Economic Assumptions

The investment return rate used in the valuation was 6.75% per year, compounded annually (net after investment expenses). This assumption is set by the Board.

Actuarial Assumptions
The assumptions and methods are those adopted by the Board.

The investment return rate used was 6.75% per year, compounded annually (net after investment expenses).

Pay increase assumptions for individual active members are shown on the following pages. Part of the assumption for each age is for a merit and/or seniority increase, and the other recognizes wage inflation.

Wage inflation is assumed to be 3.0% per year. The rationale is based on the 2015-2020 Experience Study.

Price inflation is not directly used in the valuation. For purposes of assessing the reasonableness of the assumed rate of return we assumed price inflation of 2.50% per year. The rationale is based on the 2015-2020 Experience Study.

Administrative expenses assumed to be 1.07% of payroll. The rationale is based on the 2015-2020 Experience Study.

Non-Economic Assumptions

The mortality table used to measure healthy retired life mortality is the PubS-2010 Public Safety Retiree table for males and females with male rates multiplied by 115% and female rates multiplied by 125%. The mortality table used to measure disabled retired life mortality is the PubS-2010 Public Safety Disabled Retiree table for males and females with male rates multiplied by 114%. The mortality table used to measure pre-retirement life mortality is the PubS-2010 Public Safety Employee table for males and females with 50% of deaths assumed to be duty related. The tables are projected to be fully generational, based on the two-dimensional, sex distinct mortality improvement scale MP-2021. The rationale is based on the 2015-2020 Experience Study.

The probabilities of age/service retirement for members eligible to retire are shown on the following pages. The rationale is based on the 2015-2020 Experience Study.

The probabilities of separation from service are shown for sample ages on the following pages. The rationale is based on the 2015-2020 Experience Study.

Salary Adjustment Rates

Service	Salary Increase Assumptions for an Individual Member: Merit & Seniority	Base (Economic)	Increase Next Year
1	10.00%	3.00%	13.00%
2	9.00%	3.00%	12.00%
3	8.00%	3.00%	11.00%
4	7.00%	3.00%	10.00%
5	6.00%	3.00%	9.00%
6	5.00%	3.00%	8.00%
7	4.00%	3.00%	7.00%
8	3.30%	3.00%	6.30%
9	2.70%	3.00%	5.70%
10	1.90%	3.00%	4.90%
11	1.30%	3.00%	4.30%
12+	1.00%	3.00%	4.00%

The rationale is based on the 2015-2020 Experience Study.

Single Life Retirement Values
Based on PubS-2010
115% of Male Rates / 125% of Female Rates
Using Projection Scale MP-2021

Sample Attained Ages in 2025	Future Life Expectancy (Years): Males	Females
45	39.61	40.96
50	34.50	35.77
55	29.47	30.70
60	24.62	25.84
65	20.06	21.27
70	15.84	16.99
75	12.02	13.06
80	8.70	9.62

Probabilities of Service Retirement/DROP

Age	Percent of Eligible Active Members Retiring or Entering DROP Within Next Year	
	Police	Fire
35	20%	15%
36	20%	15%
37	20%	15%
38	20%	15%
39	20%	15%
40	20%	15%
41	20%	15%
42	20%	15%
43	20%	15%
44	20%	15%
45	20%	15%
46	20%	15%
47	20%	15%
48	20%	15%
49	20%	15%
50	30%	20%
51	30%	20%
52	30%	20%
53	30%	20%
54	30%	20%
55	30%	20%
56	30%	20%
57	30%	20%
58	30%	20%
59	30%	20%
60	30%	100%
61	30%	100%
62	30%	100%
63	30%	100%
64	30%	100%
65	100%	100%

Police members eligible for retirement under 20 & Out with at least 10 years of Component II (Legacy) benefit service are assumed to retire or enter DROP while eligible for Component II (Legacy) normal retirement. These members are assumed to have 40% probability of retiring or entering DROP during the first year of eligibility. All other members are assumed to retire or enter DROP while eligible for Component I (Hybrid) normal retirement only. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

Effective July 1, 2024, for members hired before July 1, 2014 and active on June 30, 2024, members are eligible to retire upon attaining age 25 or more years of Credited Service (including prior service) regardless of age. We have modified the above assumptions for incidence of normal retirement to include retirement probabilities for Fire members at earlier ages in order to recognize the removal of the age requirement for normal retirement eligibility.

Probabilities of Separation

Sample Ages	Years of Service	% of Active Members Withdrawing within Next Year	
		Police	Fire
ALL	0	11.00%	5.00%
	1	9.00%	3.00%
	2	7.50%	3.00%
	3	6.25%	2.50%
	4	5.50%	2.50%
25	5 & Over	5.50%	2.50%
30		4.95%	2.50%
35		3.45%	2.50%
40		2.55%	2.50%
45		2.25%	2.50%
50		1.65%	2.50%
55		1.20%	2.50%
60		1.20%	2.50%

The rationale is based on the 2015-2020 Experience Study.

Sample Ages	% of Active Members Becoming Disabled within Next Year	
	Ordinary	Duty
25	0.05%	0.28%
30	0.05%	0.28%
35	0.08%	0.48%
40	0.11%	0.62%
45	0.16%	0.89%
50	0.21%	1.17%
55	0.21%	1.17%
60	0.21%	1.17%

The rationale is based on the 2015-2020 Experience Study.

Miscellaneous and Technical Assumptions
June 30, 2025

Average Final Compensation (AFC):	AFC is estimated by assuming the payroll provided in the valuation will increase at the pay-increase rate. We understand that the payroll provided for the valuation is consistent with the definition of AFC.
Class Codes / Bargaining Unit:	For valuation purposes, members are categorized as DPOA, DFFA, DPLSA, or DPCOA based on bargaining units provided by the Retirement System and are primarily used in the valuation to determine deferred retirement commencement.
Data Adjustments:	Assumptions regarding incomplete or missing data are reviewed annually with the System and adjusted as directed by the System.
Decrement Operation:	Ordinary disability and mortality decrements do not operate during the first five years of service. Disability and withdrawal do not operate during retirement eligibility.
Decrement Timing:	Decrements are assumed to occur mid-year.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Deferred Vested Benefit Commencement Age:	Members are assumed to commence benefits at the age in which they are first eligible for unreduced benefits.
Disability Load:	Duty Disability benefits were increased by 2.0% to account for the Death While Disabled provision based on an analysis of the estimated impact for a sample set of individuals.
Disability Change Age:	The duty disability benefit is assumed to change at the earlier of age 65 or the time the member would have had 25 years of credited service (including prior service). The benefit at change age was assumed to be 2.0% times final compensation times projected benefit service.

DROP Assumption: Members are assumed to retire or DROP based on assumed rates.

For Police members eligible for a maximum DROP period of 10 years, 75% of eligible members are assumed to enter the DROP and remain in the DROP for seven years.

For Police members eligible for a maximum DROP period of 15 years, 75% of eligible members are assumed to enter the DROP and remain in the DROP for nine years.

For Fire members, 60% of eligible members are assumed to enter the DROP and remain in the DROP for five years.

Employer contributions are assumed not to be made on DROP payroll. Expected benefits paid into DROP contributions are discounted at the assumed rate of return for valuation purposes. Balances for current DROP participants are held outside of system assets and are excluded from the valuation.

Members in the Component II (Legacy) DROP as of June 30, 2014 are excluded from the Component I (Hybrid) valuation.

DROP Cost Neutrality: An assessment of the cost neutrality of the DROP was outside the scope of this valuation.

Duty Disability Benefits: The Police and Fire Retirement System Combined Plan provides disability benefits for both Component I (Hybrid) and Component II (Legacy) members. Our understanding of the Component II (Legacy) freeze as it relates to duty disability benefits was that the only benefit payable from Component II (Legacy) would be the frozen accrued benefit, payable at the time of conversion to normal retirement (for members becoming disabled after 6/30/2014) and that any benefits payable during the period of disability would be paid from Component I (Hybrid).

We have valued the pre-conversion duty disability benefit in a manner consistent with the plan provision (paid out of Component I (Hybrid)). We understand that the System is in the process of moving to a new data system and expect this issue to be corrected once the new data system is in place.

For current duty disability retirees that became disabled after June 30, 2014, we have estimated the amount that will be paid by Component I (Hybrid) and Component II (Legacy) upon conversion.

For future retirees, duty disability retirement benefits prior to age 65 are assumed to be paid from Component I (Hybrid).

Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date of decrement.
Forfeiture Assumption:	It is assumed that 0% of members will elect to forfeit their benefit.
Form of Payment:	No adjustment has been made for alternate forms of payment elections.
Incidence of Contributions:	Employer contributions are assumed to occur quarterly.
IRC Section 401(a)(17) Limit:	It is assumed all of the member salary provided falls below the current 401(a)(17) limit.
IRC Section 401(h) Limit:	We did not test for the 401(h) limit on employer contributions for medical benefits. No employer contributions are anticipated in this valuation.
IRC Section 415 Limit:	We assumed that no benefits will be limited by IRC Section 415. The limit is assumed to grow with wage inflation.
Mandatory Retirement Age:	Currently most members of the DPFRS are subject to a mandatory retirement age of 60. We have assumed employment would end at age 60 for Fire members regardless of the length of their DROP participation at that age. We understand that the mandatory retirement age is currently not enforced for Police members and have assumed the mandatory retirement age is not in effect for Police members.
Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. This assumption accounts for potential dependent children/dependent parent death benefits. No other assumption is made for surviving children/dependent parents. Male spouses are assumed to be three years older than female spouses.
New Entrant Assumption:	New entrants are assumed to replace the current workforce as members separate from service under current valuation assumptions. Total payroll is expected to grow with wage inflation.
Pay Increase Timing:	Beginning of (Fiscal) year. Reported pays represent amounts paid to members during the prior fiscal year.
Pop-Up Benefits:	For current retirees with a pop-up benefit, the value of the pop-up was estimated by valuing a non-pop-up option and increasing the associated liabilities by 1%.
Post-Retirement COLA / Variable Pension Improvement Factor (VPIF):	Unless stated otherwise, liabilities in this report are based on an assumed average 1.0% future VPIF.

Rate Stabilization Fund (RSF):	The plan document does not provide specific direction regarding how the RSF is considered in the valuation. We currently treat the RSF (if any) in the following manner (unless specifically stated otherwise): • For purposes of determining a funded ratio in the funding valuation (other than with regard to the Section 9.5 testing), the Rate Stabilization Fund (RSF) is included in the assets; • For purposes of determining contributions starting in FY 2024, we exclude the RSF from the assets (thereby calculating a higher contribution rate); and • For purposes of Section 9.5 testing, the RSF is excluded from the assets. We believe this treatment is in compliance with the plan document and the Board's Section 9.5 methods and assumptions. When projecting assets, we have assumed that the RSF would grow at the investment rate of return.
Service Credit Accruals:	Service accruals for calculating benefits end as of June 30, 2014 for Component II (Legacy) and begin as of June 30, 2014 for Component I (Hybrid). However, service in Component I (Hybrid) and Component II (Legacy) may be used to satisfy benefit eligibility requirements in both plans.
Voluntary Employee Contribution Fund:	For purposes of determining the plans funded status, Voluntary Employee Contributions are included in both the assets and the liabilities of the plan. However, potential arbitrage resulting from the Voluntary Employee Contributions is not considered.
Workers Compensation Offset:	No Workers Compensation offsets are assumed for duty disability benefits.

SECTION G

PLAN PROVISION SUMMARY (AS APPROVED BY STAFF)

Summary of Benefit Provisions
(July 1, 2025)

Plan Year

The Plan Year is the 12-month period commencing on July 1, and ending on June 30. The first plan year starts July 1, 2014.

Plan Membership

Employee means an employee of the City's Police Department who has taken an oath of office or a Firefighter providing services to the City, excluding individuals who are compensated on a contractual or fee basis, any person who is classified as a non-common law employee or an independent contractor for federal income tax and withholding, and also excluding the medical Director of the Retirement System.

The membership of the Retirement System shall consist of all employees of the Fire Department of the City of Detroit and of the Police Department of the City of Detroit who are employed as Firefighters or Police Officers according to the rules and regulations of the respective departments.

Appointed Officials of the Police Department or the Fire Department who are appointed from the membership are permitted to remain members. A Police Officer or Firefighter who is **killed or totally disabled prior to being confirmed**, shall be deemed to have been a member as of the date of his or her death. Any member who is **transferred to a civilian position** in his or her department shall continue as a member.

Service Credit

Credited Service: A member is credited with one month of Credited Service for each calendar month in which the individual performs 140 hours or more of service for the employer as a member. Credited Service is recorded from the later of July 1, 2014, or the date of employment with the City as a Police Officer or Firefighter. A member also receives 1 month of Credited Service for each month the member is eligible to receive duty disability benefits, until such time as the member has 25 years of credited service.

Prior Service: refers to service credit awarded to a member prior to July 1, 2014 under the terms of the Retirement System in effect on June 30, 2014.

Vesting Service: A member is credited with a year of vesting service for each Plan Year commencing on or after July 1, 2014 during which the member performs 1,000 or more hours of work for the employer. Prior Service, as defined above, is also Vesting Service.

Military Service: A member who enters the military while employed by the City and returns to employment with the City following military service receives service credit in the Retirement System for the military service time as though there had been no interruption of employment. In order to receive such service credit, the individual must pay contributions to the Retirement System for the military service time upon return to employment.

Summary of Benefit Provisions (Continued)

Average Final Compensation

Compensation: Compensation is base salary, excluding bonuses, overtime, sick leave, longevity pay, unused vacation time, etc. Compensation includes deferred compensation and "picked up" employee contributions to the Retirement System. Compensation is limited by IRC Section 401(a)(17).

Average Final Compensation:

For members hired after June 30, 2014, the average of the compensation received during the 5 consecutive years of Credited Service (including Prior Service) immediately preceding the date of the members last termination of City employment as a Police Officer or Firefighter. If the member has less than 5 years of Credited Service (including Prior Service), the Average Final Compensation is the average of the compensation received during all years of Credited Service.

For members hired before June 30, 2014 and active on June 30, 2024, the average of the compensation received during the 3 consecutive years of Credited Service (including Prior Service) immediately preceding the date of the members last termination of City employment as a Police Officer or Firefighter. If the member has less than 3 years of Credited Service (including Prior Service), the Average Final Compensation is the average of the compensation received during all years of Credited Service.

Final Compensation means the annual compensation of a member at the time of last termination of employment.

Normal Retirement

Normal Retirement Eligibility: The Normal Retirement Age is 50 with 25 or more years of Credited Service (including prior service), with the following transition period.

Fiscal Year	Age and Elgibility Service
2015	43 and 20
2016	43 and 20
2017	44 and 21
2018	45 and 22
2019	46 and 23
2020	47 and 24
2021 and later	50 and 25

For members hired before July 1, 2014 and active on June 30, 2024, members are eligible to retire upon attaining age 25 or more years of Credited Service (including prior service) regardless of age.

Summary of Benefit Provisions (Continued)

Normal Retirement Amount: The retirement allowance payable to a member who retires on or after the normal retirement age is 2.0% times Average Final Compensation times Credited Service (after June 30, 2014) measured to the nearest month.

For Fire members hired before July 1, 2014 and who were active (excluding DROP) as of June 30, 2024, a 2.4% multiplier applies for Credited Service between June 30, 2014 and June 30, 2024.

For Police members hired before July 1, 2014 and who were active (including DROP) as of June 30, 2024, a 2.37% multiplier applies for Credited Service between June 30, 2014 and June 30, 2024. For Police members in the DROP, the 2.37% multiplier impacts future DROP deposits only effective July 1, 2024.

Deferred Retirement (Vested Benefit)

Eligibility: 10 years of Vesting Service.

Benefit Commencement: Age 55.

Annual Amount: Same as Normal Retirement but based on Average Final Compensation and Credited Service at the time of termination. An actuarial reduction from age 62 is applicable if benefits are taken prior to age 62 (*waived for DPLSA and DPCOA members*).

Duty Disability Retirement

Eligibility: The individual must be totally disabled for duty by reason of illness, injury, or disease resulting from performance of duty.

Amount: For the first 24 months, the member shall receive a basic benefit equal to 50% of his or her final compensation plus a supplemental benefit equal to 16-2/3% of final compensation. After 24 months, if the Board finds that the member is disabled from any occupation the member shall continue to receive both the 50% and the 16-2/3% benefit until the member would have achieved 25 years of service. The 16-2/3% benefit ceases at the time the member would have had 25 years of service, or if the member is found not to be disabled from any occupation after the 24-month review. Duty disability benefits continue to be paid until the member would have achieved 25 years of service and is age 65, unless the member is found not to be disabled prior to that date. Upon termination of disability, or the date at which the member would have achieved 25 years of service and is age 65, the member's benefit is reduced to the 50% basic benefit is computed based upon Normal Retirement benefit provisions. Earned Income in any year acts to reduce the disability benefit in the following year, to the extent that earned income combined with the disability benefit exceeds the compensation at the time of disability (after adjustment for the Variable Improvement factor). Amounts payable from Worker's Comp or similar programs are offset against the amount otherwise payable.

Summary of Benefit Provisions (Continued)

Non-Duty Disability Retirement

Eligibility: Total and permanent disability that is not duty related but that occurred while in the employ of the City.

Amount: If the member has less than 5 years of Credited service, accumulated contributions are refunded or, at the members option, may be payable in the form of a cash refund annuity. No other benefits are payable. Members with 5 or more years of credited service at the time of disability may receive a benefit computed as a Normal Retirement benefit, but not less than 20% of Average Final Compensation. Earned Income in any year acts to reduce the disability benefit in the following year, to the extent that earned income combined with the disability benefit (after adjustment for the Variable Improvement factor) exceeds the compensation at the time of disability. Amounts payable from Worker's Comp or similar programs are offset against the amount otherwise payable.

Accidental (Line of Duty) Death before Retirement

Eligibility: Death resulting directly from performance of Duty in the service of the employer or as a result of illness contracted or injuries received while in the service of the employer.

Amount: Accumulated Mandatory Employee Contributions are refunded. If there is a surviving spouse, the surviving spouse receives a lifetime pension of 5/11^{ths} of the member's final compensation. Each surviving child under age 18 receives a pension of 1/10th of final compensation payable until age 18. If there are more than two surviving children, each receives an equal share of 7/33^{rds} of final compensation, payable to age 18 and redistributed to the remaining children upon attainment of age 18.

The sum of all benefits payable shall not exceed 2/3^{rds} of the member's Final Compensation. If there is no surviving spouse, each surviving child under age 18 receives a pension of 1/4th of the member's final compensation, subject to a maximum total of ½ of final compensation. If there is neither surviving spouse nor surviving children under the age of 18, each dependent parent, if any, shall receive a pension of 1/6th of the member's Final Compensation.

Ordinary (Other than Line of Duty) Death before Retirement

Eligibility: 10 or more years of Vesting Service. The individual must be employed by the employer at time of death.

Amount: The Surviving Spouse shall receive a retirement allowance computed as though the member had retired the day before death, notwithstanding that the death was prior to the Normal Retirement Date, elected the Joint and 100% Option in favor of the spouse, and then died.

Summary of Benefit Provisions (Continued)

Refund of Mandatory Contributions

A member who ceases to be an employee for reasons other than retirement, death, or disability, may elect to receive a refund of mandatory Accumulated Contributions (without interest) in lieu of any other Component I benefit payable. In the case of a member who dies while employed by the City, or following termination of employment with the City, if no Surviving Spouse benefit is payable, the accumulated mandatory Employee Contributions (without interest) are paid to the member's estate.

Variable Pension Improvement Factor (VPIF Escalator)

Eligibility: In receipt of a retirement allowance for at least 12 months as of the first day of the plan year.

Amount: Beginning July 1, 2015 and effective the first date of each Plan year thereafter, the Board may determine that the Component I Retirement Allowance shall be increased by 1% of the then current (i.e., compounded to include prior VPIF's) retirement allowance. The VPIF Escalator may not be awarded in the event that the funding level of Component I of the Retirement System projected over a 5-year period falls below 90%.

Deferred Retirement Option Program "DROP"

Eligibility: Eligible for immediate retirement under Component I and either a non-union executive or covered by a collective bargaining agreement permitting participation in the DROP. Members electing DROP after July 1, 2014 are limited to 5 years of DROP participation. Effective October 31, 2018, DPLSA and DPCOA members are limited to 10 years of DROP participation. Effective May 9, 2019, DPOA members are limited to 10 years of DROP participation. Effective September 21, 2021, DPLSA members are limited to 15 years of DROP participation.

Amount: Upon entry into the DROP, the member ceases to accrue additional retirement benefits and must elect the optional form under which the retirement allowance will ultimately be paid. For members hired on or before June 30, 2014, 85% of that amount, including VPIF, is paid into the DROP account. For members hired on or after July 1, 2014, 75% of that amount, including VPIF, is paid into the DROP account.

DROP accounts are currently held outside of the plan.

Investment: ING is currently responsible for the administration and investment of the DROP accounts. As soon as possible after July 1, 2014, the Board shall determine whether or not it is feasible for the Board to administer and invest the DROP accounts, in which case DROP assets would be commingled with Retirement System assets for investment purposes.

Earnings Credits: If the Board administers and invests the accounts, earnings credits shall be 85% of actual net Retirement System earnings rates, but neither less than 0% nor more than 7.75%.

Fees: Fees associated with maintenance of the DROP accounts outside the Retirement System shall be charged directly to DROP participants by means of deductions from their accounts.

Summary of Benefit Provisions (Continued)

Distribution: Upon termination of employment for any reason (including disability), the member's DROP account may be distributed in the form of a lump sum or an annuity. Any such annuity shall be subject to market rates of interest and other market related assumptions. At the same time, the member's monthly retirement allowance shall commence in the amount that would have been paid at the time the member entered the DROP, together with any applicable VPIF increases.

Death While in DROP: In the case of a member who dies during DROP participation, the DROP account balance is paid either to the named beneficiary or to the estate. Further, the DROP election is then rescinded and 100% of the retirement allowance that would have been paid but for participation in the DROP is restored. Survivor benefits are then payable in accordance with the payment option elected by the deceased member at the time the member elected to participate in the DROP.

Termination of DROP: The DROP can be terminated if it is determined that it is not cost neutral and cannot be amended to make it so.

Contributions

Members: Members who were active as of June 30, 2014 contribute 6% of Compensation. Members who are hired or rehired after that date contribute 8% of compensation. DROP participants do not make employee contributions. Member contributions are "picked up" in accordance with IRC 414(h).

Employers: 11.2% of compensation for members of the DPOA until October 3, 2014; 11.2% of Compensation of active employees who are members of the DFFA until November 6, 2014; 12.25% of Compensation of Active employees who are members of the DPCOA, DPLSA, and DPOA from and after October 3, 2014 until June 30, 2023; 12.25% of Compensation of DFFA members from and after November 6, 2014 until June 30, 2023, to be split between the Pension Accumulation Fund and the Rate Stabilization reserve. For Plan years 2024 and later, contributions shall be determined by an Actuary using reasonable and appropriate assumptions approved by the Board and the Investment Committee.

Voluntary Employee Contributions

Eligibility: Coverage by a collective bargaining agreement that permits the Member to make Voluntary Employee Contributions to Component I. Cannot be a current participant in the DROP.

Amount: Not less than 1% of Compensation nor more than 10% of Compensation. DPOA members can elect to have a whole % of the amount the City pays him or her for accumulated sick leave in excess of 400 hours paid to the voluntary employee account. All voluntary employee contributions are made on an after-tax basis.

Earnings Crediting: Each Plan year, accounts are credited with earnings at a rate equal to the net investment rate of return on Retirement System Assets for the second fiscal year immediately preceding the fiscal year in which earnings are to be credited. The earnings rate may not be less than 0% and may not exceed 5.25%.

Summary of Benefit Provisions (Continued)

Distribution: Upon termination of employment, accounts may be distributed in a lump sum, in equal monthly installments for a period not exceeding three years, or, at the option of the member, in the form of an actuarially equivalent life annuity payable in the same form as and added to the member's Retirement Allowance. The determination of actuarial equivalent for this purpose is based upon market rates of investment return and other market related assumptions. In case of a member who dies before receiving a distribution of his or her voluntary account, the value of the account is payable to the nominated beneficiary, or to the estate.

Forms of Payment

Normal Form of Payment: The normal form of payment is a straight life allowance with no death benefit, and, in particular, no residual refund of mandatory employee contributions. Until the date the first Retirement Allowance payment check is issued, any Member may elect to receive payment in either the Normal Form or in the Actuarial Equivalent of the Normal Form computed as of the effective date of retirement and payable in one of the forms described below.

Option One. Modified Cash Refund Annuity: If a Retiree who elected a Modified Cash Refund Annuity dies before payment has been received in an aggregate amount equal to, but not exceeding the Retiree's Accumulated Mandatory Employee Contributions at the time of retirement, the difference between said Accumulated Mandatory Employee Contributions and the aggregate amount of annuity payments already received, shall be paid in a single lump sum to a Beneficiary nominated by written designation duly executed by the Member and filed with the Board. If there are no such designated Beneficiaries surviving said Retiree, any such difference shall be paid to the Retiree's estate.

Option Two. Joint and One Hundred Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and One Hundred Percent Survivor Allowance, one hundred percent of the reduced Retirement Allowance shall be paid to and continued throughout the life of the Beneficiary nominated by written designation duly executed and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Option "A." Joint and Seventy-Five Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and Seventy-Five Percent Survivor Allowance, seventy-five percent of the reduced Retirement Allowance shall be continued throughout the life of and paid to the Beneficiary nominated by written designation duly executed by the Member and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Option Three. Joint and Fifty Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and Fifty Percent Survivor Allowance, fifty percent of the reduced Retirement Allowance shall be continued throughout the life of and paid to the Beneficiary nominated by written designation duly executed by the Member and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Option "B." Joint and Twenty-Five Percent Survivor Allowance: Upon the death of a Retiree who elected a Joint and Twenty-Five Percent Survivor Allowance, twenty-five percent of the reduced Retirement Allowance shall be paid throughout the life of the Beneficiary nominated by written designation duly executed and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

Summary of Benefit Provisions (Continued)

Joint and Survivor Optional Forms of Payment: The Joint and Survivor Optional Forms of Payment provided under the Retirement System shall be made available in either the standard form or the Pop-Up Form, as follows:

> ***Standard Form:*** Under the Standard Form, the reduced Retirement Allowance shall be paid throughout the lifetime of the Retiree.
>
> ***Pop-Up Form:*** Under the Pop-Up Form, the reduced Retirement Allowance shall be paid throughout the lifetime of the Retiree and the designated Beneficiary. In the event of the death of the designated Beneficiary during the lifetime of the Retiree, the amount of the Retirement Allowance shall be changed to the amount that would have been payable had the Retiree elected the Straight Life Retirement Allowance Form of Payment.

Disposition of Residue: If under a Joint and One Hundred Percent Survivor allowance, a Joint and Seventy-Five Percent Survivor allowance, a Joint and Fifty Percent Survivor allowance, or a Joint and Twenty-Five Percent Survivor allowance as provided above, both the Retiree and the Beneficiary die before they have received, in Retirement Allowance payments, an aggregate amount equal to the Retiree's Accumulated Mandatory Employee Contributions at the time of retirement, the difference between the said Accumulated Mandatory Employee Contributions and the aggregate amount of Retirement Allowances paid to the Retiree and Beneficiary, shall be paid in a single lump sum to such person or persons nominated by written designation of the Retiree duly executed and filed with the Board. If there are no such person or persons surviving the Retiree and the Beneficiary, any such difference shall be paid to the estate of the second to die of the Retiree or Beneficiary.

Summary of Benefit Provisions (Concluded)

Rehire before or after Retirement

A former member who is vested and is not a DROP participant and who later becomes a Police Officer or Firefighter (but not a Police Assistant) shall have his or her benefit pertaining to total Credited Service earned on and after July 1, 2014 calculated in accordance with the terms of Component I of the Retirement System in effect at the time of the last separation from service. If the former member has previously withdrawn mandatory accumulated contributions, and such withdrawn contributions are not repaid within two years of the rehire date, only the Credited Service earned on and after the rehire date shall be taken into consideration in determining the retirement allowance.

Retirement benefits for a Retiree who returns to active full-time employment other than as a Police Assistant shall be subject to the following provisions:

- A Retiree who returns to work will have the Retirement Allowance suspended upon re-employment. The variable pension improvement factor (escalator) shall not be added to the amount of the original Retirement Allowance during the Retiree's re-employment period.

- A Retiree who returns to work will be entitled to receive a second Retirement Allowance in accordance with the provisions of the Retirement System in effect during the re-employment period.

- A Retiree's Average Final Compensation for purposes of determining the second Retirement Allowance will be based upon the Compensation earned by the Retiree after the return to work.

- An individual who retires for a second time will not be allowed to change the payment option selected with respect to the original Retirement Allowance. However, the individual may select a separate payment option with respect to the second Retirement Allowance.

SECTION H

GLOSSARY

Glossary

Accrued Service	The service credited under the plan which was rendered before the date of the actuarial valuation.
Actuarial Accrued Liability (AAL)	The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.
Actuarial Assumptions	Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items.
Actuarial Cost Method	A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of future Normal Costs and the Actuarial Accrued Liability.
Actuarially Determined Employer Contribution	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's actuarial funding policy.
Actuarial Equivalent	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV)	The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made.
Actuarial Present Value of Future Benefits (APVFB)	The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Funding Value of Assets, and related Actuarial Present Values for a plan.
AFC	Average Final Compensation.

Glossary

Amortization Method	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase. Under the Level Principal method, the Amortization Payment is one of a stream of decreasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Principal method, the principal payment remains constant, while the interest portion is reduced over time.
Amortization Payment	That portion of the plan contribution or ADEC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
Amortization Period	The period used in calculating the Amortization Payment.
ARF	Annuity Reserve Fund.
ASF	Annuity Savings Fund of the Component II (Legacy) Plan.
Closed Amortization Period	A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.
COLA	Cost-of-Living Adjustment.
DFFA	Detroit Fire Fighters Association.
DPCOA	Detroit Police Command Officers Association.
DPLSA	Detroit Police Lieutenants and Sergeants Association.
DPOA	Detroit Police Officers Association.
DROP	Deferred Retirement Option Program.
Duration	An approximate measure of sensitivity to changes in interest rates.

Glossary

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 Gain/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 valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience; e.g., the assets earn more than projected, salaries do not increase as fast as 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, losses are the result of unfavorable experience; i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.
Funded Ratio	The ratio of the Funding Value of Assets to the Actuarial Accrued Liability.
Funding Value of Assets (FVA)	The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Employer Contribution (ADEC).
FY	Fiscal Year.
GASB	Governmental Accounting Standards Board.
GASB Statement No. 67 and GASB Statement No. 28	These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. GASB Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while GASB Statement No. 67 sets the rules for the systems themselves.
MVA	Market Value Assets.
Normal Cost	The annual cost assigned, under the Actuarial Cost Method, to the current plan year.

Glossary

Open Amortization Period	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.
PAF	Pension Accumulation Fund.
POA	The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit.
Reserve Account	An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.
Solvency Liability	A market-based measurement of the pension obligations.
Transition Cost	Initial unfunded liability as described in Section E-16 of the Plan document.
Unfunded Actuarial Accrued Liability	The difference between the Actuarial Accrued Liability and Funding Value of Assets.
Valuation Date	The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.
VPIF	Variable Pension Improvement Factor. Discussed in Section 6.2 of the Plan Document.

APPENDIX

FUNDING POLICY

Police and Fire Retirement System of the City of Detroit
Actuarial Funding Policy

Introduction

The purpose of this Actuarial Funding Policy is to record the funding objectives and policy set by the Board of Trustees (Board) for the Police and Fire Retirement System of the City of Detroit (the System). The Board establishes this Actuarial Funding Policy to help ensure the systematic funding of future benefit payments for members of the Plan.

In 2014, the Plan for the System was written and approved by the bankruptcy court as part of the City's Plan of Adjustment (POA). At that time, the original retirement plan was split into two Retirement Plans: Component I (Hybrid) and Component II (Legacy). In accordance with the POA, employer contributions and certain assumptions cannot be changed until fiscal year 2024. This Policy is intended to recognize those items as fixed until 2024 and establish a funding policy for the period beginning in fiscal year 2024, when employer contributions must be determined on an actuarial basis. Nothing in this Policy is intended to prevent the Board from altering the Policy prior to fiscal year 2024 as conditions change or additional information becomes available to the Board.

This Policy shall be regularly reviewed by the Board.

Funding Objectives

1. Provide benefit security to members of the System:
    a. For purposes of this policy, benefit security means having adequate liquidity to pay benefits when due.
2. Establish an appropriate employer contribution based on the following objectives:
    a. Fully funding the Legacy Plan liability no later than 2054;
    b. Keeping the Hybrid Plan fully funded; and
    c. Managing employer contribution volatility.
3. Provide a reasonable margin for adverse experience to help offset risks.
4. Measure and monitor funding status, post-2024 contribution estimates and risk.
    a. Perform annual valuations; and
    b. Include post-2024 contribution estimates (based on this Policy) in annual actuarial valuations.

- The Plans will have annual actuarial valuations each June 30. Employer contributions will be determined for the fiscal year ending two years after the valuation date. For example, the actuarially determined employer contribution for the fiscal year ending June 30, 2024 will be determined by the June 30, 2022 annual actuarial valuation.
- Annual actuarial valuations may or may not also serve other purposes such as Legacy Plan restoration, Hybrid plan Section 9.5 fiscal responsibility calculations, and/or Annuity Savings Fund excess interest transfers between components. Unless otherwise stated, those purposes are not subject to this Policy.
- For all other funding purposes, annual actuarial valuations will include the following elements of the Actuarial Funding Policy:

1. Actuarial Cost Method

a. Hybrid Plan: The Entry Age actuarial cost method shall be used in determining the Actuarial Accrued Liability (AAL) and Normal Cost with the entry age based on date of hire. Since this component was created in July 2014 and granted eligibility and vesting service prior to July 2014 (for members hired before that date), this Plan had an unfunded actuarial accrued liability on the effective date, known as the Transition Cost. As of June 30, 2017, the AAL (including the Transition Cost) in the Hybrid Plan was fully funded. This Plan could become less than fully funded in the future if experience is less favorable than assumed or there are changes in assumptions or Plan provisions.

b. Legacy Plan: The Unit Credit Normal actuarial cost method shall be used in determining Actuarial Accrued Liability (AAL) and Normal Cost. Since this component is closed and accrued benefits are frozen as of June 30, 2014, this method results in no normal costs and an AAL that equals the Present Value of Accrued Benefits (PVAB) of each member.

2. Asset Smoothing Method

a. For estimating contributions prior to June 30, 2023, the Funding Value of Assets (or actuarial value of assets) will be equal to the Market Value of Assets, as mandated by the Plan of Adjustment. For determining (or estimating) employer contributions on or after fiscal year 2024, the Funding Value of Assets will be based on a method that employs smoothing of market gains and losses over a closed period. The smoothing period for recognized market gains and losses (above or below the assumed rate of return) will be a 3-year period.

b. The Funding Value of Assets shall not diverge from the Market Value of Assets by more than 15%.

c. The annual actuarial valuation will calculate results on both the smoothed value of assets and the (non-smoothed) Market Value of Assets beginning with the June 30, 2019 valuation (the Funding Value of Assets will initially be set to the Market Value of Assets as of June 30, 2018 with smoothing beginning prospectively). The post-2024 contribution estimate will always be based on the smoothed value of assets. Other results (UAAL, Funded Status, etc.) will be based on the Market Value of Assets prior to 2024 and the smoothed value of assets after 2023. Upon consultation with the Actuary, the Funding Value of Assets may be reset to the Market Value of Assets.

3. Amortization Method

a. Hybrid Plan

a) A Level Percent of Payroll amortization method shall be used to systematically eliminate (pay off) the Unfunded Actuarial Accrued Liability (UAAL) over a closed 15-year period from the later of July 1, 2023 or the applicable fiscal year after the funded status falls below 100%.

b) If funded status is above 100%, the contribution requirements for the UAAL will be $0 (thereby creating a minimum employer contribution of employer normal cost).

b. Legacy Plan

a) The Level Principal amortization method shall be used to systematically eliminate (pay off) the Unfunded Actuarial Accrued Liability (UAAL) over a closed period of 30 years from July 1, 2023 for the UAAL as of July 30, 2022 (projected to July 1, 2023), and

4. Funding Target and Cash Flow Projections

a. The targeted funded ratio shall be 100%.

b. The Legacy Plan annual actuarial valuation shall include projections of estimated employer contributions, expected benefit payments and estimated funded status to the later of fiscal year 2054 or 30 years after the applicable employer contribution fiscal year.

c. Section 9.5 of the Plan details the actions to be taken if the 5-year projected funded status falls below 90% (Hybrid Plan, only).

5. Risk Management

a. Assumption Changes

a) The actuarial assumptions used shall be those last adopted by the Board based on the most recent experience study and upon the advice and recommendation of the actuary. In accordance with the City Ordinance, the actuary shall conduct an experience study at least every five years. The results of the study shall be the basis for the actuarial assumption changes recommended to the Board. However, the assumed rate of return and the actuarial value of assets are mandated by the City's POA and cannot be changed prior to June 30, 2023.

b) The actuarial assumptions may be updated at any time, as advised by the actuary, if significant Plan design changes or other significant events occur.

c) The next experience study will be performed after the 2020 actuarial valuation and will include both economic (investment return, inflation, etc.) and demographic (mortality, retirement, disability, etc.) assumptions. Even though the investment rate of return may not be changed for determining employer contributions until after June 30, 2023, the Board may elect to show valuation results under an alternative reasonable assumed rate of investment return prior to 2023.

b. Risk Measures

a) Risk measures will be included in the annual actuarial valuations. Below is a list of potential measures to be included. The measures may be changed over time as deemed appropriate.

(i) Classic measures currently determined

- Funded ratio (assets / liability) on both a market value and funding value (if funding value is not equal to market).
- UAAL amortization period (years required to pay down the UAAL based on current funding rates).
- Portfolio rate of return for the year on both the market value and funding value of assets.
- 5- and 10-year geometric average portfolio rate of return on both the market value and funding value of assets (developed prospectively beginning with the 2019 valuation).
- 5- and 10-year standard deviation of return on both the market value and funding value of assets (developed prospectively beginning with the 2019 valuation).

(ii) Duration of the Actuarial Accrued Liability

- Measures the sensitivity of the liability to a 1% change in assumed rate of return. A decrease in this measure indicates a decrease in assumed rate sensitivity and vice versa.

(iii) Total UAAL / Covered Payroll

- Measures the risk associated with contribution rates relative to the impact on the ability to fund the UAAL. A decrease in this measure indicates a decrease in UAAL contribution risk and vice versa.
- Consideration will be given to using total payroll or revenue source, if available.

(iv) Total Assets / Covered Payroll

- Measures the risk associated with the potential impact of asset experience on contributions. A decrease in this measure indicates a decrease in asset risk and vice versa.
- Consideration will be given to using total payroll or revenue source, if available.

(v) Total AAL / Covered Payroll

- Measures the risk associated with the potential impact of liability experience on contributions. A decrease in this measure indicates a decrease in experience risk and vice versa. This also provides a long-term measure of the asset risk where the System has a target funded ratio of 100%.
- Consideration will be given to using total payroll or revenue source, if available.

(vi) Non-Investment Cash flow / Beginning of year assets

- Measures depletion risk, sensitivity to annual investment gains and losses risk and the maturity of the plan. For a mature open plan, this may converge to the negative of the real rate of return assumption (investment return less wage inflation). A less negative number (or a positive number) indicates a less mature plan and/or a plan that is at lower risk of fund depletion and less sensitive to annual gains and losses. A more negative number indicates a more mature plan and/or a plan that is more at risk of fund depletion and more sensitive to annual gains and losses. For a super-mature closed plan such as the Legacy plan, this may become more negative over time as liquidity needs increase.

(vii) Market Value of Assets / Benefit Payments

- Measure depletion risk. A low value estimates the number of years to depletion disregarding future contributions and investment return.

(viii) Solvency Liability

- Measures the estimated cost of accrued benefits as a result of minimizing investment risk in the portfolio.

b) Risk Control: The Board shall carefully monitor the risk measures above and shall consider steps to mitigate risk, particularly as the Legacy Plan funded ratio increases. Examples of risk mitigating techniques include, but are not limited to:

(i) Reviewing investment risk in accordance with the Board's Investment Policy

(ii) Adding provisions for adverse deviation in the actuarial assumptions

(iii) Increasing employer contributions (through a change in methods, assumptions, or amortization period)

(iv) Other

Glossary

1. **Actuarial Accrued Liability (AAL):** The difference between (i) the actuarial present value of future plan benefits; and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."
2. **Actuarial Assumptions:** Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
3. **Actuarial Cost Method:** A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."
4. **Actuarial Gain (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, in accordance with the actuarial cost method being used. For example, if during a given year the assets earn more than the investment return assumption, the amount of earnings above the assumption will cause an unexpected reduction in UAAL, or "actuarial gain" as of the next valuation. These include contribution gains and losses that result from actual contributions made being greater or less than the level determined under the policy.
5. **Actuary:** A person who is trained in the applications of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries (MAAA). The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation ASA and ultimately to Fellowship with the designation FSA.
6. **Amortization:** Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.
7. **Unit Credit Normal Actuarial Cost Method:** A funding method that calculates the Normal Cost as the present value of the change in accrued benefits for active members.
8. **Experience Study:** An actuarial investigation of demographic and economic experiences of the system during the period studied. The investigation was made for the purpose of updating the actuarial assumptions used in valuing the actuarial liabilities.
9. **Funding Value of Assets**: The value of current plan assets recognized for valuation purposes. Generally based on a phased-in recognition of all or a portion of market related investment return. Sometimes referred to as Actuarial Value of Assets or Smoothed value of Assets.
10. **Market Value of Assets:** The fair value of plan assets as reported in the plan's audited financial statements.
11. **Normal Cost (NC):** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.
12. **Unfunded Actuarial Accrued Liability (UAAL):** The positive difference, if any, between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."