City of Atlanta
Firefighters' Pension Fund

Actuarial Valuation
As of July 1, 2022

Determines the Contribution
For the 2023/24 Fiscal Year

SOUTHERN ACTUARIAL SERVICES

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June 19, 2023

Introduction

This report presents the results of the July 1, 2022 actuarial valuation of the City of Atlanta Firefighters' Pension Fund. This valuation is based upon the participant data provided as of July 1, 2022 by the plan administrator and asset information provided as of June 30, 2022 by the City. Except for a cursory review for reasonableness, we have not attempted to verify the accuracy of this information.

The primary purpose of this report is to provide a summary of the funded status of the plan as of July 1, 2022 and to determine the minimum required contribution under Georgia Code Section 47-20-10 for the City's 2023/24 fiscal year. In addition, this report provides a projection of the long-term funding requirements of the plan, statistical information concerning the assets held in the trust, statistical information concerning the participant population, and a summary of any recent plan changes.

The liabilities and cost presented in this report are based on numerous assumptions concerning the cost of benefits to be provided in the future, long-term investment returns, and the future demographic experience of the current participants. Anyone referring to this report should remember that the cost developed herein is only an *estimate* of the true cost of providing post-employment pension benefits. No one can predict with certainty whether the true cost will be higher or lower than the cost presented in this report. The calculated cost is entirely dependent upon the assumptions that are described in Table IV-A. If any of the assumptions is changed, then the cost shown in this report will change accordingly. Likewise, if any of the assumptions is not completely realized, then the cost shown in this report will change in the future.

Certain assumptions play a bigger role than others in determining the cost of the post-employment pension benefits. In some cases, relatively small changes in a particular assumption can have a dramatic impact on the anticipated cost of benefits. Although a thorough analysis of the impact of such changes is beyond the scope of this report, Table I-B illustrates the impact that alternative long-term investment returns would have on the minimum required contribution rate.

Minimum Required Contribution

Table I-A shows the development of the minimum required contribution for the City's 2023/24 fiscal year. The minimum required contribution rate is 49.53% of covered payroll, which represents a decrease of 1.66% of payroll from the prior valuation.

Table I-C provides a breakdown of the sources of change in the contribution rate. Significantly, the rate decreased by 0.02% of payroll due to investment gains and decreased by another 1.64% of payroll due to demographic experience. Although the market value of assets lost 14.71% during the 2021/22 plan year, the actuarial value of assets is based on a five-year phase-in of the unexpected investment gains and losses that occur after June 30, 2019. On this basis, the actuarial value of assets earned 7.02%, whereas a 7.00% annual investment return was required to maintain a stable contribution rate.

Georgia Code Section 47-20-10 sets forth many of the rules concerning the minimum required contribution for public pension plans within the state. In addition, Georgia Code Section 47-20-13 exempts public plan sponsors from the minimum funding requirements if the plan's actuarial value of assets exceeds 150% of the present value of accumulated retirement system benefits.

Based on the current assets, participant data, and actuarial assumptions and methods that are used to value the plan, the present-day value of the total long-term funding requirement is $1,183,907,164 excluding future administrative expenses after June 30, 2024. As illustrated in Table I-A, current assets are sufficient to cover $830,542,195 of this amount, the employer's expected contribution for the 2022/23 plan year will cover $27,873,970 of this amount, the employer's expected contribution for the 2023/24 plan year will cover $27,779,248 of this amount, and future employee contributions will cover $49,245,178 of this amount, leaving $248,466,573 to be covered by future employer funding beyond the 2023/24 plan year. Again, demographic and investment experience that differs from that assumed will either increase or decrease the future employer funding requirement.

Identification and Assessment of Risk

The liabilities and cost presented in this report are based on numerous assumptions concerning the cost of benefits to be provided in the future, long-term investment returns, and the future demographic experience of the current participants. Anyone referring to this report should remember that the cost developed herein is only an *estimate* of the true cost of providing post-employment pension benefits. No one can predict with certainty whether the true cost will be higher or lower than the cost presented in this report. The calculated cost is entirely dependent upon the assumptions that are described in Table IV-A. If any of the assumptions is changed, then the cost shown in this report will change accordingly. Likewise, there is always a risk that, should these assumptions not be realized, the liabilities of the plan, the contributions required to fund the plan, and the funded status of the plan may be significantly different than the amounts shown in this report.

Although a thorough analysis of the risk of not meeting the assumptions is beyond the scope of this report, this discussion is intended to identify the significant risks faced by the plan. In some cases, a more detailed review of the risks, including numerical analysis, may be appropriate to help the plan sponsor and other interested parties assess the specific impact of not realizing certain assumptions. For example, Table I-B illustrates the impact that alternative long-term investment returns would have on the contribution rate. Note that this report is not intended to provide advice on the management or reduction of the identified risks nor is this report intended to provide investment advice.

The most significant risk faced by most defined benefit pension plans is investment risk, i.e. the risk that long-term investment returns will be less than assumed. Other related risks include a risk that, if the investments of the plan decline dramatically over a short period of time (such as occurred with many pension plans in 2008), the plan's assets may not have sufficient time to recover before benefits become due. Even if the assets of the plan grow in accordance with the assumed investment return over time, if benefit payments are expected to be large in the short-term (for example, if the plan provides an actuarial equivalent lump sum payment option and a large number of participants are expected to become entitled to such a lump sum in the near future), the plan's assets may not be sufficient to support such a high level of benefit payments. We have provided a 10-year projection of the expected benefit payments in Table III-F to help the Trustees in formulating an investment policy that is expected to provide an investment return that meets both the short- and long-term cash flow needs of the pension plan.

Another source of risk is demographic experience. This is the risk that participants will receive salary increases that are different than the amount assumed, that participants will retire, become disabled, or terminate their employment at a rate that is different than assumed, and that participants will live longer than assumed, just to cite a few examples of the demographic risk faced by the plan. Although for most pension plans, the demographic risk is not as significant as the investment risk, particularly in light of the fact that the mortality assumption includes a component for future life expectancy increases, the demographic risk can nevertheless be a significant contributing factor to liabilities and contribution rates that become higher than anticipated.

A third source of risk is the risk that the plan sponsor (or other contributing entities) will not make, or will not have the ability to make, the contributions that are required to keep the plan funded at a sufficient level. Material changes in the number of covered employees, covered payroll, and, in some cases, hours worked by active participants can also significantly impact the plan's liabilities and the level of contributions received by the plan.

Finally, an actuarial funding method has been used to allocate the gap between projected liablities and assets to each year in the future. The contribution rate under some funding methods is higher during the early years of the plan and then is lower during the later years of the plan. Other funding methods provide for lower contribution rates initially, with increasing contribution rates over time.

The Trustees have adopted the individual entry age normal funding method for this plan with payments towards the unfunded accrued liability that increase at the rate of 3.00% per year, which is expected to result in a contribution rate that decreases over time as a percentage of payroll. A brief description of the actuarial funding method is provided in Table IV-A.

Contents of the Report

Tables I-D through I-G provide a detailed breakdown of various liability amounts by type of benefit and by participant group. Tables II-A through II-F provide information concerning the assets of the trust fund. Specifically, Table II-A shows the development of the actuarial value of assets, which is based on the market value. Tables III-A through III-F provide statistical information concerning the plan's participant population. In particular, Table III-F gives a 10-year projection of the cash that is expected to be required from the trust fund in order to pay benefits to the current group of participants. Finally, Tables IV-A through V-B provide a summary of the actuarial assumptions and methods that are used to value the plan's benefits and of the relevant plan provisions as of July 1, 2022, as well as a summary of the changes that have occurred since the previous valuation report was prepared.

Certification

This actuarial valuation was prepared by me or under my direct supervision and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate and, in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Georgia Code Section 47-20-10. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material change in plan costs or required contribution rates have been taken into account in the valuation.

For the firm,

Charles T. Carr/cig

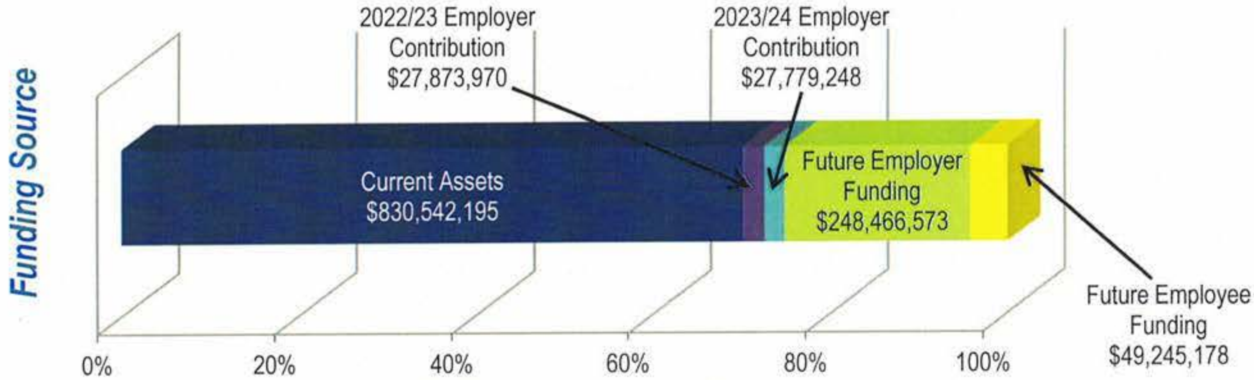
Charles T. Carr
Consulting Actuary
Southern Actuarial Services Company, Inc.

Enrolled Actuary No. 23-04927

The individual above is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Minimum Required Contribution

Table I-A



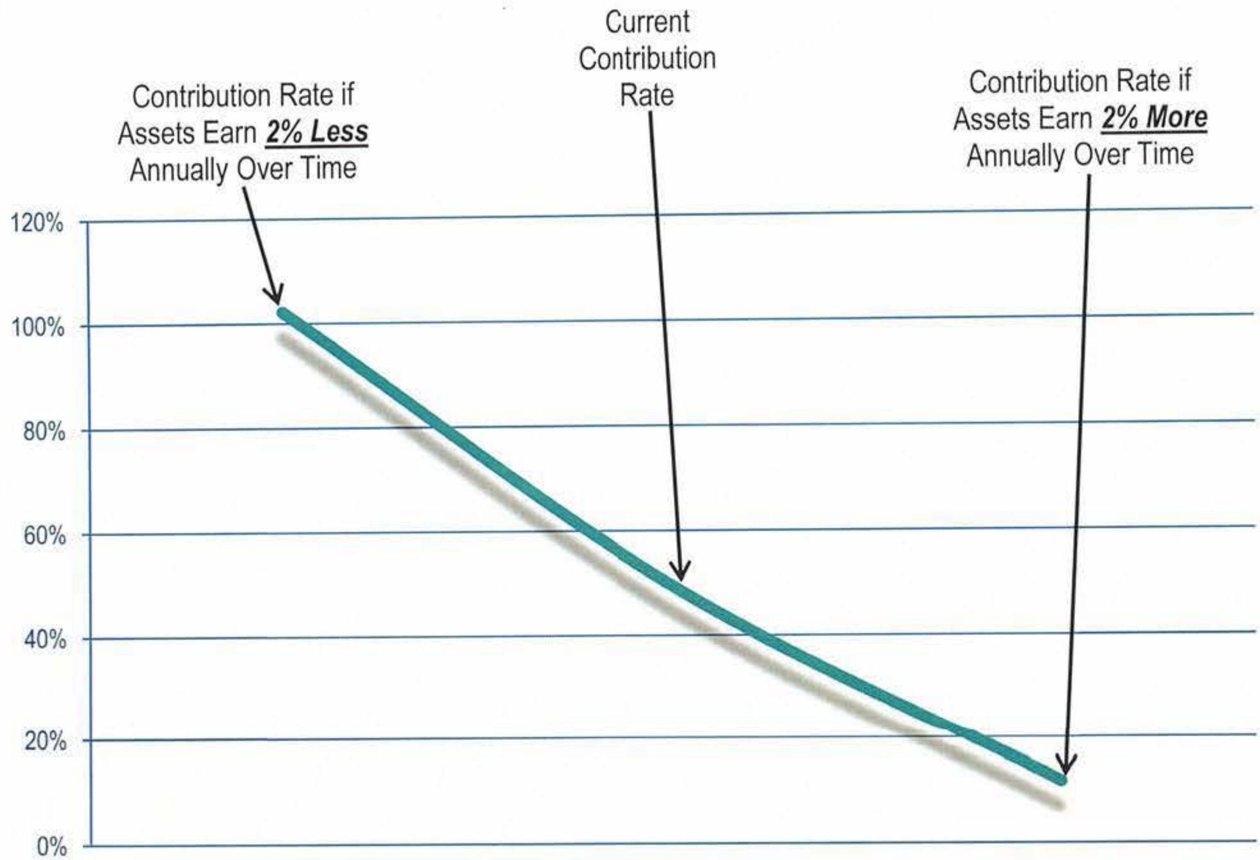
	For the 2023/24 Fiscal Year
Entry Age Normal Cost for the 2022/23 Plan Year	$10,255,660
Unfunded Liability Amortization Payment for the 2022/23 Plan Year	$20,555,561
Expense Allowance for the 2022/23 Plan Year	$532,753
Expected Employee Contribution for the 2022/23 Plan Year	($5,270,952)
Interest Adjustment	$1,706,226
Preliminary Employer Contribution for the 2023/24 Fiscal Year	$27,779,248
Expected Payroll for the 2023/24 Fiscal Year	*÷ $56,085,542*
Minimum Required Contribution Rate	**49.53%**

(The actual contribution should be based on the minimum required contribution rate multiplied by the actual payroll for the fiscal year.)

Additional Disclosures	
Present Value of Future Compensation	$508,889,540
Present Value of Future Employer Contributions	$304,119,791
Present Value of Future Employee Contributions	$49,245,178

Sensitivity Analysis

Table I-B



The line above illustrates the sensitivity of the contribution rate to changes in the long-term investment return.

Gain and Loss Analysis

Table I-C

Source of Change in the Contribution Rate

Previous minimum required contribution rate	51.19%
Increase (decrease) due to investment gains and losses	-0.02%
Increase (decrease) due to demographic experience	-1.64%
Increase (decrease) due to plan amendments	0.00%
Increase (decrease) due to actuarial assumption changes	0.00%
Increase (decrease) due to actuarial method changes	0.00%
Current minimum required contribution rate	49.53%

Source of Change in the Unfunded Liability

Previous unfunded liability	$270,155,746
Increase due to interest	$18,910,902
Decrease due to amortization payments	($18,938,522)
Increase (decrease) due to plan experience	$13,127,927
Increase (decrease) due to plan amendments	$0
Increase (decrease) due to actuarial assumption changes	$0
Increase (decrease) due to actuarial method changes	$0
Current unfunded liability	$283,256,053

Present Value of Future Benefits

Table I-D

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
Actively Employed Participants			
Retirement benefits	$367,088,187	$367,088,187	$367,088,187
Termination benefits	$3,734,878	$3,734,878	$3,734,878
Disability benefits	$4,266,488	$4,266,488	$4,266,488
Death benefits	$1,879,010	$1,879,010	$1,879,010
Refund of employee contributions	$257,594	$257,594	$257,594
Sub-total	**$377,226,157**	**$377,226,157**	**$377,226,157**
Deferred Vested Participants			
Retirement benefits	$1,833,782	$1,833,782	$1,833,782
Termination benefits	$0	$0	$0
Disability benefits	$0	$0	$0
Death benefits	$0	$0	$0
Refund of employee contributions	$0	$0	$0
Sub-total	**$1,833,782**	**$1,833,782**	**$1,833,782**
Due a Refund of Contributions	**$1,077,141**	**$1,077,141**	**$1,077,141**
Deferred Beneficiaries	**$0**	**$0**	**$0**
Retired Participants			
Service retirements	$673,889,092	$673,889,092	$673,889,092
Disability retirements	$63,112,944	$63,112,944	$63,112,944
Beneficiaries receiving	$66,768,048	$66,768,048	$66,768,048
DROP participants	$0	$0	$0
Sub-total	**$803,770,084**	**$803,770,084**	**$803,770,084**
Grand Total	**$1,183,907,164**	**$1,183,907,164**	**$1,183,907,164**

Present Value of Accrued Benefits

Table I-E

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
Actively Employed Participants			
Retirement benefits	$228,824,444	$228,824,444	$228,824,444
Termination benefits	$1,331,223	$1,331,223	$1,331,223
Disability benefits	$2,821,842	$2,821,842	$2,821,842
Death benefits	$1,213,926	$1,213,926	$1,213,926
Refund of employee contributions	$112,213	$112,213	$112,213
Sub-total	**$234,303,648**	**$234,303,648**	**$234,303,648**
Deferred Vested Participants			
Retirement benefits	$1,833,782	$1,833,782	$1,833,782
Termination benefits	$0	$0	$0
Disability benefits	$0	$0	$0
Death benefits	$0	$0	$0
Refund of employee contributions	$0	$0	$0
Sub-total	**$1,833,782**	**$1,833,782**	**$1,833,782**
Due a Refund of Contributions	**$1,077,141**	**$1,077,141**	**$1,077,141**
Deferred Beneficiaries	**$0**	**$0**	**$0**
Retired Participants			
Service retirements	$673,889,092	$673,889,092	$673,889,092
Disability retirements	$63,112,944	$63,112,944	$63,112,944
Beneficiaries receiving	$66,768,048	$66,768,048	$66,768,048
DROP participants	$0	$0	$0
Sub-total	**$803,770,084**	**$803,770,084**	**$803,770,084**
Grand Total	**$1,040,984,655**	**$1,040,984,655**	**$1,040,984,655**
Funded Percentage	73.99%	73.99%	73.99%

(Note: Funded percentage is equal to the ratio of the usable portion of the market value of assets divided by the present value of accrued benefits.)

Present Value of Vested Benefits

Table I-F

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
Actively Employed Participants			
Retirement benefits	$225,046,939	$225,046,939	$225,046,939
Termination benefits	$960,136	$960,136	$960,136
Disability benefits	$2,821,842	$2,821,842	$2,821,842
Death benefits	$1,211,514	$1,211,514	$1,211,514
Refund of employee contributions	$483,290	$483,290	$483,290
Sub-total	**$230,523,721**	**$230,523,721**	**$230,523,721**
Deferred Vested Participants			
Retirement benefits	$1,833,782	$1,833,782	$1,833,782
Termination benefits	$0	$0	$0
Disability benefits	$0	$0	$0
Death benefits	$0	$0	$0
Refund of employee contributions	$0	$0	$0
Sub-total	**$1,833,782**	**$1,833,782**	**$1,833,782**
Due a Refund of Contributions	**$1,077,141**	**$1,077,141**	**$1,077,141**
Deferred Beneficiaries	**$0**	**$0**	**$0**
Retired Participants			
Service retirements	$673,889,092	$673,889,092	$673,889,092
Disability retirements	$63,112,944	$63,112,944	$63,112,944
Beneficiaries receiving	$66,768,048	$66,768,048	$66,768,048
DROP participants	$0	$0	$0
Sub-total	**$803,770,084**	**$803,770,084**	**$803,770,084**
Grand Total	**$1,037,204,728**	**$1,037,204,728**	**$1,037,204,728**

Entry Age Normal Accrued Liability

Table I-G

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
Actively Employed Participants			
Retirement benefits	$301,386,893	$301,386,893	$301,386,893
Termination benefits	$1,491,890	$1,491,890	$1,491,890
Disability benefits	$2,653,305	$2,653,305	$2,653,305
Death benefits	$1,478,174	$1,478,174	$1,478,174
Refund of employee contributions	$106,979	$106,979	$106,979
Sub-total	**$307,117,241**	**$307,117,241**	**$307,117,241**
Deferred Vested Participants			
Retirement benefits	$1,833,782	$1,833,782	$1,833,782
Termination benefits	$0	$0	$0
Disability benefits	$0	$0	$0
Death benefits	$0	$0	$0
Refund of employee contributions	$0	$0	$0
Sub-total	**$1,833,782**	**$1,833,782**	**$1,833,782**
Due a Refund of Contributions	**$1,077,141**	**$1,077,141**	**$1,077,141**
Deferred Beneficiaries	**$0**	**$0**	**$0**
Retired Participants			
Service retirements	$673,889,092	$673,889,092	$673,889,092
Disability retirements	$63,112,944	$63,112,944	$63,112,944
Beneficiaries receiving	$66,768,048	$66,768,048	$66,768,048
DROP participants	$0	$0	$0
Sub-total	**$803,770,084**	**$803,770,084**	**$803,770,084**
Grand Total	**$1,113,798,248**	**$1,113,798,248**	**$1,113,798,248**
less Actuarial Value of Assets	*($830,542,195)*	*($830,542,195)*	*($830,542,195)*
Unfunded Accrued Liability	**$283,256,053**	**$283,256,053**	**$283,256,053**

Entry Age Normal Cost

Table I-H

	Old Assumptions w/o Amendment	Old Assumptions w/ Amendment	New Assumptions w/ Amendment
Actively Employed Participants			
Retirement benefits	$9,579,442	$9,579,442	$9,579,442
Termination benefits	$307,240	$307,240	$307,240
Disability benefits	$232,351	$232,351	$232,351
Death benefits	$64,145	$64,145	$64,145
Refund of employee contributions	$72,482	$72,482	$72,482
Sub-total	**$10,255,660**	**$10,255,660**	**$10,255,660**
Deferred Vested Participants			
Retirement benefits	$0	$0	$0
Termination benefits	$0	$0	$0
Disability benefits	$0	$0	$0
Death benefits	$0	$0	$0
Refund of employee contributions	$0	$0	$0
Sub-total	**$0**	**$0**	**$0**
Due a Refund of Contributions	**$0**	**$0**	**$0**
Deferred Beneficiaries	**$0**	**$0**	**$0**
Retired Participants			
Service retirements	$0	$0	$0
Disability retirements	$0	$0	$0
Beneficiaries receiving	$0	$0	$0
DROP participants	$0	$0	$0
Sub-total	**$0**	**$0**	**$0**
Grand Total	**$10,255,660**	**$10,255,660**	**$10,255,660**

Actuarial Value of Assets

Table II-A

Net Unexpected Investment Gain (Loss)			*Unrecognized Gain (Loss)*
For the 2019/20 plan year	*($32,110,477)*	*x 40%*	*($12,844,191)*
For the 2020/21 plan year	*$186,305,858*	*x 60%*	*$111,783,515*
For the 2021/22 plan year	*($199,066,899)*	*x 80%*	*($159,253,519)*
			($60,314,195)

Market Value of Assets as of July 1, 2022	$770,228,000
Minus advance employer contributions	$0
Adjustment for unrecognized gain or loss as shown above, but restricted to an amount that keeps the actuarial value of assets within an 80%-120% corridor of the market value	$60,314,195
Actuarial Value of Assets as of July 1, 2022	**$830,542,195**

Historical Actuarial Value of Assets	
July 1, 2013	$561,450,000
July 1, 2014	$658,508,000
July 1, 2015	$644,649,000
July 1, 2016	$612,637,000
July 1, 2017	$669,508,000
July 1, 2018	$718,133,000
July 1, 2019	$727,344,000
July 1, 2020	$742,106,382
July 1, 2021	$798,950,600
July 1, 2022	$830,542,195

Market Value of Assets

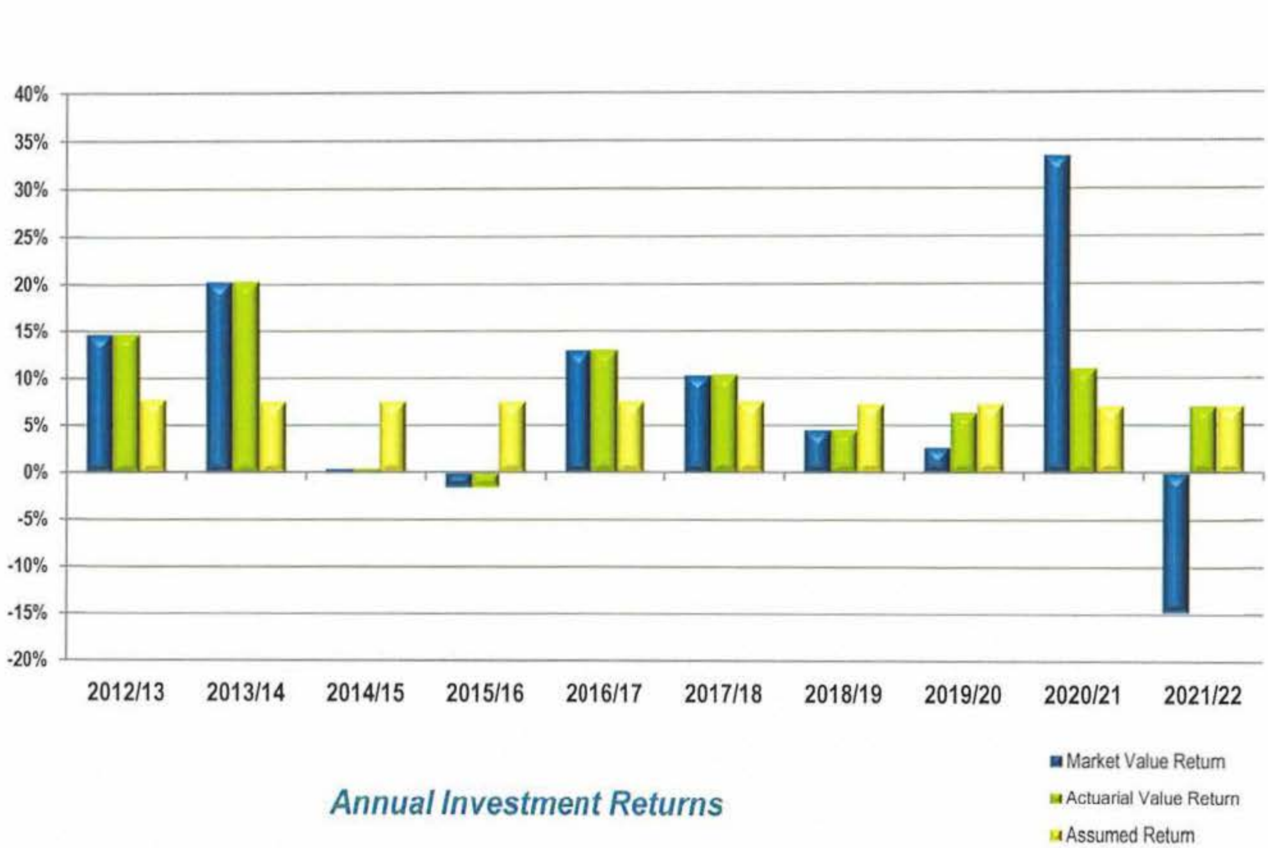
Table II-B

	As of July 1, 2022
Market Value of Assets	**$770,228,000**
Investments	$770,228,000

Historical Market Value of Assets	
July 1, 2013	$561,450,000
July 1, 2014	$658,508,000
July 1, 2015	$644,649,000
July 1, 2016	$612,637,000
July 1, 2017	$669,508,000
July 1, 2018	$718,133,000
July 1, 2019	$727,344,000
July 1, 2020	$716,418,000
July 1, 2021	$928,729,000
July 1, 2022	$770,228,000

Investment Return

Table II-C



Annual Investment Returns

Plan Year	Market Value Return	Actuarial Value Return	Assumed Return
2012/13	14.70%	14.70%	7.75%
2013/14	20.29%	20.29%	7.50%
2014/15	0.41%	0.41%	7.50%
2015/16	-1.54%	-1.54%	7.50%
2016/17	13.00%	13.00%	7.50%
2017/18	10.37%	10.37%	7.50%
2018/19	4.55%	4.55%	7.25%
2019/20	2.74%	6.35%	7.25%
2020/21	33.44%	10.98%	7.00%
2021/22	-14.71%	7.02%	7.00%
10yr. Avg.	7.60%	8.43%	7.37%

Asset Reconciliation

Table II-D

	Market Value	Actuarial Value
As of July 1, 2021	**$928,729,000**	**$798,950,600**
Increases Due To:		
Employer Contributions	$27,626,000	$27,626,000
Employee Contributions	$6,331,000	$6,331,000
Total Contributions	$33,957,000	$33,957,000
Interest and Dividends	$8,013,000	
Gains (Losses)	($141,038,000)	
Total Investment Income	($133,025,000)	$55,223,595
Other Income	$1,000	
Total Income	**($99,067,000)**	**$89,180,595**
Decreases Due To:		
Benefit Payments	($56,593,000)	($56,593,000)
Total Benefit Payments	($56,593,000)	($56,593,000)
Investment Expenses	($1,845,000)	
Administrative Expenses	($996,000)	($996,000)
Advance Employer Contribution		$0
Total Expenses	**($59,434,000)**	**($57,589,000)**
As of July 1, 2022	**$770,228,000**	**$830,542,195**

Historical Trust Fund Detail

Table II-E

Income

Plan Year	Employer Contribs.	Employee Contribs.	Interest / Dividends	Gains / Losses	Other Income
2012/13	$17,491,000	$5,676,000	$11,134,000	$64,208,000	$17,000
2013/14	$20,656,000	$5,670,000	$11,661,000	$103,894,000	$3,000
2014/15	$20,866,000	$5,637,000	$11,197,000	-$5,768,000	$4,000
2015/16	$16,454,000	$5,667,000	$11,401,000	-$18,709,000	$150,000
2016/17	$17,901,000	$5,711,000	$8,592,000	$72,220,000	$1,000
2017/18	$21,882,000	$5,945,000	$7,098,000	$63,308,000	$0
2018/19	$21,194,000	$5,980,000	$6,069,000	$27,440,000	$0
2019/20	$15,626,000	$6,130,000	$5,921,000	$15,013,000	$48,000
2020/21	$24,628,000	$6,247,000	$5,373,000	$231,712,000	$42,000
2021/22	$27,626,000	$6,331,000	$8,013,000	-$141,038,000	$1,000

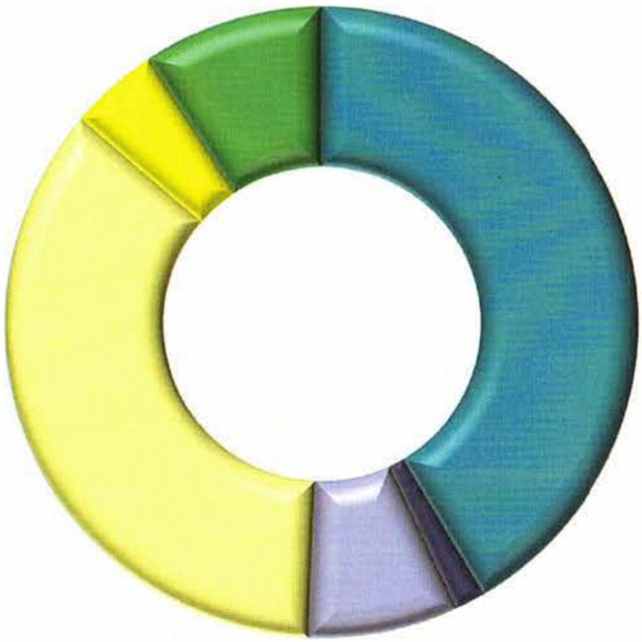
Expenses / *Other Actuarial Adjustments*

Plan Year	Benefit Payments	Admin. Expenses	Invest. Expenses	Advance Employer Contribs.
2012/13	$40,180,000	$301,000	$2,287,000	$0
2013/14	$41,268,000	$374,000	$3,184,000	$0
2014/15	$42,590,000	$427,000	$2,778,000	$0
2015/16	$44,000,000	$388,000	$2,587,000	$0
2016/17	$44,510,000	$479,000	$2,565,000	$0
2017/18	$46,898,000	$683,000	$2,027,000	$0
2018/19	$49,819,000	$290,000	$1,363,000	$0
2019/20	$51,680,000	$539,000	$1,445,000	$0
2020/21	$53,035,000	$1,181,000	$1,475,000	$0
2021/22	$56,593,000	$996,000	$1,845,000	$0

Note: Amounts shown for the 2011 short plan year are estimated.

Summary of Participant Data

Table III-A



Participant Distribution by Status

As of July 1, 2022

Actively Employed Participants	
Active Participants	926
DROP Participants	0
Inactive Participants	
Deferred Vested Participants	34
Due a Refund of Contributions	171
Deferred Beneficiaries	0
Participants Receiving a Benefit	
Service Retirements	796
Disability Retirements	100
Beneficiaries Receiving	205
Total Participants	**2,232**

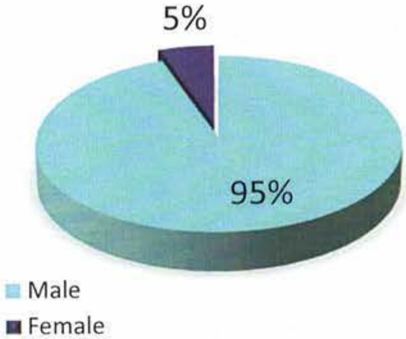
Number of Participants Included in Prior Valuations

	Active	*DROP*	*Inactive*	*Retired*	*Total*
July 1, 2013	1,045	0	9	994	2,048
July 1, 2014	1,043	0	12	1,004	2,059
July 1, 2015	1,042	0	21	992	2,055
July 1, 2016	1,003	0	15	1,007	2,025
July 1, 2017	981	0	14	1,026	2,021
July 1, 2018	928	0	12	998	1,938
July 1, 2019	951	0	19	1,086	2,056
July 1, 2020	888	0	27	1,104	2,019
July 1, 2021	841	0	158	1,089	2,088
July 1, 2022	926	0	205	1,101	2,232

Active Participant Data

Table III-B

Gender Mix



As of July 1, 2022

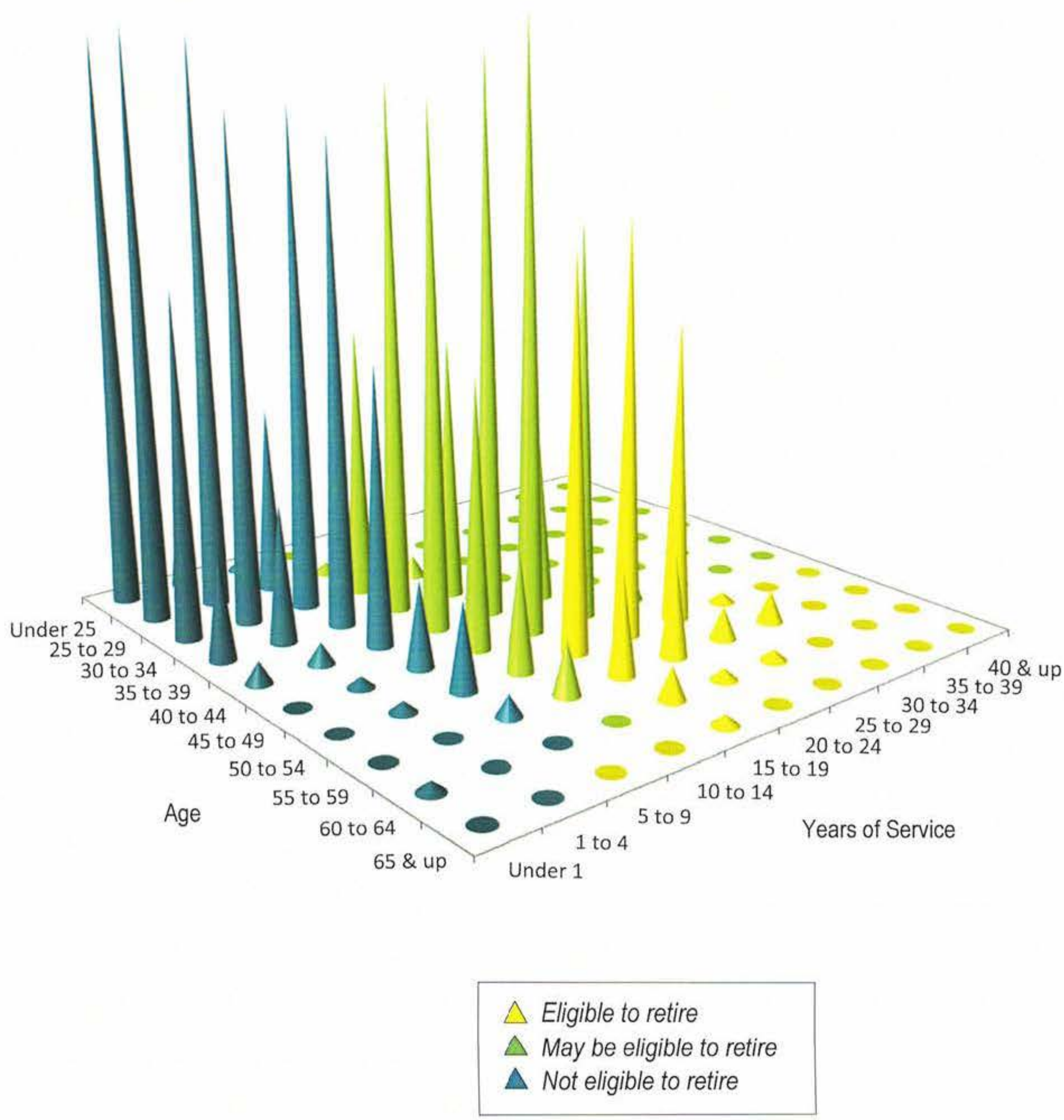
Average Age	38.7 years
Average Service	10.4 years
Total Annualized Compensation for the Prior Year	$53,517,144
Total Expected Compensation for the Current Year	$54,451,983
Average Increase in Compensation for the Prior Year	N/A
Expected Increase in Compensation for the Current Year	5.44%
Accumulated Contributions for Active Employees	$65,729,775

Active Participant Statistics From Prior Valuations

	Average Age	*Average Service*	*Average Salary*	*Average Expected Salary Increase*	*Average Actual Salary Increase*
July 1, 2013	38.1	9.6	$41,912	4.00%	N/A
July 1, 2014	38.5	9.9	$44,731	4.00%	N/A
July 1, 2015	39.0	10.3	$44,406	4.00%	N/A
July 1, 2016	39.4	10.8	$45,387	4.00%	N/A
July 1, 2017	39.7	11.0	$48,111	4.00%	N/A
July 1, 2018	39.6	10.8	$52,518	4.00%	N/A
July 1, 2019	39.1	10.4	$52,396	4.00%	N/A
July 1, 2020	39.5	11.0	$57,850	4.00%	N/A
July 1, 2021	39.9	11.5	$61,003	5.36%	N/A
July 1, 2022	38.7	10.4	$57,794	5.29%	N/A

Active Age-Service Distribution

Table III-C



Active Age-Service-Salary Table

Table III-D

Attained Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
	Completed Years of Service										
Under 25	53	12	1	0	0	0	0	0	0	0	66
Avg.Pay	15,190	44,231	46,432	0	0	0	0	0	0	0	20,944
25 to 29	54	53	18	1	0	0	0	0	0	0	126
Avg.Pay	20,228	47,264	51,793	57,303	0	0	0	0	0	0	36,404
30 to 34	32	47	47	26	2	0	0	0	0	0	154
Avg.Pay	18,674	47,170	51,521	61,834	70,843	0	0	0	0	0	45,360
35 to 39	10	13	45	49	25	0	0	0	0	0	142
Avg.Pay	22,256	49,953	54,596	65,733	70,031	0	0	0	0	0	58,454
40 to 44	2	2	26	48	52	16	0	0	0	0	146
Avg.Pay	20,001	47,044	54,680	65,738	74,007	80,171	0	0	0	0	67,413
45 to 49	0	1	8	25	55	37	3	0	0	0	129
Avg.Pay	0	49,177	53,608	66,961	76,116	82,788	91,747	0	0	0	75,014
50 to 54	0	1	8	11	36	38	28	1	0	0	123
Avg.Pay	0	47,005	49,381	69,234	74,212	82,288	95,836	84,698	0	0	79,433
55 to 59	0	0	2	5	10	10	3	3	0	0	33
Avg.Pay	0	0	60,491	69,966	68,443	73,850	117,121	91,995	0	0	76,396
60 to 64	1	0	0	0	3	1	1	0	0	0	6
Avg.Pay	17,584	0	0	0	65,218	53,773	123,267	0	0	0	65,046
65 & up	0	0	0	0	1	0	0	0	0	0	1
Avg.Pay	0	0	0	0	61,262	0	0	0	0	0	61,262
Total	152	129	155	165	184	102	35	4	0	0	926
Avg.Pay	18,257	47,228	53,055	65,617	73,588	81,030	98,094	90,171	0	0	57,794

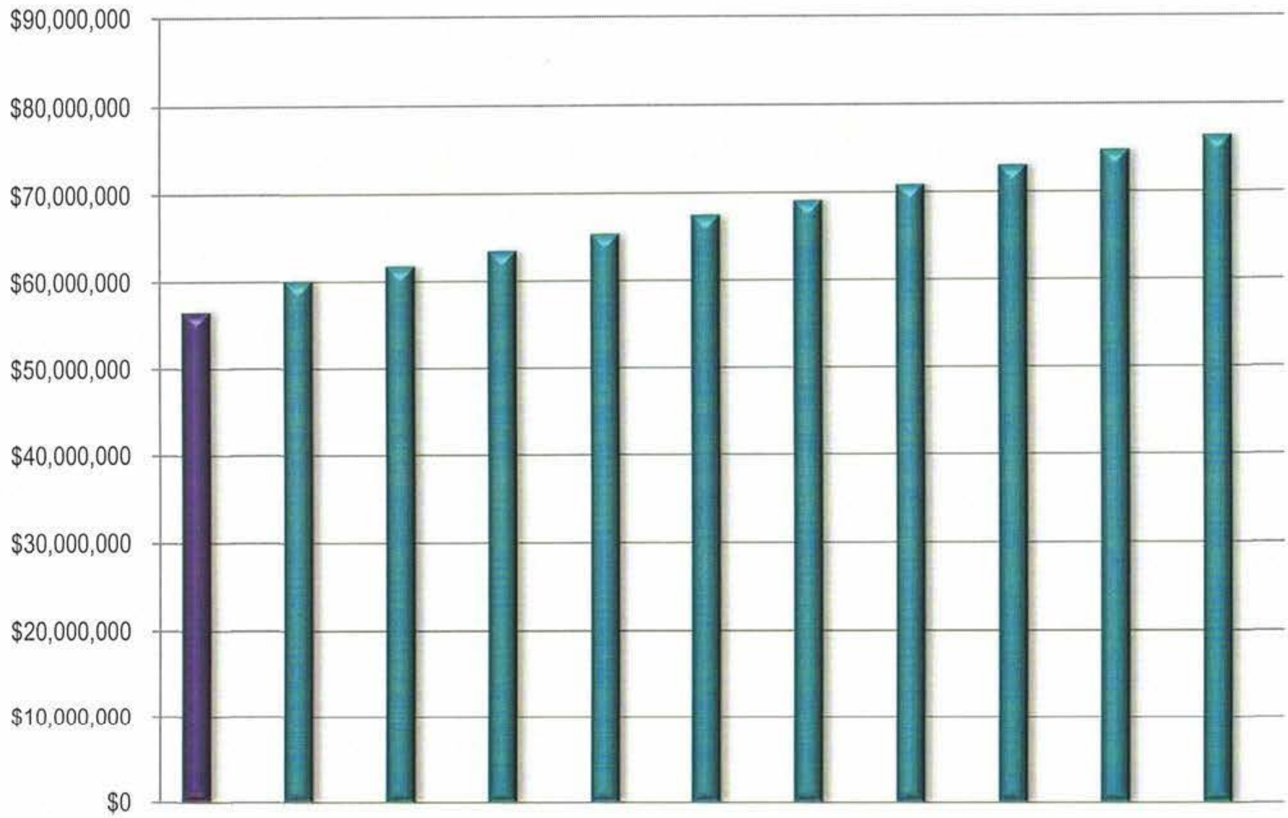
Inactive Participant Data

Table III-E

	Average Monthly Benefit
Service Retirements	$4,806.05
Disability Retirements	$3,961.46
Beneficiaries Receiving	$2,630.97
DROP Participants	Not applicable
Deferred Vested Participants	$653.89
Deferred Beneficiaries	Not applicable

Projected Benefit Payments

Table III-F



Actual	
For the period July 1, 2021 through June 30, 2022	$56,593,000
Projected	
For the period July 1, 2022 through June 30, 2023	$60,090,180
For the period July 1, 2023 through June 30, 2024	$61,728,788
For the period July 1, 2024 through June 30, 2025	$63,475,001
For the period July 1, 2025 through June 30, 2026	$65,388,665
For the period July 1, 2026 through June 30, 2027	$67,513,054
For the period July 1, 2027 through June 30, 2028	$69,119,058
For the period July 1, 2028 through June 30, 2029	$70,912,497
For the period July 1, 2029 through June 30, 2030	$73,080,706
For the period July 1, 2030 through June 30, 2031	$74,799,549
For the period July 1, 2031 through June 30, 2032	$76,414,922

Summary of Actuarial Methods and Assumptions — Table IV-A

NOTE: The following assumptions and methods have been selected and approved by the Board of Trustees based on a 2021 economic assumption experience study, on a 2022 demographic assumption experience study covering the period July 1, 2014 through June 30, 2019, and on the advice of the plan's enrolled actuary in accordance with the authority granted to the Board under the pension ordinances and State law.

1. Actuarial Cost Method

Individual entry age normal cost method. Under this actuarial cost method, a level funding cost is developed with respect to each benefit for each participant. The level funding cost for each benefit applies to the period beginning when the participant's service commences and ending when the participant is assumed to cease active participation due to each respective decrement. The actuarial accrued liability is equal to the accumulated level funding cost to the valuation date for all participants. The normal cost is equal to the level funding cost for the year immediately following the valuation date for all active participants.

2. Asset Method

The actuarial value of assets is equal to the market value of assets, adjusted to reflect a five-year phase-in of the unexpected investment gains and losses that occur after June 30, 2019.

3. Interest (or Discount) Rate

7.00% per annum

4. Salary Increases

Unless actual plan compensation is known for a prior plan year, plan compensation is assumed to increase at the rate of 10.00% per year at ages under 25, 8.00% per year at ages 25 through 29, 6.00% per year at ages 30 through 34, 5.00% per year at ages 35 through 39, 4.50% per year at ages 40 through 44, 4.00% per year at ages 45 through 49, 3.50% per year at ages 50 through 54, 3.25% per year at ages 55 through 59, and 3.00% per year at ages 60 and older.

5. Decrements

- Pre-retirement mortality: Sex-distinct rates set forth in the PUB-2010 Mortality Table for public safety employees, with full generational improvements in mortality using Scale MP-2020; deaths prior to retirement are assumed not to be service-connected.
- Post-retirement mortality: Sex-distinct rates set forth in the PUB-2010 Mortality Table for public safety retirees, with full generational improvements in mortality using Scale MP-2020

Summary of Actuarial Methods and Assumptions

Table IV-A

(continued)

• Disability:	25% of the sex-distinct rates set forth in the Wyatt 1985 Disability Study (Class 4); no disabilities are assumed to be service-connected.
• Termination:	Withdrawal rates were derived from a study of actual plan experience covering the period July 1, 2014 through June 30, 2019; withdrawal is assumed at the rate of 8% per year for ages 20 through 22, 2% per year for ages 23 through 34, 3% per year for ages 35 through 39, and 1% per year for ages over 39.
• Retirement:	Retirement rates were derived from a study of actual plan experience covering the period July 1, 2014 through June 30, 2019; 100% retirement is assumed regardless of age for participants who have earned at least 30 years of service; otherwise, retirement is assumed at the rate of 2% per year for ages under 50, 10% at ages 50 and 51, 15% at ages 52 and 53, 25% at age 54, 60% at age 55, 25% at age 56, 15% at each of ages 57 through 63, 50% at age 64, and 100% per year for ages over 64.

6. **Unused Vacation and Sick Leave**

With respect to active participants hired prior to September 1, 2011, retirement benefits are increased by 7.50% to account for unused vacation pay and are increased by an additional 3.00% to account for unused sick leave pay and an additional 0.50 of a year of service is added to total service before the application of the service cap; with respect to all other active participants, retirement benefits are increased by 2.25% to account for unused vacation pay.

7. **Payroll Increase and Amortization Period**

Total payroll has been assumed to grow at the rate of 3.00% per year for purposes of amortizing the unfunded actuarial accrued liability as a level percentage of payroll; the amortization period is established by City ordinance as a closed 30-year period beginning July 1, 2011.

8. **Expenses**

Administrative expenses are assumed to be $500,000 per year, increased at the rate of 2.25% per year after the 2020/21 plan year, plus an additional $10,000 for the 2023/24 plan year. In addition, the interest rate set forth in item 3. above is assumed to be net of investment expenses and commissions.

Summary of Actuarial Methods and Assumptions

Table IV-A

(continued)

9. **Inflation**

For purposes of determining the applicable cost-of-living adjustment, we have assumed that future inflation will be 2.25% per annum, compounded annually.

10. **Terminated Vested Participants**

90% of future terminated vested participants are assumed to choose a refund of their accumulated employee contributions in lieu of any additional benefits under the plan.

11. **Surviving Beneficiaries**

Those active participants who are making the additional 1% employee contribution to provide a survivor benefit to their eligible beneficiaries are assumed to have only one surviving beneficiary of the opposite gender of the employee. For this purpose, male participants are assumed to be two years older than their beneficiary and female participants are assumed to be one year younger than their beneficiary.

12. **Pre-Retirement Survivor Annuity**

75% of those participants who were hired after August 31, 2011 are assumed to be eligible for a pre-retirement survivor annuity.

Changes in Actuarial Methods and Assumptions

Table IV-B

No assumptions or methods were changed since the previous valuation was completed, other than an additional $10,000 of administrative expense was assumed for the 2023/24 plan year.

The following additional assumption and method changes were made during the past 10 years:

(1) Effective July 1, 2021, the assumed disability rates have been reduced from 100% of the Wyatt 1985 Disability Study (Class 4) to 25% of those rates and no disabilities have been assumed to be service-connected.

(2) Effective July 1, 2021, the assumed termination and retirement rates were updated based on an experience study covering the period July 1, 2014 through June 30, 2019.

(3) Effective July 1, 2021, the adjustment to reflect unused vacation and sick leave was revised based on an experience study covering the period July 1, 2014 through June 30, 2019.

(4) Effective July 1, 2021, 90% of future terminated vested participants are assumed to choose a refund of their accumulated employee contributions in lieu of any other benefits under the plan.

(5) Effective July 1, 2021, the assumed age difference between participants and their surviving beneficiaries was reduced and 75% of active participants hired after August 31, 2011 are assumed to be eligible for a pre-retirement surviving annuity.

(6) Effective July 1, 2020, the actuarial value of assets was changed from the unadjusted market value to the market value adjusted to reflect a five-year phase-in of the unexpected investment gains and losses that occur after June 30, 2019.

(7) Effective July 1, 2020, the interest (or discount) rate was decreased from 7.25% per annum to 7.00% per annum.

(8) Effective July 1, 2020, the assumed increase in future plan compensation was changed from a flat 4.00% per year to an age-based schedule of increases starting at 10.00% for employees under age 25 graded down to 3.00% per year for employees age 60 and older.

(9) Effective July 1, 2020, the mortality improvement scale was updated from Scale MP-2017 to Scale MP-2020.

(10) Effective July 1, 2020, total future payroll growth has been reduced from 4.00% per year to 3.00% per year.

(11) Effective July 1, 2020, assumed administrative expenses have been changed from 1.00% of future payroll to $500,000 increased at the rate of 2.25% per year after the 2020/21 plan year.

Changes in Actuarial Methods and Assumptions

Table IV-B

(continued)

(12) *Effective July 1, 2020, for purposes of determining the automatic cost-of-living adjustment, future inflation has been reduced from 2.50% per year to 2.25% per year.*

(13) *Effective July 1, 2019, the mortality basis was changed from the RP-2000 Blue Collar Mortality Table with generational mortality projections using Scale AA to the PUB-2010 Public Safety Mortality Table with generational mortality projections using Scale MP-2017.*

(14) *Effective July 1, 2018, the assumed interest (or discount) was decreased from 7.50% per annum to 7.25% per annum.*

(15) *Effective July 1, 2018, the assumed annual cost-of-living adjustment was decreased from 3.00% per year to 2.50% per year.*

(16) *Effective July 1, 2017, the mortality basis was changed from a 2015 projection of the RP-2000 Mortality Table to the RP-2000 Blue Collar Mortality Table with full generational improvements in mortality using Scale AA.*

(17) *Effective July 1, 2014, the administrative expense assumption was increased from 0.50% of future payroll to 1.00% of future payroll.*

(18) *Effective July 1, 2013, the assumed interest (or discount) rate was decreased from 7.75% per annum to 7.50% per annum.*

(19) *Effective July 1, 2013, the mortality basis was changed from the RP-2000 Mortality Table, projected to 2007 by Scale AA, to the RP-2000 Mortality Table, projected to 2015 by Scale AA, both as published by the Internal Revenue Service (IRS) for purposes of Internal Revenue Code (IRC) section 430.*

Summary of Plan Provisions

Table V-A

1. **Monthly Accrued Benefit**

For participants who are hired after August 31, 2011:
1% of Average Monthly Earnings multiplied by up to 80 years of Creditable Service
For participants who are hired during the period July 1, 2010 through August 31, 2011:
2% of Average Monthly Earnings multiplied by up to 50 years of Creditable Service
For all other participants who are covered by the '05 Amendment:
3% of Average Monthly Earnings multiplied by up to 26.667 years of Creditable Service
For all other participants who are not covered by the '05 Amendment:
2% of Average Monthly Earnings multiplied by Creditable Service earned through February 28, 2001 plus 3% of Average Monthly Earnings multiplied by Creditable Service earned thereafter

2. **Normal Retirement Age and Benefit**

- **Age**
  Any age with at least 30 years of Creditable Service *(only for participants who are covered by the '05 Amendment)*; or
  Age 55 with at least 10 years of Creditable Service *(only for participants who are hired prior to July 1, 2010)*; or
  Age 55 with at least 15 years of Creditable Service *(only for participants who are hired prior to September 1, 2011)*; or
  Age 57 with at least 15 years of Creditable Service; or
  Age 65 with at least 5 years of Creditable Service
- **Amount**
  Monthly Accrued Benefit
- **Form of Payment**
  Life annuity *(for those participants without an eligible beneficiary)*; or
  75% joint and contingent annuity *(for those participants with an eligible beneficiary; benefits continue in equal shares to the participant's dependent children upon the death of the participant's spouse or domestic partner or, for participants not covered by the '86 Amendment, upon the remarriage of the participant's spouse or domestic partner; survivor benefits are actuarially adjusted with respect to participants who are hired after August 31, 2011)*

  Note: All annuity forms of payment include an automatic cost-of-living adjustment effective each January 1 based on the increase in the Consumer Price Index as of the preceding November 1 and limited to 3% *(limited to 1% with respect to participants who are hired after August 31, 2011)*. All annuity forms of payment also provide a minimum payout equal to the employee's accumulated contributions, with interest credited after 1985 at the rate of 5% per year (or less than 5% with respect to any year during which the trust fund earns less than 5% on its investments).

Summary of Plan Provisions

Table V-A

(continued)

3. Early Retirement Age and Benefit

- **Age**

  Any age with at least 10 years of Creditable Service *(15 years of Creditable Service for participants who are hired after June 30, 2010; minimum age of 47 for participants who are hired after August 31, 2011)*

- **Amount**

  Monthly Accrued Benefit *(payable at Normal Retirement Age)*; or

  Monthly Accrued Benefit reduced by ½% for each of the first 60 months and by ¼% for each additional month by which the participant's Early Retirement Age precedes Normal Retirement Age *(payable at Early Retirement Age and applicable only to those participants who are hired prior to September 1, 2011)*; or

  Monthly Accrued Benefit reduced by ½% for each month by which the participant's Early Retirement Age precedes Normal Retirement Age *(payable at Early Retirement Age and applicable only to those participants who are hired after August 31, 2011)*; or

  Monthly Accrued Benefit reduced by ¼% for each month by which the participant's Early Retirement Age precedes age 55 *(payable at Early Retirement Age and only applicable if the participant was hired prior to April 1, 1978 and has earned at least 25 years of Creditable Service)*

- **Form of Payment**

  Same as for Normal Retirement

4. Delayed Retirement Age and Benefit

- **Age**

  After Normal Retirement Age

- **Amount**

  Monthly Accrued Benefit

- **Form of Payment**

  Same as for Normal Retirement

Summary of Plan Provisions

Table V-A

(continued)

5. Disability Retirement Eligibility and Benefit

- **Eligibility**

  All active participants are eligible if the disability is service-connected;
  At least five years of Creditable Service is required otherwise.

- **Condition**

  The participant must become "totally and permanently disabled" and must remain so disabled until Normal Retirement Age. "Totally and permanently disabled" means the participant is in a continuous state of incapacity due to illness or injury, is prevented from performing his regular assigned or comparable duties during the first 12 months of his disability, and is thereafter prevented from engaging in any occupation for which he is or becomes reasonably qualified by education, training, or experience. With respect to participants who are not covered by the '86 Amendment, the participant must only be prevented from performing his regular assigned or comparable duties during the entire period of his disability.

- **Amount**

  For participants who incur a catastrophic injury in the line of duty:

  100% of the top salary for the grade and position occupied by the participant at the time of disability

  For participants who are covered by the '86 Amendment:

  Greater of 50% of Average Monthly Earnings at the time of disability or Monthly Accrued Benefit, offset by worker's compensation payments such that the combination of payments does not exceed 75% of the participant's salary at the time of disability *(payable until the earlier of recovery from disability or Normal Retirement Age)*; and

  Monthly Accrued Benefit based on Average Monthly Earnings at the time of disability and Creditable Service including the period during which the participant was disabled, but excluding any cost-of-living adjustments that were previously applied to the participant's disability payments *(payable at Normal Retirement Age)*

  For all other participants with a service-connected disability:

  Greater of 70% of the top salary for the grade and position occupied by the participant at the time of disability or Monthly Accrued Benefit, offset by worker's compensation payments such that the combination of payments does not exceed 100% of the participant's salary at the time of disability

  For all other participants:

  Monthly Accrued Benefit, offset by worker's compensation payments such that the combination of payments does not exceed 100% of the participant's salary at the time of disability

- **Form of Payment**

  Same as for Normal Retirement

Summary of Plan Provisions

Table V-A

(continued)

6. Deferred Vested Benefit

- **Age**
  Any age with at least five years of Creditable Service
- **Amount**
  Monthly Accrued Benefit multiplied by the participant's Vested Percentage and payable at age 60
- **Form of Payment**
  Same as for Normal Retirement

7. Pre-Retirement Death Benefit

For participants who die in the line of duty and who are covered by the '86 Amendment:

100% of the participant's base salary at the time of his death, offset by worker's compensation or other payments received for line of duty injuries prior to the participant's death *(payable for the first two years after the participant's death)*; and

75% of the Monthly Accrued Benefit *(payable thereafter)*

For all other participants who die in the line of duty:

100% of the participant's base salary at the time of his death, offset by worker's compensation or other payments received for line of duty injuries prior to the participant's death *(payable for the first two years after the participant's death)*; and

75% of the greater of: (a) the Monthly Accrued Benefit, or (b) 70% of the top salary for the grade and position occupied by the participant at his death *(payable thereafter)*

For all other participants:

75% of the Monthly Accrued Benefit

Summary of Plan Provisions

Table V-A

(continued)

8. Vested Percentage

Retirement benefits with respect to those participants who are hired prior to July 1, 2010 become vested in accordance with the following schedule:

Years of Creditable Service	Vested Percentage
Less than five	0%
At least five, but less than six	25%
At least six, but less than seven	30%
At least seven, but less than eight	35%
At least eight, but less than nine	40%
At least nine, but less than 10	45%
At least 10	100%

Retirement benefits with respect to those participants who are hired after June 30, 2010 become vested in accordance with the following schedule:

Years of Creditable Service	Vested Percentage
Less than five	0%
At least five, but less than six	25%
At least six, but less than seven	30%
At least seven, but less than eight	35%
At least eight, but less than nine	40%
At least nine, but less than 10	45%
At least 10, but less than 11	50%
At least 11, but less than 12	55%
At least 12, but less than 13	60%
At least 13, but less than 14	65%
At least 14, but less than 15	70%
At least 15	100%

Summary of Plan Provisions

Table V-A

(continued)

9. Average Monthly Earnings

The participant's Average Monthly Earnings is equal to: (a) the average of the participant's Base Salary for the highest 36 consecutive months during his period of Creditable Service; plus (b) the difference between the highest and lowest daily rate of pay during such 36-month period multiplied by the days of unused sick leave and divided by 36; plus (c) a credit based on accumulated unused vacation. *(The averaging period is 120 months with respect to participants who are hired after August 31, 2011 and average monthly earnings does not include unused sick leave for these participants.)*

10. Base Salary

The employee's basic salary excluding overtime pay and other special compensation; pursuant to Internal Revenue Code (IRC) section 401(a)(17), total annual plan compensation is limited to $200,000 as indexed.

11. Employee Contribution

All participating employees must make the required pre-tax contribution to the plan. The required contribution for participants who were hired prior to 1984 is 8% of basic salary for those participants who have an eligible beneficiary and 7% of basic salary for those participants who do not have an eligible beneficiary. The required contribution for participants who were hired during the period 1984 through August 31, 2011 is 13% of basic salary (8% prior to November 1, 2011) for those participants who have an eligible beneficiary and 12% of basic salary (7% prior to November 1, 2011) for those participants who do not have an eligible beneficiary. The required contribution for participants who are hired after August 31, 2011 is 8% of basic salary. An eligible beneficiary is the participant's legal spouse, registered domestic partner, or unmarried child under the age of 18. The participant must have been married or registered to his legal spouse or domestic partner for at least one year prior to his death in order for such individual to be an eligible beneficiary. *(During the period March, 1994 through June, 2009, the required contribution was 1% lower for all participants; prior to March, 1994, the contribution was made on an after-tax basis.)*

Summary of Plan Provisions

Table V-A

(continued)

12. Creditable Service

Creditable Service includes "base creditable service" *(plus an "unused sick leave service credit" for those participants who were hired prior to September 1, 2011)* plus military service as required by federal law. Base creditable service is granted for all periods of full-time employment as a firefighter with the City of Atlanta provided that the employee has made the required contribution for such period of service. With respect to eligible participants, an unused sick leave service credit is granted by dividing the participant's days of unused sick leave by the number of work days set forth in the following chart:

Years of Base Creditable Service	Work Days
Less than five	239
At least five, but less than 10	236
At least 10, but less than 15	233
At least 15, but less than 20	230
At least 20	226

Creditable Service also includes other service with the City of Atlanta if the relevant contributions are transferred into this plan and may include prior service with the State of Georgia, Fulton County, Dekalb County, or as a teacher in a public school system or private college or university within the State of Georgia if the required contribution is made to the plan.

13. Participation Requirement

All full-time firefighters employed by the City of Atlanta are eligible to participate in the plan.

14. Plan Effective Date

April 1, 1978

Summary of Plan Amendments

Table V-B

No plan changes have been adopted since the previous valuation was completed.