City of Takoma Park Police Employees' Retirement Plan

Actuarial Valuation as of July 1, 2024 to Determine the County's Contribution for the Fiscal Year Ending June 30, 2026

Bolton

Submitted by:

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Table of Contents

Bolton
Employee Benefits, Actuarial & Investment Consulting

August 30, 2024

Robert DiSpirito
City Manager
The City of Takoma Park
7500 Maple Avenue
Takoma Park, MD 20912

Re: City of Takoma Park Police Employees' Retirement Plan Valuation

Dear Robert:

The following sets forth the actuarial valuation of the City of Takoma Park Police Employees' Retirement Plan as of July 1, 2024. The actuarial valuation was performed at the request of The City of Takoma Park (the City). Section I of the report provides a summary, Section II sets forth our Actuarial Certification, and Section III contains the development of the City's contribution for the 2026 fiscal year. Section IV provides a discussion of risk, while sections V through VIII contain a summary of the census and asset data, a ten-year projection of benefit payments, plan provisions, assumptions and actuarial methods. The appendices of the report provide information on plan funding and a glossary of many of the terms used in this report.

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate.

Respectfully submitted,

Thomas Vicente, FSA, EA

Jordan McClane, FSA, EA

Section I. Executive Summary

Background

Bolton Partners, Inc. (Bolton) has prepared the following report that sets forth the actuarial valuation of the City of Takoma Park Police Employees' Retirement Plan as of July 1, 2024. This report provides the funded status of the plan as of July 1, 2024 as well as the Actuarially Determined Contribution (ADC) for the plan for the fiscal year ending June 30, 2026 (FY 2026). Accounting results under Government Accounting Standards Board Statements 67 and 68 are provided in a separate report.

Actuarially Determined Contributions (ADC)

	FY2024	FY2025	FY2026
ADC	1,483,212	1,676,170	1,462,117
Percent of Total Payroll	47.27%	45.58%	43.18%

Details of the determination of the City's contribution for FY 2026 are shown in Section III of this report.

Key Demographic Elements

	7/1/2023	7/1/2024	% Change
Participant Counts			
Actives (not in DROP)	40	34	-15.0%
Actives (in DROP)	2	1	-50.0%
Retirees, Disables, and Survivors	32	33	3.1%
Terminated Vested	4	5	25.0%
Refund of Contributions Due	9	14	55.6%
Total	**87**	**87**	**0.0%**

Funding Measures

		7/1/2023	7/1/2024	% Change
1.	Actuarial Accrued Liability	$ 32,484,400	$ 33,693,161	3.7%
2.	Actuarial Value of Assets	$ 24,244,054	$ 26,203,307	8.1%
3.	Plan Funded Ratio (2. / 1.)	74.6%	77.8%	4.2%
4.	Market Value of Assets	$ 22,992,036	$ 26,108,884	13.6%
5.	Funded Ratio based on Market Value of Assets (4. / 1.)	70.8%	77.5%	9.5%

Experience Analysis

The following factors affected the County's contribution as a percentage of payroll:

- **Plan assets and investment performance** – the net return for the fiscal year ending June 30, 2024 after investment expenses was 11.9% on a market value basis and 6.5% on an actuarial value basis. Investment returns during FY 2024 were about $1.1 million higher than assumed. A portion of this gain is reflected in the actuarial value of assets (AVA) in this valuation, and the remaining portions will be reflected in future valuations. The AVA and the return on the AVA also reflect the continued recognition of net investment losses from prior valuations. As of July 1, 2024, there is a total of $0.1 million in net deferred investment losses that will be reflected in future valuations.
- **Cost of Living Adjustment** – The CPI increase of 3.35% translated into a weighted-average 2024 COLA of 3.21% due to the 3.00% compounded cap. This COLA increase was higher than the assumed annual increase of 3.00%.
- **Payroll changes** - Pay for returning employees increased approximately 4.84% over the prior year; less than our expected increase of 5.5% for returning actives. Total participant payroll *decreased* by 7.9%, over the prior year; whereas the valuation assumption is that payroll will grow 2.75% per year.

Risk Measures

The primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions. Many variables can influence future results and the sensitivity of the ADC will vary from plan to plan. As part of the annual valuation, we monitor commonly used measures of the relative riskiness of a pension plan, relative to the plan sponsor and the employee group covered by the plan. A brief review of the risk metrics and a discussion of key risks are shown in Section IV. Additional detailed or focused assessment of risks is outside the scope of the actuarial valuation but can be conducted as a separate assignment.

Changes in Methods, Assumptions, and Plan Provisions

There were no changes in methods, assumptions or plan provisions.

Sources of Information

The July 1, 2024 participant data and market value of assets were provided by or at the direction of the City. While we have reviewed this data for consistency and completeness, we have not audited this data.

Section II. Actuarial Certification

This actuarial valuation sets forth our calculation of an estimate of the liabilities of the City of Takoma Park Police Employees' Retirement Plan (the plan), together with a comparison of these liabilities with the value of the plan assets, as submitted by the City of Takoma Park (the City). This liability calculation and comparison with assets are applicable for the valuation date only. The future is uncertain, and the plan may become better funded or more poorly funded in the future. This valuation does not provide any guarantee that the plan will be able to provide the promised benefits in the future.

This report was prepared for the internal use of the City and its auditors in connection with our actuarial valuations of the pension plan. The purpose of this report is to provide the recommended employer contribution for the 2026 fiscal year. It is neither intended nor necessarily suitable for other purposes. Bolton is not responsible for the consequences of any other use or the reliance upon this report by any other party.

This report is based on plan provisions, census data, and asset data submitted by the City. We have relied on this information for purposes of preparing this report. We have not audited the census or asset data provided; however, based on our review, the data appears to be reasonable and consistent with previously provided information. Unless otherwise noted in our report, we believe the information provided is sufficiently complete and reliable for purposes of the results presented in this report. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The City is solely responsible for the validity and completeness of this information.

The City is responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in this report. The City is solely responsible for communicating to Bolton any changes required thereto.

The City is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Bolton's actuaries have not provided any investment advice to the City.

This is a deterministic valuation in that it is based on a single set of assumptions. This set of assumptions is one possible basis for our calculations. We may consider that some factors are not material to the valuation of the plan and may not provide a specific assumption for those factors. We may have used other assumptions in the past. We will likely consider changes in assumptions at a future date.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward-looking projection over a very long period of time, no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future.

The City could reasonably ask how the valuation would change if we used a different assumption set or if plan experience exhibited variations from our assumptions. This report does not contain such an analysis. That type of analysis would be a separate assignment.

In addition, decisions regarding benefit improvements, benefit changes, the trust's investment policy, and similar issues should not be based on this valuation. These issues are complex and other factors should be considered when making such decisions. Other factors might include the anticipated vitality of the local economy and future growth expectations, as well as other economic and financial factors.

The cost of this plan is determined by the benefits promised by the plan, the plan's participant population, the investment experience of the plan and many other factors. An actuarial valuation is a budgeting tool for the City. It does not affect the cost of the plan. Different funding methods provide for different timing of contributions to the plan. As the experience of the plan evolves, it is normal for the level of contributions to the plan to change. If a contribution is not made for a particular year, either by deliberate choice or because of an error in a calculation, that contribution can be made in later years. We are not responsible for the consequences of any decision by the City to make contributions at a future time rather than an earlier time. The City is responsible for funding the cost of the plan.

The report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the plan in the case of plan termination. 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 valuation was completed using both proprietary and third-party models (including software and tools). We have tested these models to ensure they are used for their intended purposes, within their known limitations, and without any known material inconsistencies unless otherwise stated.

The calculations in this report have been computed in accordance with our understanding of generally accepted actuarial principles and practices and fairly reflect the actuarial position of the plan. The various actuarial assumptions and methods which have been used are, in our opinion, appropriate for the purposes of this report.

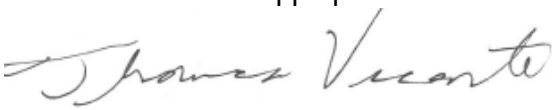
We make every effort to ensure that our calculations are accurately performed. We reserve the right to correct any potential errors by amending the results of this report or by including the corrections in a future valuation report.

Bolton does not practice law and, therefore, cannot and does not provide legal advice. Any statutory interpretation on which this report is based reflects Bolton's understanding as an actuarial firm. Bolton recommends that recipients of this report consult with legal counsel when making any decisions regarding compliance with ERISA, the Internal Revenue Code, or any other statute or regulation.

The City should notify Bolton promptly after receipt of this report if the City disagrees with anything contained in the report or is aware of any information that would affect the results of the report that has not been communicated to Bolton or incorporated herein. The report will be deemed final and acceptable to the City unless the City promptly provides such notice to Bolton.

The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services, which could create a conflict of interest that would impair the objectivity of our work.

We are available to answer any questions on the material in this report to provide explanations or further details as appropriate.



Thomas Vicente, FSA, EA

Jordan McClane, FSA, EA

Section III. Determination of Contributions

Derivation of Liabilities

Below is a summary of the actuarial accrued liability of the future benefits expected to be paid from the plan.

Participants		7/1/2023	7/1/2024
1.	Participants		
a.	Active (excluding DROP)	40	34
b.	Actives Enrolled in DROP	2	1
c.	Retirees, Beneficiaries, and Survivors	32	33
d.	Terminated Vested	4	5
e.	Refund of Contributions Due	9	14
g.	Total	87	87
2.	Active (excluding DROP) Payroll	$ 3,578,655	$ 3,295,181

Actuarial Accrued Liability		7/1/2023	7/1/2024
1.	Active Participants		
a.	Actives not in DROP	8,868,705	9,673,533
b.	Actives in DROP	2,078,139	830,027
c.	Total Active Participants	$ 10,946,844	$ 10,503,560
2.	In-Pay Participants		
a.	Retirees	10,840,144	12,127,471
b.	Beneficiaries	472,965	476,266
c.	Disabled Participants	9,065,103	9,210,372
d.	Total In-Pay Participants	$ 20,378,212	$ 21,814,109
3.	Inactive with Deferred Benefits		
a.	Terminated Vested	1,056,440	1,181,396
b.	Refunds of Contributions Owed	102,904	194,096
c.	Total Inactive with Deferred Benefits	$ 1,159,344	$ 1,375,492
4.	Total Actuarial Accrued Liability (1.c. + 2.d. + 3.c)	$ 32,484,400	$ 33,693,161
5.	Actuarial Value of Assets (AVA)	$ 24,244,054	$ 26,203,307
6.	Unfunded Liability Based on AVA (4. - 5.)	$ 8,240,346	$ 7,489,854
7.	Funded Ratio Based on AVA (5. / 4.)	74.6%	77.8%
8.	Market Value of Assets (MVA)	$ 22,992,036	$ 26,108,884
9.	Unfunded Liability Based on MVA (4. - 8.)	$ 9,492,364	$ 7,584,277
10.	Funded Ratio Based on MVA (8. / 4.)	70.8%	77.5%

Normal Cost

The Normal Cost and the projected Normal Cost prior to the reduction for employee contributions are shown below.

Normal Cost		7/1/2023		7/1/2024
1.	Total Benefit Normal Cost	$ 1,136,940	$	957,726
2.	Expected Employee Contributions	246,464		209,100
3.	Estimated Expenses	103,113		81,859
4.	Net Normal Cost for Plan Year (1. - 2. + 3.)	$ 993,589	$	830,485
5.	Projected Net Normal Cost for Following Plan Year (4. x 1.0275)	$ 1,020,912	$	853,323

Projection of Unfunded Liability

The Projection of the Unfunded Actuarial Liability from July 1, 2024 to July 1, 2025 is shown below.

Projection of Unfunded Liability		7/1/2024
1.	Unfunded Liability as of July 1, 2024	$ 7,489,854
2.	Expected Employer Contributions 7/1/2024-6/30/2025	$ 1,676,170
3.	Expected Employee Contributions 7/1/2024-6/30/2025	$ 202,179
4.	Expected Expenses 7/1/2024-6/30/2025	$ 81,859
5.	Total Normal Cost 7/1/2024-6/30/2025	$ 957,726
6.	Interest at 7.25%	$ 548,466
7.	Projected Unfunded Liability as of July 1, 2025 (1. - 2. - 3. + 4. + 5. + 6.)	$ 7,199,556

Actuarially Determined Contribution

Below is the derivation of the Actuarially Determined Contribution.

Actuarially Determined Contribution		FYE 2026
1.	Projected Net Normal Cost for FYE 06/30/2026	$ 853,323
2.	Amortization Amount	$ 608,794
3.	Actuarially Determined Contribution (ADC) (1. + 2.)	$ 1,462,117
4.	Interest for Timing of Payment	$ -
5.	ADC Adjusted for Timing of Payment (3. + 4.)	$ 1,462,117
6.	Projected Participant (Excluding DROP) Payroll	$ 3,385,795
7.	Employer Contribution as a Percentage of Participant Payroll	43.18%

Actuarial Gain/Loss

Development of Actuarial (Gain)/Loss for July 1, 2023 to June 30, 2024

		Liability	Actuarial Value of Assets	UAAL
1.	Beginning of year total	$ 32,484,400	$ 24,244,054	$ 8,240,346
2.	Normal cost (net of admin exp)	1,136,940		1,136,940
3.	Administration expense		(89,393)	89,393
4.	Benefit payments	(1,547,400)	(1,547,400)	-
5.	Contributions		2,004,377	(2,004,377)
6.	Interest	2,381,454	1,771,019	610,435
7.	Expected end of year total	$ 34,455,394	$ 26,382,657	$ 8,072,737
8.	Actual end of year (before changes)	33,693,161	26,203,307	7,489,854
9.	(Gain)/Loss	$ (762,233)	$ 179,350	$ (582,883)

Development of Unfunded Actuarial Accrued Liability as of June 30, 2024

Development of Unfunded Actuarial Accrued Liability as of June 30, 2024			
1.	Expected UAAL as of June 30, 2024	$	8,072,737
2.	Changes to UAAL due to:		
	a. Actuarial (Gain)/Loss		(582,883)
	b. Plan Change	$	-
	c. Assumption Change	$	-
	d. Method Change		-
	e. Other		-
3.	Total of all changes in UAAL	$	(582,883)
4.	Actual UAAL as of June 30, 2024 (1. + 3.)	$	7,489,854

Below is the derivation of this year's Actuarial (Gain)/Loss.

Actuarial Experience

There was an actuarial gain of $582,883 for the 2023-2024 fiscal year. The gain is measured by comparing expected liabilities to actual liabilities before any changes are made to the valuation, such as any assumption or plan changes reflected in the current valuation. The individual sources of gains and losses that follow are based upon a comparison of actual and expected experience in the year ending on the valuation date.

	Source		(Gain)/Loss
1.	Investments	$	179,000
2.	Benefit Payments		(47,000)
3.	COLAs		56,000
4.	Salary increases		(117,000)
5.	Mortality		112,000
6.	Turnover		(390,000)
7.	Disability		(376,000)
8.	Retirement		-
9.	Miscellaneous		-
10.	Total	$	(583,000)

Schedule of Amortization Bases

Below is a Schedule of the Amortization Bases as of July 1, 2024.

Description	Date Established	Years Remaining	Outstanding Balance	Amortization Amount
Original	7/1/2013	14	$ 10,843,227	$ 938,772
Actuarial Loss/(Gain)	7/1/2014	12	$ (1,187,791)	$ (116,577)
Actuarial Loss/(Gain)	7/1/2015	13	$ (623,090)	$ (57,269)
Actuarial Loss/(Gain)	7/1/2016	14	$ (528,615)	$ (45,766)
Assumption Change	7/1/2016	14	$ 732,353	$ 63,405
Actuarial Loss/(Gain)	7/1/2017	15	$ (105,507)	$ (8,648)
Assumption Change	7/1/2017	15	$ 863,132	$ 70,746
Actuarial Loss/(Gain)	7/1/2018	16	$ (1,397,076)	$ (118,106)
Actuarial Loss/(Gain)	7/1/2019	17	$ (851,540)	$ (69,047)
Actuarial Loss/(Gain)	7/1/2020	18	$ (794,528)	$ (61,999)
Actuarial Loss/(Gain)	7/1/2021	19	$ (1,939,097)	$ (146,043)
Actuarial Loss/(Gain)	7/1/2022	20	$ 499,525	$ 36,407
Assumption Change	7/1/2022	20	$ 638,565	$ 46,541
Actuarial Loss/(Gain)	7/1/2023	21	$ 2,136,023	$ 151,012
Actuarial Loss/(Gain)	7/1/2024	22	$ (1,086,026)	$ (74,634)
Totals			**$ 7,199,556**	**$ 608,794**

Bases are amortized as an equal percent of payroll each year with total payroll expected to increase 2.75% annually (amortization payments for bases established prior to July 1, 2018 increase 4.00% per year).

The July 1, 2024 amortization payment of $608,794 is sufficient to cover the interest on the plan's unfunded liability.

Section IV. Risk Discussion

Risk Measures

Pension plans are complicated financial instruments designed to provide income security for plan participants as they move through their working lives and into retirement. As such they can be subject to many different forces that can put the plan in better or worse positions over time. The primary risk that a plan sponsor incurs from a defined benefit plan is the risk of substantial increases in annual contributions.

The "maturity" level of a plan can indicate the likely sensitivity the plan will have to different events whether positive or negative. Variations in the investment returns are a common source of these types of events or shocks. Other sources might be experience that differs from that assumed, assumption changes or plan changes.

The purpose of this section is to provide the reader with a basic understanding of the fundamentals of pension financing and the associated risks, including implications of the Plan's funding policy on future plan funding, how future experience may differ from the assumptions used, and the potential volatility of future measurements resulting from these differences.

Elements of Pension Plan Financing

The following equation lays out the fundamental elements of pension plan financing:

Contributions + Investment Returns = Benefit Payments + Expenses

Employers and employees **contribute** to a plan based on the statutory requirements, plan terms, and plan sponsor funding policy. The plan invests these contributions and earns a **return** on that investment. Together, these contributions and investment returns are the sole sources of income to the plan. **Benefits** are paid to participants who have met the eligibility and vesting requirements defined by the plan. Plans also pay administrative, investment, auditing, legal, and other **expenses** for maintaining the plan. **Over time, contributions and investment earnings must equal benefits and expenses.**

From this equation, it is evident that funding, investment, and benefit policies must be developed together. Once the benefit terms are established, each plan sponsor must determine the desired balance of contributions versus investment returns needed to finance benefits accrued to participants. It is important to remember that the plan sponsor's investment and funding policies, along with the selected actuarial assumptions, determine the assumed balance between contributions and investment returns. **The actual cost of a plan is based on the actual experience of the plan and may result in a different balance than is assumed.** Ultimately, the expected return does not impact the long-term relationship between the contributions required and the benefit level that can be supported by such contributions. Using a higher expected return assumption may give a false sense of benefit security if the plan does not realize that level of actual returns over time.

The development of integrated benefit, funding, and investment policies generally requires consideration of many factors such as:

- Balancing benefit security and intergenerational equity;
- Risk appetite and ability to absorb short-term volatility in plan contributions;
- Current plan funded status;
- Timing and expected duration of benefit payments; and
- Nature and frequency of past and anticipated future plan amendments.

Significant Risks Affecting Pension Plans

Examples of risk common to most public plans include the following (generally listed from greatest to least risk):

- Investment risk**:** The potential that investment returns will be different than expected.
- Contribution risk: the potential that actual future contributions are not made in accordance with the plan's actuarially-based funding policy.
- Longevity and other demographic risks: The potential that mortality or other demographic experience will be different than expected.
- Asset/liability mismatch risk: The potential that changes in the value of liabilities are not matched by changes in asset values.
- Cash flow risks: The potential that contributions to the plan will not cover benefit payments and expenses.

Investment risk is often the single most significant risk for defined benefit plans. Plans that seek a higher investment return are typically forced to accept a higher level of volatility that can change the plan's funded status drastically year-to-year. Use of an asset smoothing method that phases in investment gains and losses over a period of years can give the perception of less volatility in the funded status from year to year.

Contribution risk most commonly results from either large contribution increases that are difficult for the plan sponsor to meet, or from a material decrease in the number of covered employees and/or covered payroll.

Assumptions regarding mortality and other demographic factors related to participant behavior bring the risk that future experience will diverge from the reasonable assumptions utilized within the actuarial valuation model. For example, participants living longer than expected will increase plan costs, while people terminating sooner than expected will generally decrease plan costs. Additionally, what is considered a reasonable assumption may change over time and lead to an increase or decrease in future contributions. Actual life expectancies may be longer or shorter than what is reflected in the valuation and benefit payment projections and will increase or decrease the cost of the plan as actual experience emerges.

Asset/liability mismatch risk is also another major risk for many pension plans. To the extent that the duration of plan assets is not matched to the duration of plan liabilities the change in discount rates could have a significant impact on the plan's funded status. For most public pension plans, changes in asset values and interest rates do not directly affect the

measurement of the plan's liability. Liability-driven investment approaches (where the liability is immunized by investments in fixed income whose cash inflows are matched to the benefit payment outflows, or the asset and liability durations are brought into close alignment) will reduce this risk; however, it is difficult to invest in a manner that hedges all risks.

As plans mature, they become more reliant on investment returns to pay benefits and expenses. When plans have negative cash flows, they must spend interest and dividends, or may be forced to sell assets at inopportune times, to meet those obligations. Plans with DROP or other lump sum payment features are particularly exposed to this risk.

One item left off this list is "interest rate risk" (i.e., the potential that interest rates will be different than expected). This risk is common in corporate ERISA plans where funding is based on bond rates. Interest rates on bonds are still an important consideration when setting an expected return assumption and can change over time, along with long-term capital market expectations. Together these may lead to a change in the interest rate used to value plan liabilities which will increase or decrease the measurement of plan liabilities and the actuarially determined contribution.

Quantifying Investment and Funded Status Risk

Although cash and money market funds have the lowest absolute investment risk, they are typically not the lowest risk investment for a pension plan. With respect to interest rate risk, a pension plan liability behaves like the price of a bond because both equal the discounted value of a series of future cash flows. The present value will change in the opposite direction to a change in interest rates. Therefore, a bond portfolio with the timing of expected income cash flows matched to the expected benefit payment outflows is typically the lowest risk investment approach for a pension plan.

Corporate, Treasury, and municipal bonds, often considered lower risk investment classes, can still have a high level of interest rate risk in their present values. If the duration (timing and pattern of income payments) of the fixed income assets are misaligned with the duration of the plan's liability, there can be significant funded status volatility as interest rates change. The way to mitigate this volatility is minimizing the asset/liability (or duration) mismatch risk.

One means of quantifying the expected cost of assuming future investment and asset/liability mismatch risk is to compare the Plan's current assets to a liability calculated assuming very low default risk. One such measure is called a **Low Default-Risk Obligation Measure** (LDROM). An example of an LDROM is the Plan's Funding Liability determined using a discount rate based on the yields on high quality municipal bonds, similar to what is referenced under GASB statement 68.

	Liability Measure	Assumed Return
Actuarial Liability – Funding Policy Return	$33,693,161	7.25%
Actuarial Liability – Municipal Bond Yield (LDROM)	$55,456,955	3.97%
Market Value of Assets	$26,108,884	7.25%

The difference between the LDROM and the Actuarial Liability used to determine funding contributions can be viewed in several ways, and certain views of this measure may be more relevant for some plan sponsors:

- The expected long-term contribution savings to be achieved by investing in asset classes with higher expected risk and returns than bonds.
- The cost of investing in an all-bond portfolio and significantly lowering expected long-term investment returns in exchange for protecting the Plan's current funded status.
- A measure of the Plan's non-diversifiable investment risk.

Investors expect to be compensated for assuming risk when they make an investment. The risk premium of an investment is the return an asset is expected to generate in excess of the risk-free rate of return. The more risk assumed by the investor, the greater the return they expect to achieve in exchange for accepting that risk.

For plans whose assumed long-term rate of return on plan assets is greater than the municipal bond yield used for the LDROM calculation, the expected cost to the plan sponsor of funding the plan will be lower because of the greater level of investment risk accepted. This in turn leads to greater volatility in the plan's funded status because the actual return on plan investments is expected to vary considerably year-to-year. Conversely, if a plan has taken steps to reduce asset/liability mismatch risk, the expected cost of contributions to fund the plan will be greater (if the plan is not already fully funded) and the volatility in the plan's funded status will be reduced.

Selecting the right level of investment risk (and associated asset/liability mismatch risk) for a plan requires complex analysis that goes beyond the scope of these basic disclosures. Included in any such analysis must be an evaluation of the plan sponsor's funding policy.

Risk Considerations in Assessing a Funding Policy

When assessing a plan's funding policy, two primary considerations are:

- Whether the contributions are determined using reasonable and appropriate actuarial cost, amortization, and asset valuation methods (i.e., is the contribution an Actuarially Determined Contribution (ADC)), and
- The projected period until any Unfunded Actuarial Accrued Liability (UAAL) is fully amortized.

Under the current funding policy, the annual contribution is an ADC. The Plan's UAAL is required to be amortized over 22 years, with new layered amortization bases established annually.

Assuming all actuarial assumptions reflected in the annual valuation are met and contributions are made according to the funding policy, the plan's UAAL is expected to decrease in future years. The effect of declining interest rates, investment losses, or other actuarial losses may offset the favorable effect of these contributions and cause the UAAL to remain steady or increase in future years.

The second consideration for plan sponsors is the projected period until full funding. Based on the Plan's amortization policy, if contributions are made as expected based on the current valuation and plan funding policy, and all actuarial assumptions are met, the plan is expected to pay off the UAAL in approximately 22 years. Depending on future actuarial and investment experience, the plan may be projected to reach $0 in UAAL in greater than or fewer than 22 years.

Some examples of changes from year to year that will shorten or lengthen the period until the UAAL is fully amortized include:

Factors that Shorten the Amortization Period	Factors that Lengthen the Amortization Period
Contributing more than the ADC	Contributing less than the ADC
Investment and demographic gains	Investment and demographic losses
Increasing interest rates	Decreasing interest rates
Shorter life expectancies	Longer life expectancies
Reducing or eliminating future benefit accruals	Increasing benefit accruals (past and/or future)

Historical Plan Risk and Maturity Measures

While historical plan experience is no guaranteed predictor of the future, it can be informative in assessing the degree of risk and variability in the annual valuation results year-to-year, and in understanding how certain factors influence future outcomes.

There are several plan maturity measures that can be significant to understanding the risks associated with the plan. The following table shows four commonly used measures of the relative riskiness of a pension plan, relative to the plan sponsor and the employee group covered by the plan and how they have changed over time.

Risk Measure	July 1, 2022	July 1, 2023	July 1, 2024
Inactive Liability as a Percent of Total Liability[1]	65%	63%	65%
Assets to Payroll	7.4	6.4	7.9
Liabilities to Payroll	9.4	9.1	10.2
Benefit Payments to Contributions	0.7	1.0	0.8

The Assets to Payroll ratio, also called the Asset Volatility Ratio (AVR), is equal to the Market Value of Assets (MVA) divided by payroll. A higher AVR implies that the plan is exposed to greater contribution volatility. The current AVR of 7.9 indicates that a:

- 1% asset gain/loss can be related to about 7.9% of the annual payroll.
- The County's contribution changes by about 0.5% of payroll for each 1.0% gain or loss on the market assets (the plan currently amortizes asset gains/losses over a period of 22 years)

The Liabilities to Payroll ratio, also call the Liability Volatility Ratio (LVR), is equal to the Actuarial Accrued Liability (AAL) divided by payroll. A higher LVR implies that the plan is exposed to greater contribution volatility due to changes in liability measurements. The current LVR of 10.2 indicates that a:

- 1% liability gain/loss can be related to about 10.2% of the annual payroll.
- The County's contribution changes by about 0.7% of payroll for each 1.0% gain or loss on the AAL (the plan currently amortizes liability gains/losses over a period of 22 years).

As the plan approaches a 100% funded level, the AVR will converge to the LVR.

The use of payroll in these risk measures is an easily available substitute for the employer's revenue and often reflects the employer's ability to afford the plan. Each of these measures are a measure of plan maturity. The common evolution of a pension plan is to become more mature over time. Mature plans present more risk to plan sponsors because changes to the liability or assets will result in large changes in the unfunded liability as compared to the overall size of the

[1] DROP Participant liability has been included in the Retiree Liability for purposes of this measure.

employer as measured by payroll. As a result, the change in the metrics over time can be as important as the nominal size of the metric itself.

Additional Review

In some instances, more detailed quantitative assessment of risks is warranted either by the above maturity metrics, part of a periodic self-assessment of risks, or due to changes in investment allocations and capital market assumptions. The following are examples of tests that could be performed:

- Scenario Test—A process for assessing the impact of one possible event, or several simultaneously or sequentially occurring possible events, on a plan's financial condition. A scenario test could show, for example, the effect of a layoff or reduction in workforce, or early retirement program.

- Sensitivity Test—A process for assessing the impact of a change in an actuarial assumption on an actuarial measurement. A sensitivity analysis could demonstrate, for example, the impact of a decrease in the valuation discount rate or a change in future life expectancies.

- Stochastic Modeling—A process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes. This type of analysis could show, for example, a range of potential future contribution levels and the likelihood of contributions increasing to a certain level.

- Stress Test—A process for assessing the impact of adverse changes in one or relatively few factors affecting a plan's financial condition. A stress test could show, for example, the impact of a single year or period of several years with significant investment losses.

Section V. Assets

Reconciliation of Assets

Below is a Reconciliation of Assets (unaudited) from July 1, 2022 through June 30, 2024.

			7/1/2022 to 6/30/2023		7/1/2023 to 6/30/2024
1.	Beginning of Year Assets	$	20,843,961	$	22,992,036
2.	Receipts				
	a. Employer Contributions	$	1,375,404	$	1,748,768
	b. Employee Contributions		248,599		255,609
	c. Investment Income & Dividends		496,279		775,006
	d. Realized and Unrealized Gain/(Loss)		1,658,504		1,974,258
	e. Other		7,854		-
	f. Total Receipts	$	3,786,640	$	4,753,641
3.	Deductions				
	a. Benefit Payments	$	1,564,241	$	1,547,400
	b. Administrative Expenses		74,324		89,393
	c. Total Disbursements	$	1,638,565	$	1,636,793
4.	Net Increase (2.f. - 3.c.)	$	2,148,075	$	3,116,848
5.	End of Year Assets (1. + 4.)	$	22,992,036	$	26,108,884
6.	Rate of Return Net of Investment Fees (2I / {A + B - I] Method)		10.38%		11.86%

Determination of Investment Gain/(Loss) for Assets

Market Value of Assets		
As of June 30, 2023	$	22,992,036

Item (1)		Amount (2)	Weighted for Timing (3)		Weighted Amount (2) × (3)
Contributions	$	2,004,377	50%	$	
Benefits Paid		(1,547,400)	50%		(773,700)
Expenses		(89,393)	50%		(44,697)
Total					183,792
Market Value plus Total Weighted Amount					23,175,828
Assumed Rate of Return for the Year					7.25%
Expected Return				**$**	**1,680,248**

Actual Return		
1. Market Value as of June 30, 2023	$	22,992,036
2. Contributions		2,004,377
3. Benefits and Administrative Expenses Paid		(1,636,793)
4. Market Value as of June 30, 2024		26,108,884
5. Actual Return [(4) - (1) - (2) - (3)]	**$**	**2,749,264**
6. Calculation Base (1) + 50% × [(2) + (3)]		23,175,828
7. Market Value Return as a Percentage [(5) / (6)]		11.9%

Investment Gain/(Loss)		
Actual Return minus Expected Return	**$**	**1,069,016**

Development of Actuarial Value of Assets

The actuarial asset value as of July 1, 2024 is determined by spreading the asset gain or loss for each year over a five-year period. The asset gain or loss is the amount by which the actual asset return differs from the expected asset return.

Market Value of Assets		
As of June 30, 2024	$	26,108,884

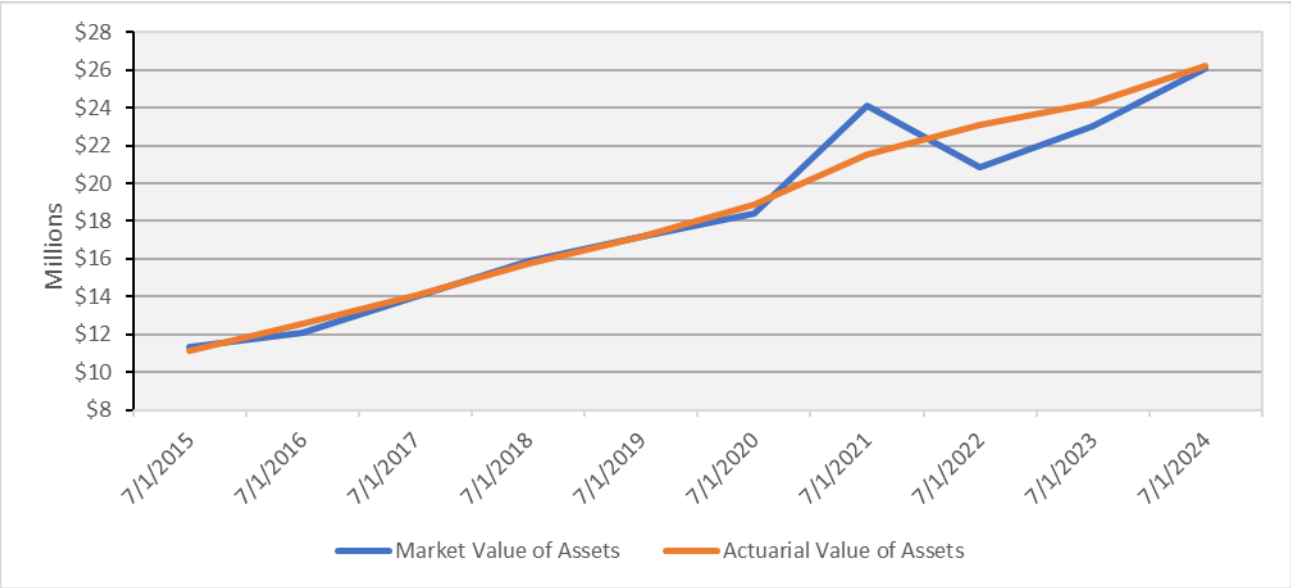
Plan Year End (1)	Investment Gain/(Loss) (2)	Percent Deferred (4)		Deferred Gain/(Loss) (2) × (4)
6/30/2024	1,069,016	80%	$	855,213
6/30/2023	651,978	60%		391,187
6/30/2022	(5,257,862)	40%		(2,103,145)
6/30/2021	3,811,608	20%		762,322
Total Deferred			$	(94,423)

Preliminary Actuarial Value of Assets		
As of July 1, 2024		
(Market Value of Assets less total Deferred Gain/(Loss))	$	26,203,307

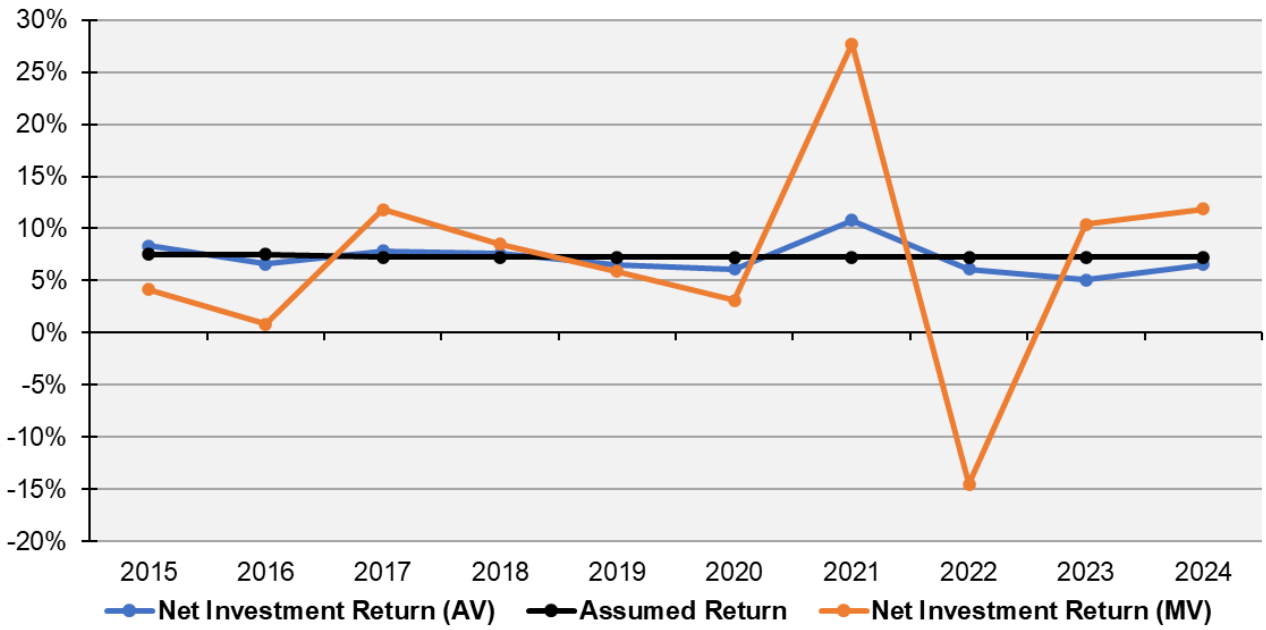
Final Actuarial Value of Assets		
Minimum Actuarial Value of Assets (80% of MVA)		20,887,107
Maximum Actuarial Value of Assets (120% of MVA)		31,330,661
As a Percentage of Market Value		100.4%
Actuarial Value of Assets as of July 1, 2024	**$**	**26,203,307**

Calculation of Actuarial Return		
1. Actuarial Value as of July 1, 2023	$	24,244,054
2. Contributions		2,004,377
3. Benefits and Administrative Expenses Paid		(1,636,793)
4. Actuarial Value as of July 1, 2024		26,203,307
5. Actuarial Return [(4) - (1) - (2) - (3)]		1,591,669
6. Calculation Base (1) + 50% × [(2) + (3)]		24,427,846
7. Actuarial Return as a Percentage [(5) / (6)]		**6.5%**

10-Year: Market Value vs. Actuarial Value of Assets



10-Year: Market Value vs. Actuarial Value Rates of Return



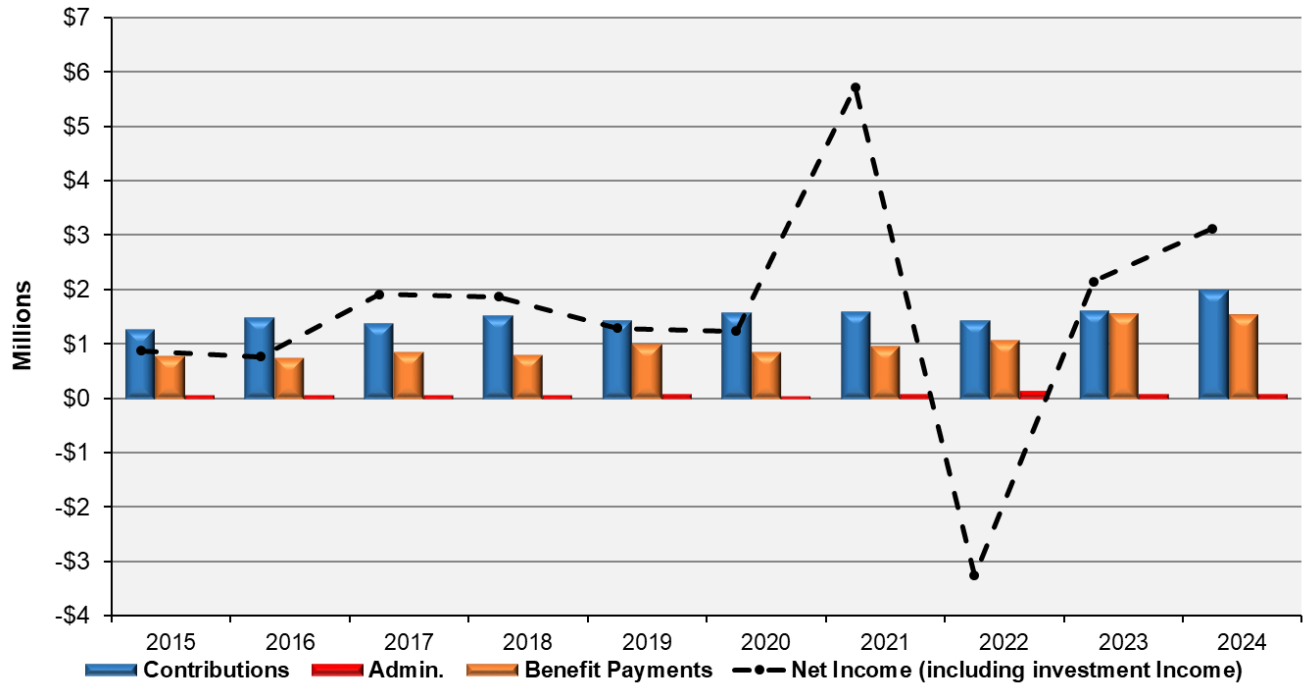
The assumed long-term rate of return 7.25% considers past experience, the Trustees' asset allocation policy and future expectations.

Average Rates of Return	Market Value	Actuarial Value
Most recent year return	11.9%	6.5%
Most recent five-year average return	6.8%	6.9%
Most recent ten-year average return	6.5%	7.1%

Summary of Investment Returns & Historical Cash Flows

Plan Year Ending	Market Value Net Investment Return Amount	Percent	Total Contributions	Benefit Payments	Admin. Expenses	Net Income
2015	$ 440,734	4.1%	$ 1,279,696	$ 785,604	59,651	$ 875,175
2016	89,735	0.8%	1,490,937	757,205	57,161	766,306
2017	1,451,519	11.8%	1,378,911	856,595	58,246	1,915,589
2018	1,222,044	8.5%	1,521,788	811,171	64,817	1,867,844
2019	943,442	5.9%	1,435,655	1,009,776	79,937	1,289,384
2020	550,550	3.1%	1,588,529	851,936	53,395	1,233,748
2021	5,164,524	27.7%	1,603,857	968,659	81,940	5,717,782
2022	(3,501,634)	(14.5%)	1,443,347	1,067,916	131,901	(3,258,104)
2023	2,162,637	10.4%	1,624,003	1,564,241	74,324	2,148,075
2024	2,749,264	11.9%	2,004,377	1,547,400	89,393	3,116,848
Total	**$ 11,272,815**		**$ 15,371,100**	**$ 10,220,503**	**$ 750,765**	**$ 15,672,647**

Comparison of Net Income versus Historical Cash Flows



Benefit Payment Projection

The following table shows the estimated Benefit Payments from July 1, 2024 through June 30, 2034 based on existing members of the plan.

Fiscal Year End		Benefits
2025	$	1,710,610
2026		1,772,664
2027		1,771,026
2028		1,922,984
2029		2,048,952
2030		2,184,410
2031		2,280,786
2032		2,571,396
2033		2,723,239
2034		2,862,440

[2] Benefit payments for fiscal year end 2025 include $194,096 in refunds due. These payments are assumed to be paid immediately as of the valuation date. An expected DROP lump sum payment is included in fiscal year end 2026.

Section VI. Participant Information

Participant Summary

The following table summarizes the counts, ages and benefit information for plan participants used in this valuation.

			7/1/2023		7/1/2024	% Change
1.	Actives, not in DROP					
	a. Number		40		34	(15.0%)
	b. Average Age		40.4		41.3	2.3%
	c. Average Service		7.2		9.0	24.1%
	d. Total Compensation	$	3,578,640	$	3,295,178	(7.9%)
	e. Average Salary	$	89,466	$	96,917	8.3%
2.	Actives, in DROP					
	a. Number		2		1	(50.0%)
	b. Average Age		53.8		52.9	(1.7%)
	c. Total Annual Benefits		111,716		43,518	(61.0%)
	d. Total DROP Account Balances	$	201,599	$	79,414	(60.6%)
3.	Service Retirements, Disabled, and Beneficiaries					
	a. Number		32		33	3.1%
	b. Average Age		60.4		61.3	1.5%
	c. Total Annual Benefit	$	1,279,512	$	1,391,842	8.8%
4.	Vested Terminated					
	a. Number		4		5	25.0%
	b. Average Age		52.9		53.4	0.9%
	c. Total Annual Benefit	$	131,605	$	138,123	5.0%
5.	Refund of Contributions Due					
	a. Number		9		14	55.6%
	b. Total Refunds Due	$	102,904	$	194,096	88.6%

Active Age/Service Distribution Including Compensation

Shown below is the distribution of active participants, excluding those currently enrolled in DROP, based on age and service. The compensation shown is the average rate of pay as of July 1, 2024.

	Years of Service as of 07/01/2024										
Age	**Under 1**	**1-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & Up**	**Total**
Under 25	-	1	-	-	-	-	-	-	-	-	1
	-	78,596	-	-	-	-	-	-	-	-	78,596
25 to 29	-	2	2	-	-	-	-	-	-	-	4
	-	70,974	89,928	-	-	-	-	-	-	-	80,451
30 to 34	-	6	1	-	-	-	-	-	-	-	7
	-	75,648	90,445	-	-	-	-	-	-	-	77,762
35 to 39	-	3	-	2	-	-	-	-	-	-	5
	-	74,983	-	98,110	-	-	-	-	-	-	84,234
40 to 44	-	1	-	1	1	-	-	-	-	-	3
	-	80,640	-	106,363	101,173	-	-	-	-	-	96,059
45 to 49	-	1	-	-	3	1	-	-	-	-	5
	-	78,823	-	-	95,983	121,771	-	-	-	-	97,709
50 to 54	-	2	-	-	1	1	-	-	-	-	4
	-	155,321	-	-	109,519	112,686	-	-	-	-	133,212
55 to 59	-	1	1	1	-	1	-	-	-	-	4
	-	87,257	209,381	90,311	-	103,232	-	-	-	-	122,546
60 to 64	-	-	-	-	-	1	-	-	-	-	1
	-	-	-	-	-	129,530	-	-	-	-	129,530
65 to 69	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
70 & up	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
Total	-	17	4	4	5	4	-	-	-	-	34
	-	85,691	119,921	98,224	99,728	116,805	-	-	-	-	96,917

Averages	
Age	41.3
Service	9.0

Participant Reconciliation

Shown below is the reconciliation of participants between the prior and current valuation date.

	Active Participants	DROP	Inactive Participants		Total
			Receiving Benefits	With Deferred Benefits	
Participants in Last Valuation	40	2	32	13	87
Retired	0	0	0	0	0
Entered DROP	0	0	0	0	0
Exited DROP	0	(1)	1	0	0
Vested Termination	(1)	0	0	1	0
Nonvested Termination	(5)	0	0	5	0
Disabled	0	0	0	0	0
Deceased/Payment Expired	0	0	0	0	0
Benefits Suspended	0	0	0	0	0
Return of Employee Contributions	0	0	0	0	0
New QDRO	0	0	0	0	0
New Participants	0	0	0	0	0
Rehired	0	0	0	0	0
Beneficiary	0	0	0	0	0
Adjustments	0	0	0	0	0
Participants in This Valuation	34	1	33	19	87

Section VII. Summary of Plan Provisions

Plan Year
July 1 – June 30.

Compensation
Regular annual rate of pay, exclusive of extra compensation of any kind such as overtime pay, bonuses, and commissions.

Average Compensation
The average of the highest consecutive 36 months of monthly base pay.

Employee Contributions
7.00% of compensation for all plan members. DROP participants continue to make contributions.

Employee Contributions Benefit
The sum of the employee contributions made by the Participant and interest, including contributions made to other Maryland employers and transferred to this Plan. Interest on the amounts described is equal to 5% of any amount contributed or transferred prior to the current Plan Year and 2.5% of the amounts contributed during the current Plan Year.

Years of Service
Service includes:
1. Time as an active member contributing to the plan.
2. Unused sick leave (22 days = 1 month).
3. Service prior to July 1, 2001 under the State plan that was transferred to this plan at its inception.
4. For employees hired before July 1, 2001, up to five years of pre-employment military service if eligible under the State plan. If not eligible under the State plan, up to five years of pre-employment military service may be credited after 10 years of credited service with the plan.

Normal Retirement Age
25 years of service, or age 62 with 5 years of service, if earlier.

Benefit Formula
2% of average compensation for each year of service earned. Total service is limited to 30 years.

The above amount will be increased by 2% of average compensation for each year of service attributable to unused sick leave (limited to 2 years).

Note: prior to the latest plan amendment effective 7/1/2009, each year of service earned prior to 7/1/2000 was credited with 1.5% of average compensation. Total service was limited to 25 years.

Deferred Retirement Option Program (DROP)

Effective March 1, 2021, members with at least 25 years of service may elect to enter the deferred retirement option program (DROP). Upon entering DROP, members must elect a DROP Participation Period equal to 3 years and complete a benefit election form. The benefit election form includes an irrevocable election of form of benefit.

The member's retirement benefit is calculated as of DROP entry and the monthly benefits are accumulated in a notional DROP account during the Participation Period. COLAs are not earned while in DROP. COLAs start being earned at least one year after DROP exit and are earned on the valuation date. The DROP account is credited monthly with interest based on a 5% annual rate. No interest is earned on additions to the account made during the current calendar month. During enrollment, employee contributions are paid by the participant but are not accumulated in the notional DROP account. If DROP members retire or become disabled prior to completing the participation period, the member is treated as if they never elected DROP i.e., DROP account balances are forfeited. If the member dies prior to completing the participation period, DROP account balances and normal death benefits are paid to survivors.

Currently, there is a limit to the number of DROP participants allowed in the Plan. There was a limit of 3 members for the year ending June 30, 2021, 6 members for the year ending June 30, 2022, and 25% of actives for the year ending June 30, 2023 and later.

Early Retirement

Age 55 with at least 15 years of service. Benefit is reduced actuarially from normal retirement date.

Termination Prior to Retirement

Vesting Date

5 years of service

Termination prior to Vesting Date

Return of employee contributions with 5.00% interest.

Termination on or after Vesting Date

At the discretion of the employee, either a return of contributions with interest or the accrued normal retirement benefit taking into account final earnings and service at date of termination, payable at normal retirement date or early retirement date, actuarially reduced.

Disability Benefit

Must be totally and permanently disabled (except as the result of activities specified in the City code) regardless of length of service.

Catastrophic Line of Duty Disability

The greater of:
(a) the benefit due to employee contributions or
(b) 66 2/3% of base pay.

Non-Catastrophic Line of Duty Disability

The greater of:
(a) the benefit due to employee contributions or
(b) 50% of base pay.

Ordinary Disability

5 Years of Service is required for this benefit.

The benefit is equal to the accrued benefit, without actuarial reduction.

If a participant is under age 62, or has earned less than 25 years of credited service as of the disability date, the years of credited service are projected. They include both the actual years of credited service, plus any credited service which would have otherwise been earned as of the earlier of the participant's 62nd birthday or the date the participant would have earned 25 years of credited service.

Pre-Retirement Spouse's Benefit

Line of Duty Death Benefit

If the participant is unmarried at his date of death, his beneficiary is entitled to receive a refund of the participant's contributions with interest, plus a single lump sum equal to the participant's compensation as of the date of death.

If the participant is married or has a registered domestic partner at the date of death and is eligible for normal or early retirement, his surviving spouse or partner may receive the benefit described above, or an annuity for the spouse's or partner's lifetime or earlier remarriage/re-registration, equal to a 66 2/3% of base pay. Upon the death or remarriage/re-registration of the surviving spouse or domestic partner, a benefit equal to 50% of base pay will be paid to the surviving children.

If the participant is not married and has designated one or more child as the primary beneficiary, the surviving children will receive an aggregate annuity equal to 50% of base pay. This benefit ceases upon the attainment of age 18, or 23 if a full-time student.

Non-Line of Duty Death Benefit

If the participant is unmarried at his date of death, his beneficiary is entitled to receive a refund of the participant's contributions with interest, plus a single lump sum equal to the participant's compensation as of the date of death.

If the participant is married or has a registered domestic partner at the date of death and is eligible for normal or early retirement, his surviving spouse or partner may receive the benefit described above, or an annuity for the spouse's or partner's lifetime, equal to the Joint and 100% Survivor benefit that would have been payable upon the participant's death.

Normal Form of Benefit

Single Life Annuity with death benefit of undistributed employee contributions plus accumulated interest at retirement. Other forms are the actuarial equivalent.

Alternative Forms of Benefit

Alternative forms of payment available to employees at retirement include:

- Life annuity with guaranteed payment of the employee's contributions plus accumulated interest at retirement.
- Joint and Survivor 50% Annuity
- Joint and Survivor 100% Annuity
- Joint and Survivor 50% Annuity with Pop-Up
- Joint and Survivor 100% Annuity with Pop-Up

Actuarial Equivalence

Actuarial Equivalence is determined using 8.00% interest rate and 417(e) applicable mortality tables.

Post Retirement Cost of Living Increases

CPI index, but no more than would cause the participant's benefit to exceed an amount equal to the original benefit compounded at 3% per year.

Changes Since Prior Valuation

None.

Section VIII. Actuarial Methods and Assumptions

Funding Method

Projected Unit Credit Actuarial Cost Method. The contribution equals the sum of the normal cost and the amount necessary to amortize the unfunded actuarial liabilities according to the amortization policy. Disability attribution method for those hired on or after July 1, 2003 is linear to decrement. Benefits for Members who have entered DROP are treated as fully accrued.

Amortization Policy

The unfunded actuarial accrued liability (UAAL) is amortized as a level percentage of payroll as follows:

- Gains and losses over 22 years
- Assumption changes over 22 years
- Plan improvements over 22 years

Different amortization periods were utilized prior to 1/1/2014.

Amortization payments increase 2.75% per year. Payments for amortization bases established prior to July 1, 2018 increase 4.00% per year.

Asset Method

Asset smoothing method which spreads the investment gains or losses in excess of the assumed return over a five-year period.

Discount Rate and Investment Rate of Return

7.25% compounded annually, net of investment expenses. This assumption is based on the plan's investment policy and the long-term expectation of each investment class, based upon the recommendations of the plan's investment advisor.

Payroll Growth

2.75% compounded annually.

Inflation

2.75%, compounded annually.

Post-Retirement COLA Increases

3% compounded annually, no limit.

Salary Increases

5.5% compounded annually.

Mortality

Pub-2010 Safety Tables for Employees, Retirees, Beneficiaries, and Disabled Participants projected generationally using MP-2021.

Projection to the year of the valuation is assumed to be current mortality experience. Generational projection beyond the valuation date is assumed to account for future mortality improvements.

100% of pre-retirement deaths are assumed to be non-duty related.

Retirement

Probabilities of retirement or DROP entry are: 70% at 25 years, 10% at 26-29 years, and 100% at 30 years or age 62.

Termination of Employment

Sample rates are:

	Rates by Service		
Age	0 – 9	10 - 14	15 and over
25	6.179%	4.634%	1.236%
35	5.021%	3.766%	1.004%
45	3.180%	2.385%	0.636%

Rates are 75% of the initial rates between 10 and 15 years of service and 20% of the initial rates after 15 years. Employees that terminate employment before age 50 are assumed to withdraw their contributions.

Disability

Sample rates are:

Age	Rates
25	0.55%
35	1.02%
45	2.64%

50% of disabilities are assumed to be line-of-duty. 33.33% of the line-of-duty disabilities are assumed to be catastrophic and 66.67% are considered non-catastrophic.

Marriage

It is assumed that 80% of employees are married. Husbands are assumed to be 3 years older than wives.

Sick Leave

Accrued benefit loaded 3.4% for unused sick leave credit.

Pre-Employment Military Service

Actual service credit as provided in census.

Administrative Expenses
Employer normal cost includes assumed administrative expenses equal to the average of the actual expenses of the two fiscal years preceding the date of the valuation.

Pay Limit
None.

Compensation
Pensionable pay was calculated by dividing the employee contributions for the year by the employee contribution rate..

Changes Since Prior Valuation
None.

Appendix 1

Summary of Funding Progress

Valuation Date	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability	(3) Percentage Funded (1) / (2)	(4) Unfunded Actuarial Accrued Liability (2) - (1)	(5) Annual Covered Payroll3	(6) Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll (4) / (5)
7/1/2008	$4,500,963	$13,402,672	33.60%	$8,901,709	$2,383,190	373.5%
7/1/2009	$4,035,510	$14,355,855	28.11%	$10,320,345	$2,671,071	386.4%
7/1/2010	$5,058,336	$15,094,744	33.51%	$10,036,408	$2,713,518	369.9%
7/1/2011	$6,795,093	$16,397,138	41.44%	$9,602,045	$2,774,501	346.1%
7/1/2012	$7,808,944	$19,146,415	40.79%	$11,337,471	$2,673,827	424.0%
7/1/2013	$8,700,353	$20,508,708	42.42%	$11,808,355	$2,849,563	414.4%
7/1/2014	$9,867,595	$20,487,736	48.16%	$10,620,141	$2,570,207	413.2%
7/1/2015	$11,141,355	$21,161,355	52.65%	$10,020,000	$2,843,149	352.4%
7/1/2016	$12,575,165	$22,825,234	55.09%	$10,250,069	$2,777,426	369.0%
7/1/2017	$14,046,725	$25,057,687	56.06%	$11,010,962	$2,889,222	381.1%
7/1/2018	$15,782,136	$25,291,501	62.40%	$9,509,365	$3,025,166	314.3%
7/1/2019	$17,160,772	$25,716,882	66.73%	$8,556,110	$3,013,969	283.9%
7/1/2020	$18,910,500	$26,544,845	71.24%	$7,634,345	$3,278,860	232.8%
7/1/2021	$21,534,146	$27,058,421	79.58%	$5,524,275	$3,368,703	164.0%
7/1/2022	$23,094,143	$29,570,859	78.10%	$6,476,716	$3,137,727	206.4%
7/1/2023	$24,244,054	$32,484,400	74.63%	$8,240,346	$3,578,655	230.3%
7/1/2024	$26,203,307	$33,693,161	77.77%	$7,489,854	$3,295,181	227.3%

Analysis of the dollar amounts of net assets available for benefits, actuarial accrued liability, and unfunded actuarial accrued liability in isolation can be misleading. Expressing the net assets available for benefits as a percentage of the actuarial accrued liability provides one indication of funding status on a going-concern basis. Analysis of this percentage over time indicates whether the plan is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the plan. Trends in unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Expressing the unfunded actuarial accrued liability as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids analysis of the City's progress made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the plan.

[3] Annual covered payroll does not include pay for participants currently enrolled in DROP.

Appendix 2 – Glossary

Actuarial Accrued Liability (AAL)
The difference between the Present Value of Future Benefits and the Present Value of Future Normal Costs or the portion of the present value of future benefits allocated to service before the valuation date in accordance with the actuarial cost method. Represents the present value of benefits expected to be paid from the plan in the future allocated to service prior to the date of the measurement.

Actuarial Assumptions
Estimates of future plan experience such as investment return, expected lifetimes and the likelihood of receiving a pension from the pension plan. Demographic, or "people" assumptions include rates of mortality, retirement and separation. Economic, or "money" assumptions, include expected investment return, inflation and salary increases. Assumptions of a long-term nature are representative of average expectations (i.e., they will not be exactly realized in every year, however over an extended period are a reasonable projection of future outcomes).

Actuarial Cost Method
A procedure for allocating the Present Value of Future Benefits into the Present Value of Future Normal Costs and the Actuarial Accrued Liability. Also known as the "funding method".

Actuarial or Experience Gain or Loss
A measure of the difference between actual experience and experience anticipated by a set of Actuarial Assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used. Such gains or losses are not actual economic gains or losses immediately incurred by a plan, as experience in future years could offset the effect of experience in a single year due to the typically long-term average nature of actuarial assumptions.

Actuarial Value of Assets (AVA)
The value of the assets as of a given date, used by the actuary for valuation purposes. The AVA 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 contribution (ADC).

Actuarially Determined Contribution (ADC)
The employer's periodic determined contribution to a pension plan, calculated in accordance with the assumptions and methods used by the plan actuary.

Amortization Method
A procedure for payment of the Unfunded Actuarial Accrued Liability (UAAL) by means of periodic contributions of interest and principal. The components of the amortization payment for the UAAL includes the amortization period length, amortization payment increase (level dollar or level percentage of pay), and amortization type (closed or open).

Funded Ratio
The actuarial value of assets expressed as a percentage of the plan's actuarial accrued liability.

Low Default-Risk Obligation Measure (LDROM)
The present value of benefits accrued at the valuation date using actuarial assumptions that are generally the same as those used in determining the plan's funding liability, with the discount rate changed to reflect the expected return on a low-default-risk investment portfolio. For plans using a funding method that does not quantify gains and losses annually (but rather spreads them over future years through the changes in the normal cost), the actuarial cost method is also changed to reflect a different pattern of allocating costs to historical periods than is used to determine the ADC.

Market Value of Assets (MVA)
The value of the assets as of a given date held in the trust available to pay for benefits of the pension plan.

Normal Cost
That portion of the Present Value of Future Benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

Present Value of Future Benefits (PVFB)
The 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.

Present Value of Future Normal Cost (PVFNC)
The portion of the Present Value of Future Benefits (PVFB) allocated to future service.

Unfunded Actuarial Accrued Liabilities (UAAL)
The difference between the Actuarial Accrued Liability (AAL) and the Actuarial Value of Assets (AVA).