The Richmond Retirement System

Actuarial Valuation
July 1, 2022

SageView Consulting Group
4510 Cox Rd., Suite 200, Glen Allen, VA 23060
www.sageviewadvisory.com

September 22, 2022

Board of Trustees
The Richmond Retirement System
Richmond, Virginia

Ladies and Gentlemen:

Actuarial valuations of the Richmond Retirement System are performed annually. The results of the latest actuarial valuation of the System, which was prepared as of July 1, 2022, are summarized in this letter.

The valuation reflects the benefits in effect on the valuation date, and was prepared on the basis of the data submitted by the City using generally accepted actuarial principles and methods.

Financing Objective and City's Contribution Rate

The financing objective of the System is to:

(a) Fully fund all current costs based on the normal contribution rate payable by the City determined under the funding method; and

(b) Liquidate the unfunded actuarial liability based on actuarial liability contributions payable by the City over an amortization period of no more than 30 years, with contributions increasing 3% per year for Police/Fire employees and level contributions for General employees.

The July 1, 2022 valuation develops contribution rates for the fiscal year ending June 30, 2024. These contribution rates, which are based on the estimated covered payroll as of July 1, 2022, are as follows:

	General Employees	Police & Fire	Total
Bi-Weekly	82.42%	44.12%	59.17%

The above rates should be adjusted to reflect the actual budgeted payroll for the fiscal year ending June 30, 2024 if it is materially different than the estimated covered payroll on which they are based. The Board has approved a motion to request a change in the City Code which would provide for a flat dollar contribution amount for General Employees rather than a contribution rate. To the best of our knowledge, no action has yet been taken by the City.

The contribution rates and amounts displayed above, once adjusted, are sufficient to support the benefits of the System and administrative expenses and achieve the financing objective set forth above.

Net Pension Liability

Under GASB 67, the Net Pension Liability is the excess, if any, of the Total Pension Liability over the Fiduciary Net Position. The Total Pension Liability is determined under the Entry Age actuarial cost method. The Net Pension Liability as of June 30, 2022 and June 30, 2021 is as follows:

	June 30, 2022	June 30, 2021
Total Pension Liability:	$959,392,716	$954,775,368
Fiduciary Net Position:	$619,157,459	$685,425,764
Net Pension Liability:	$340,235,257	$269,349,604
Fiduciary Net Position as a Percentage of Total Pension Liability:	64.5%	71.8%

Legislative and Administrative Changes

There were no legislative or administrative changes during the fiscal year ended June 30, 2022.

Actuarial Assumptions and Methods

Actuarial assumptions are adopted by the Board, upon review of recommendations made by the actuary. An experience study was conducted for the five-year period ended June 30, 2018. This study resulted in the Board adopting several changes in assumptions, at the recommendation of the actuary, in order to better anticipate emerging experience. Included in the changes was an update to the mortality tables used to the Pub-2010 Below-Median Income tables for both General and Public Safety plan participants. Additionally, the Board reviewed the investment return assumption and voted to lower the assumption from 7.5% to 7.0%.

The unfunded actuarial liability as of July 1, 2019 is being amortized over a period of 12 years (9 years remaining), with contributions increasing 3% per year for Police & Fire employees and level contributions for General employees. The cost of the 2019 Voluntary Retirement Incentive Program (VRIP) is being amortized over 3 years so that the annual cash inflow will be approximately equal to the annual outflow of benefit payments related to the VRIP (one year remaining). The amortization period for other bases established on or after July 1, 2020 is 20 years.

For purposes of determining contribution rates, the difference between actual investment earnings and expected investment earnings is recognized over a five-year period, with the restriction that the actuarial asset value cannot be less than 90% or more than 110% of market value. This smoothing method is utilized in order to smooth the impact of short term market fluctuations on the System's contribution rates and funded status. For purposes of financial reporting beginning with the fiscal year ended June 30, 2014, assets are reported at fair market value.

Samples of the actuarial assumptions and descriptions of the actuarial cost method and asset valuation method are set forth in the outline of actuarial assumptions and methods included in the report.

System Assets and Participant Data

The individual data for members of the System as of the valuation date were reported to the actuary by the City. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness in comparison with the data submitted for the previous valuation. It is our understanding that the independent auditor of the System has also made an examination of the data.

The value of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Retirement System Staff which will be audited by the independent auditor of the System. Assets have been reduced by the value of DROP accounts as those accounts are recognized as benefits payable from the System.

Financial Results and Membership Data

Detailed summaries of the financial results of the valuation and membership data used in preparing the valuation are shown in the valuation report and the related membership data schedules. We were responsible for providing information for all schedules included in the Actuarial Section as well as certain schedules included in other sections of the consolidated annual financial report for the fiscal year ended June 30, 2022. These schedules include the Schedule of Active Members Valuation Data, Schedule of Beneficiaries Added to and Removed from Rolls, and the Reasons for Change in Contribution Rates.

Defined Contribution Plan

The City also sponsors a 401(a) Defined Contribution Plan for General employees hired on or after July 1, 2006 and other employees who have elected to participate in that plan in lieu of the Richmond Retirement System's defined benefit plan. An analysis of the Defined Contribution Plan with respect to Virginia Code Title 51.1-800 was conducted and we believe it is in compliance.

Funding Adequacy

The results of the valuation indicate the rate of contribution payable by the City, when taken together with the current assets of the System including member contributions, is adequate to fund the actuarial liabilities on account of all benefits payable under the System in accordance with generally accepted actuarial principles utilizing the assumptions and methods adopted by the Board.

To the best of our knowledge, this report is complete and accurate and the System is being operated on an actuarially sound basis. All costs and liabilities have been determined in conformance with generally accepted actuarial principles and on the basis of actuarial assumptions and methods which are each individually reasonable taking into account past experience and reasonable expectations of future experience. The assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice.

Future liability and asset values may differ from the results shown in this report for many reasons including, but not limited to, actual experience differing from assumed experience, changes in actuarial assumptions or methods, plan amendments, regulatory changes or changes in contribution strategy. An impact analysis of such potential changes is not included in this report. Potential plan risks are discussed in Table 15 in compliance with ASOP 51.

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

We appreciate the opportunity to be of service to the Richmond Retirement System and are available to answer questions regarding this report or to provide further details as may be requested.

Respectfully submitted,

SageView Consulting Group

William M. Dowd, FCA, EA
Managing Principal

William J. Reid, FCA, EA
Principal

Table of Contents

Summary of Valuation Results

Presented in this report are the results of the actuarial valuation as of July 1, 2022 for the Richmond Retirement System.

The principal results include:

The estimated contribution rates for the fiscal year ending June 30, 2024 are as follows:

	General Employees	Police & Fire	Total
Bi-Weekly	82.42%	44.12%	59.17%

The above rates should be adjusted to reflect the actual budgeted payroll for the fiscal year ending June 30, 2024 if it is materially different than the estimated covered payroll on which they are based. The Board has approved a motion to request a change in the City Code which would provide for a flat dollar contribution amount for General Employees rather than a contribution rate. To the best of our knowledge, no action has yet been taken by the City.

The contribution rates and amounts displayed above, once adjusted, are sufficient to support the benefits of the System and administrative expenses and achieve the financing objective set forth above.

The valuation was completed based upon membership and financial data submitted by the City.

Net Pension Liability

Under GASB 67, the Net Pension Liability is the excess, if any, of the Total Pension Liability over the Fiduciary Net Position. The Total Pension Liability is determined under the Entry Age actuarial cost method. The Net Pension Liability as of June 30, 2022 and June 30, 2021 is as follows:

	June 30, 2022	June 30, 2021
Total Pension Liability:	$959,392,716	$954,775,368
Fiduciary Net Position:	$619,157,459	$685,425,764
Net Pension Liability:	$340,235,257	$269,349,604
Fiduciary Net Position as a Percentage of Total Pension Liability:	64.5%	71.8%

Legislative and Administrative Changes

There were no legislative or administrative changes during the fiscal year ended June 30, 2022.

Actuarial Assumptions and Methods

Actuarial assumptions are adopted by the Board, upon review of recommendations made by the actuary. An experience study was conducted for the five-year period ended June 30, 2018. This study resulted in the Board adopting several changes in assumptions, at the recommendation of the actuary, in order to better anticipate emerging experience. Included in the changes was an update to the mortality tables used to the Pub-2010 Below-Median Income tables for both General and Public Safety plan participants. Additionally, the Board reviewed the investment return assumption and voted to lower the assumption from 7.5% to 7.0%.

The unfunded actuarial liability as of July 1, 2019 is being amortized over a period of 12 years (9 years remaining), with contributions increasing 3% per year for Police & Fire employees and level contributions for General employees. The cost of the 2019 Voluntary Retirement Incentive Program (VRIP) is being amortized over 3 years so that the annual cash inflow will be approximately equal to the annual outflow of benefit payments related to the VRIP (one year remaining). The amortization period for other bases established on or after July 1, 2020 is 20 years.

For purposes of determining contribution rates, the difference between actual investment earnings and expected investment earnings is recognized over a five-year period, with the restriction that the actuarial asset value cannot be less than 90% or more than 110% of market value. This smoothing method is utilized in order to smooth the impact of short term market fluctuations on the System's contribution rates and funded status. For purposes of financial reporting beginning with the fiscal year ended June 30, 2014, assets are reported at fair market value.

Summary of Principal Results

Summarized on the following page are the principal financial results of the July 1, 2022 actuarial valuation of the Richmond Retirement System. Comparable results from the July 1, 2021 valuation are also shown.

Summary of Valuation Results...*continued*

	2022	2021
Demographics		
Active		
Traditional Plan	1,240	1,321
Enhanced Plan	139	142
Number	1,379	1,463
Average Pay for Coming Year	69,130	65,826
Retired and Beneficiaries		
Number	4,214	4,276
Average Monthly Allowance	1,481	1,454
Terminated Vested		
Number	1,541	1,544
DC Plan Participants		
Number	2,518	2,438
Total Membership	9,652	9,721
Net Pension Liability		
Total Pension Liability	959,392,716	954,775,368
Fiduciary Net Position	619,157,459	685,425,764
Net Pension Liability	340,235,257	269,349,604
Fiduciary Net Position as a Percentage of the Total Pension Liability	64.5%	71.8%
Contribution Rates		
Fiscal Year Ended	2024	2023
Bi-Weekly Rate		
General Employees	82.42%	79.43%
Police & Fire	44.12%	42.81%
Total	59.17%	57.38%

Contribution Rates

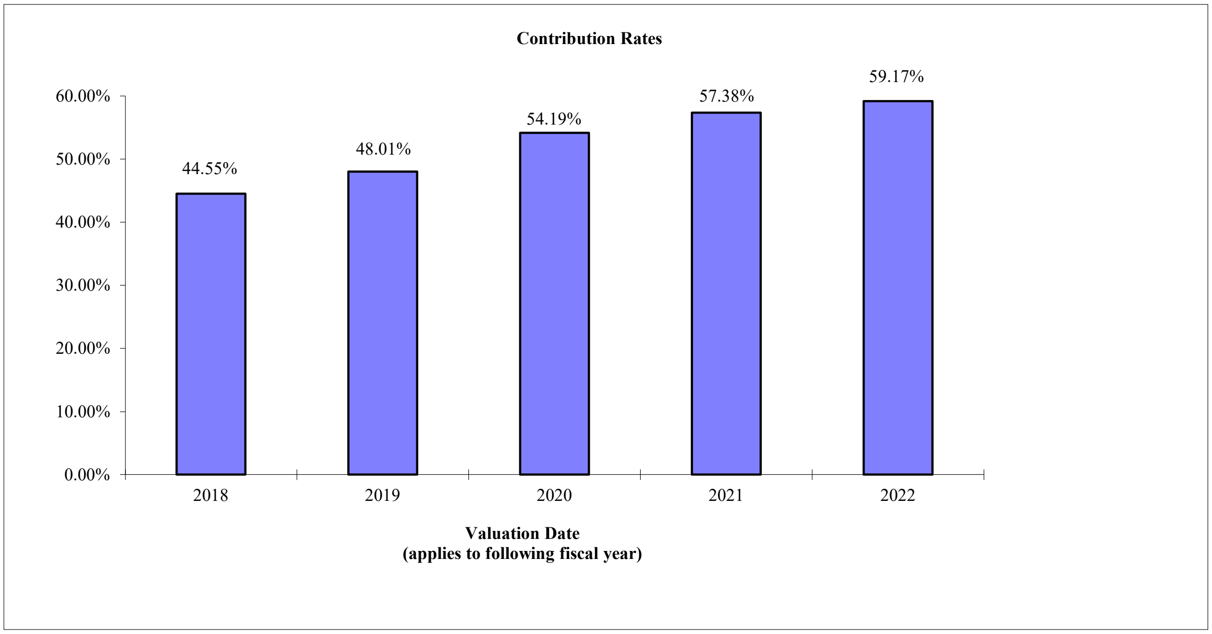
The results of the valuation as of July 1, 2022 determine the contribution rate for the fiscal year ending June 30, 2024. The Code provides that each year the Board of Trustees must certify to the City Administration the amount of appropriation required for the ensuing year to meet the normal and actuarial liability contributions payable by the City. The City's practice is that the contribution for the fiscal year ending June 30, 2024 will be deposited bi-weekly during the year.

Reasons for Change in the Rate

The overall employer contribution rate (adjusted for bi-weekly deposits) increased from 57.38% for the fiscal year ending June 30, 2023 to 59.17% for the fiscal year ending June 30, 2024. The increase of 1.79% is due to the following reasons:

-	Increase due to investment loss on actuarial value of assets	0.39%
-	Increase due to changes in benefit provisions	0.00%
-	Increase due to changes in assumptions and methods	0.00%
-	Increase due to reduction in covered payroll	0.60%
-	Increase due to other factors	0.80%
-	**Total**	**1.79%**

Five-Year History of Contribution Rates
(Bi-Weekly Rates, as a % of payroll)



Summary of Valuation Results...*continued*

Unfunded Actuarial Liability

The financing objective of the System is to:

* Fully fund all current costs based on the normal contribution rate payable by the City determined under the funding method; and

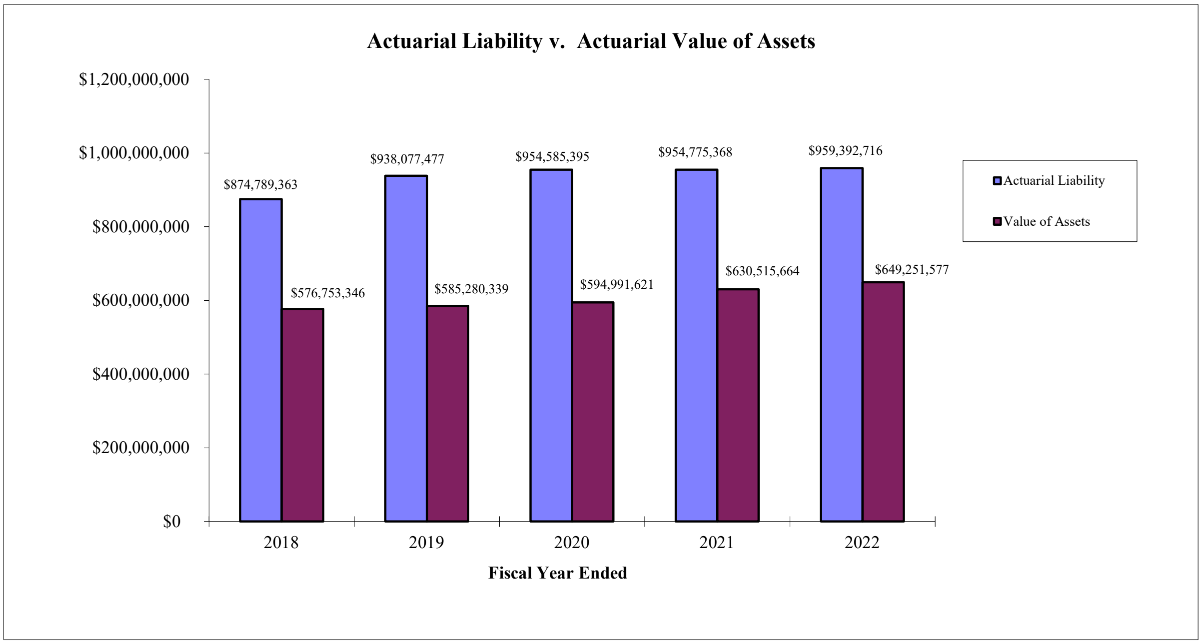
* Liquidate the unfunded actuarial liability based on actuarial liability contributions payable by the City over an amortization period of not more than 30 years, increasing 3% per year for Police/Fire employees and level for General employees.

For purposes of determining contribution rates, the System's unfunded actuarial liability is measured by comparing the actuarial value of assets with the actuarial liability. The actuarial liability is determined under the entry age actuarial cost method. On this basis, the System's unfunded actuarial liability is $310,141,139 as of July 1, 2022. The unfunded actuarial liability is based on an actuarial value of assets of $649,251,577 and an actuarial liability of $959,392,716.

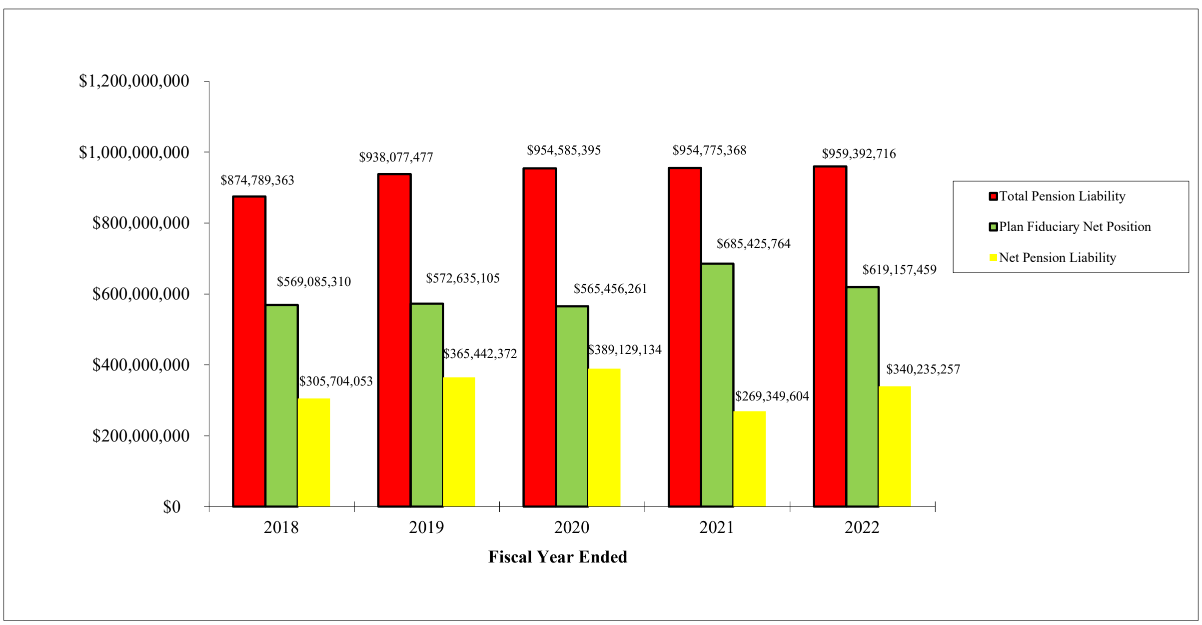
For purposes of financial reporting, the System's Net Pension Liability is measured by comparing the Fiduciary Net Position with the Total Pension Liability. The Total Pension Liability is determined under the entry age actuarial cost method. On this basis, the System's Net Pension Liability is $340,235,257 as of July 1, 2022. The Net Pension Liability is based on a Fiduciary Net Position of $619,157,459 and a Total Pension Liability of $959,392,716.

Summary of Valuation Results...*continued*

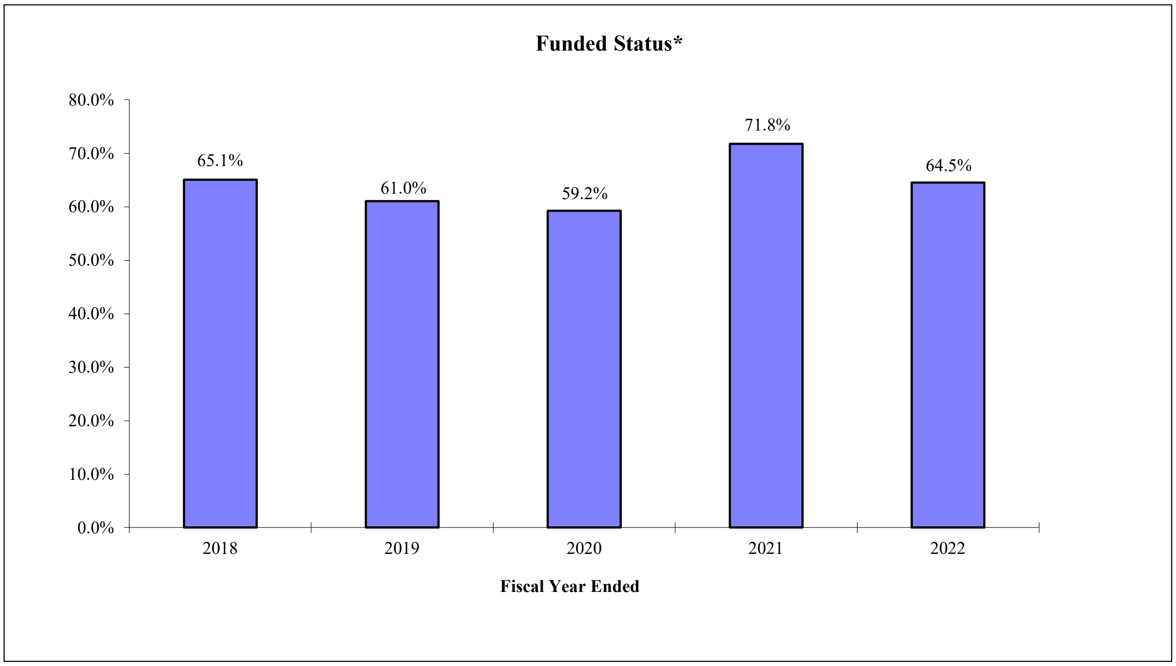
Five-Year History of Actuarial Liability and Value of Assets



History of Net Pension Liability



Five-Year History of Funded Status



* Funded status based on Total Pension Liability and Fiduciary Net Position.

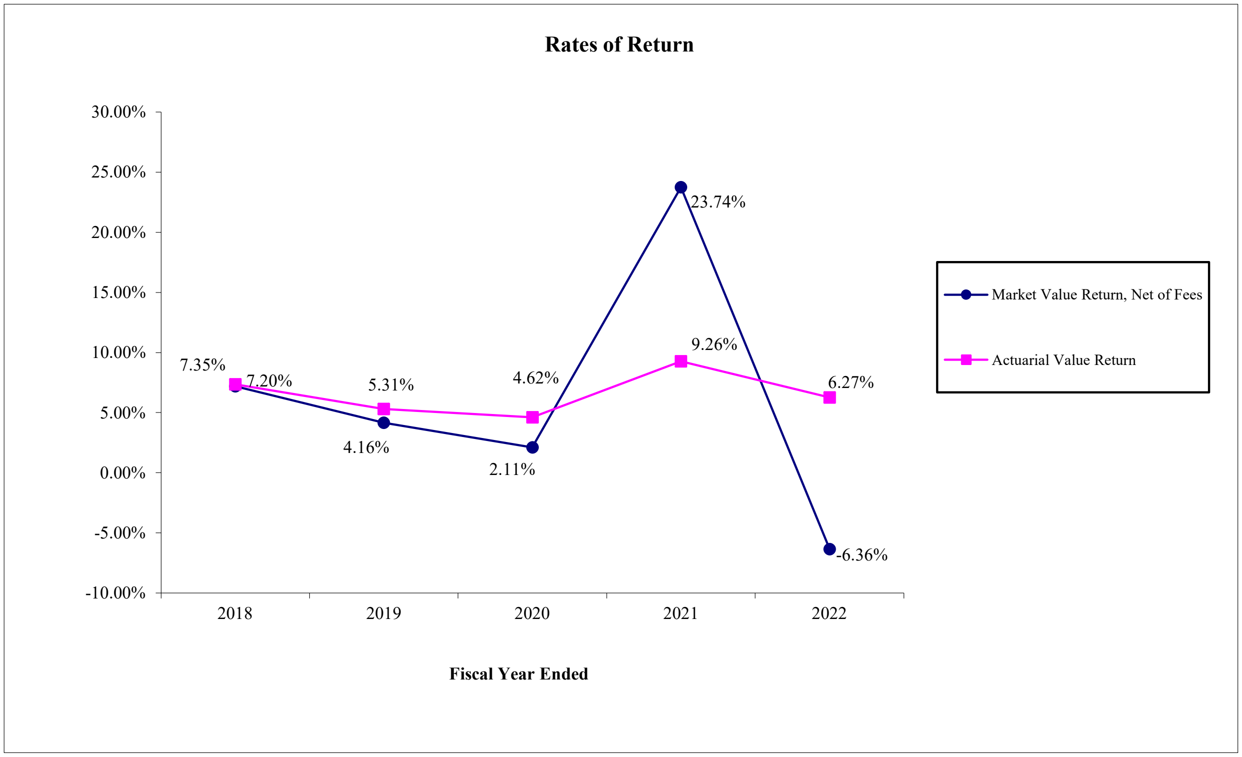
Summary of Valuation Results...*continued*

Rate of Return

The investment return of the trust fund (i.e. total return including both realized and unrealized gains and losses) based on the market value of assets for the fiscal year ended June 30, 2022 was (6.36%), net of fees. The investment return on the actuarial value of assets was 6.27%. The expected rate of return was 7.00% for the plan year ended June 30, 2022.

The actuarial value of assets, which is used to determine the City's contribution rate for the following fiscal year, is determined using a method that is designed to smooth the impact of market fluctuations. Unlike the market value, which immediately reflects all realized and unrealized appreciation during the year, the actuarial value recognizes the difference between the expected return and the actual return over a five-year period, with the stipulation that the actuarial value cannot be less than 90% or more than 110% of market value.

Five - Year Historical Rates of Return



Supporting Information

The remainder of the report is comprised of the following sections or schedules:

Table 1

DEMOGRAPHICS

Number	2022	2021	Increase(Decrease)
General*			
Retirees and Beneficiaries	2,804	2,850	(46)
Disabled Members	156	161	(5)
Terminated Vested Members	1,227	1,261	(34)
DC Plan Members	2,472	2,393	79
Active Vested	506	552	(46)
Active Nonvested	7	9	(2)
Total Active	513	561	(48)
Total Members	7,172	7,226	(54)
Police & Fire			
Retirees and Beneficiaries **	1,181	1,185	(4)
Disabled Members	73	80	(7)
Terminated Vested Members	314	283	31
DC Plan Members	46	45	1
Active Vested	654	687	(33)
Active Nonvested	212	215	(3)
Total Active	866	902	(36)
Total Members	2,480	2,495	(15)

* Includes 3 former City Council members.

** Includes 103 participants in the DROP in 2022 (115 in 2021).

Table 1

DEMOGRAPHICS

Total Membership	2022	2021	Increase(Decrease)
Retirees and Beneficiaries	3,985	4,035	(50)
Disabled Members	229	241	(12)
Terminated Vested Members	1,541	1,544	(3)
DC Plan Members	2,518	2,438	80
Active Vested	1,160	1,239	(79)
Active Nonvested	219	224	(5)
Total Active	1,379	1,463	(84)
Total Members	9,652	9,721	(69)

Table 1

DEMOGRAPHICS

	2022	2021	Increase(Decrease)
Projected Compensation for Coming Year			
General	37,457,792	38,274,993	(817,201)
Police & Fire	57,872,927	58,028,364	(155,437)
Total	95,330,719	96,303,357	(972,638)
Average Compensation for Coming Year			
General	73,017	68,226	4,791
Police & Fire	66,828	64,333	2,495
Total	69,130	65,826	3,304
Average Age (Active Members)			
General	57.78	57.22	0.56
Police & Fire	40.66	40.40	0.26
Total	47.03	46.85	0.18
Average Service (Active Members)			
General	23.68	23.05	0.63
Police & Fire	12.35	12.30	0.05
Total	16.56	16.42	0.14

Table 1

DEMOGRAPHICS

	2022	2021	Increase(Decrease)
Annual Retirement Allowance			
General	41,690,157	41,906,167	(216,010)
Police & Fire	33,184,110	32,692,251	491,859
Total	74,874,267	74,598,418	275,849
Average Monthly Retirement Allowance			
General	1,174	1,160	14
Police & Fire	2,205	2,154	51
Total	1,481	1,454	27

Table 2

ASSET INFORMATION FOR FUNDING PURPOSES

Market Value Reconciliation Split by Employer Group

		General	Police & Fire	Total
1.	Market Value, 06/30/2021	362,061,269	323,364,495	685,425,764
2.	Market Value Adjustment, 06/30/2021	0	0	0
3.	Employer Contributions	32,299,806	22,637,066	54,936,872
4.	Employee Contributions	647,950	1,129,713	1,777,663
5.	Investment Earnings	573,473	511,072	1,084,545
6.	Realized & Unrealized Gain(Loss)	(24,954,264)	(22,238,943)	(47,193,207)
7.	Benefit Payments	(42,031,691)	(33,261,856)	(75,293,547)*
8.	Expenses	(835,787)	(744,844)	(1,580,631)
9.	Market Value, 06/30/2022	327,760,756	291,396,703	619,157,459
10.	Net of Fees Rate of Return	(6.36%)	(6.36%)	(6.36%)

* Includes $5,291,960 made in DROP payments.

Table 3

ASSET INFORMATION FOR FUNDING PURPOSES

Actuarial Asset Value Determination

1.	Market Value	619,157,459
2.	Actuarial Asset Value Corridor	
	Minimum: 90% of Market Value	557,241,713
	Maximum: 110% of Market Value	681,073,205
3.	Determination of Deferred Gain(Loss)	

Fiscal Year	Five Year Spread Actual Return Versus Expected Return	Portion Deferred	Deferred Amount
2022	(93,382,878)	4/5	(74,706,302)
2021	99,773,200	3/5	59,863,920
2020	(29,742,837)	2/5	(11,897,135)
2019	(16,773,005)	1/5	(3,354,601)
Total	(40,125,520)		(30,094,118)

4.	Actuarial Value of Assets, prior to application of 10% corridor (1-3)	649,251,577
5.	Percent of Market Value	104.86%
6.	Actuarial Value of Assets, after application of 10% corridor	649,251,577
7.	Excess/(Shortfall) of Market Value versus Actuarial Value	(30,094,118)
8.	Percent of Market Value	104.86%
9.	Actuarial Value of Assets, General Employees	343,691,552
10.	Actuarial Value of Assets, Police & Fire Employees	305,560,025

Table 4

ACTUARIAL LIABILITY

			General Employees	Police & Fire Employees	Total
1.		Actuarial Liability prior to Changes in Benefit Provisions and Assumptions			
	a.	Active	117,786,447	136,063,752	253,850,199
	b.	Terminated Vested	37,137,938	8,363,128	45,501,066
	c.	Retirees and Beneficiaries	350,566,871	309,474,580	660,041,451
	d.	Total	505,491,256	453,901,460	959,392,716
2.		Actuarial Value of Assets	343,691,552	305,560,025	649,251,577
3.		Unfunded Liability prior to Changes: (1d. - 2.)	161,799,704	148,341,435	310,141,139
4.		Change in Unfunded Liability due to Change in Cost Method	0	0	0
5.		Change in Unfunded Liability due to COLA	0	0	0
6.		Change in Unfunded Liability due to VRIP	0	0	0
7.		Actual Unfunded Liability: (3. + 4. + 5. + 6.)	161,799,704	148,341,435	310,141,139

Table 5

ACTUARIAL (GAIN)LOSS

		General Employees	Police & Fire	Total	
1.	Increase(decrease) in unfunded liability				
	a. Unfunded liability, prior year	174,110,031	150,149,673	324,259,704	
	b. Normal cost	3,727,704	6,601,205	10,328,909	
	c. Contributions	32,947,756	23,766,779	56,714,535	
	d. Interest	11,295,470	10,140,724	21,436,194	
	e. Expected unfunded actuarial liability, current year (a+b-c+d)	156,185,449	143,124,823	299,310,272	
	f. Actual unfunded actuarial liability, current year before benefit, cost method and assumption changes	161,799,704	148,341,435	310,141,139	
	g. (Gain)loss (f-e)	5,614,255	5,216,612	10,830,867	
2.	Reasons for (gain)loss				
	a. Investment return on Actuarial Asset Value				4,534,953
	b. Other*				6,295,914
	c. Total				10,830,867

* Includes net gains and losses from actuarial experience other than investment returns including early retirements, terminations, active and inactive participant deaths, disabilities, salary increases and new entrants.

Table 6

AMORTIZATION SCHEDULES*

Employee Group	Date Established	Source	Initial Amount	Remaining Balance	Years to Amortize	Amortization Method	Required Payment
General Employees	7/1/2022	Actuarial (Gain) Loss	5,614,255	5,614,255	20	Level Dollar	495,277
Police & Fire	7/1/2022	Actuarial (Gain) Loss	5,216,612	5,216,612	20	Level % of Pay	365,696
General Employees	7/1/2021	Actuarial (Gain) Loss	(9,497,625)	(9,265,950)	19	Level Dollar	(837,859)
Police & Fire	7/1/2021	Actuarial (Gain) Loss	(3,790,247)	(3,771,260)	19	Level % of Pay	(273,676)
General Employees	7/1/2020	Actuarial (Gain) Loss	7,251,316	6,885,174	18	Level Dollar	639,694
Police & Fire	7/1/2020	Actuarial (Gain) Loss	6,836,602	6,750,326	18	Level % of Pay	508,448
General Employees	7/1/2020	Voluntary Retirement Incentive Program	9,734,789	3,714,498	1	Level Dollar	3,714,498
General Employees	7/1/2019	Unfunded Liability	190,062,387	154,880,311	9	Level Dollar	22,216,853
Police & Fire	7/1/2019	Unfunded Liability	162,734,751	140,117,173	9	Level % of Pay	18,044,122
			374,162,840	310,141,139			44,873,053

* Effective July 1, 2019, a fresh start amortization base was established equal to the excess of the actuarial liability over the actuarial value of assets.

Table 7

NORMAL COST

		General Employees	Police & Fire Employees	Total
1.	Normal Cost Net of Employee Contributions	3,619,211	6,035,307	9,654,518
2.	Percentage of Payroll	9.66%	10.43%	10.13%

Table 8

CONTRIBUTION SUMMARY

	General Employees	Police & Fire	Total
Contribution Amount			
Normal Cost	3,619,211	6,035,307	9,654,518
Amortization Charges	26,228,463	18,644,590	44,873,053
Total Contribution	29,847,674	24,679,897	54,527,571
Contribution Rate (beginning of year)			
Normal Cost	9.66%	10.43%	10.13%
Amortization Charges	70.02%	32.22%	47.07%
Total Contribution	79.68%	42.65%	57.20%
Contribution Rate (bi-weekly)	82.42%	44.12%	59.17%

Table 9

ASSET INFORMATION

Statement of Fiduciary Net Position as of June 30
(As provided by RRS Staff)

			2022	2021
1.		Cash and Short-Term Investments	7,596,077	3,514,000
2.		Receivables		
	a.	Receivables for Security Transactions	0	73,838
	b.	Employer Contributions	2,026,211	1,716,767
	c.	Interest and Dividends	96,009	104,187
	d.	Other Receivables	4,052	4,052
	e.	Total Receivables	2,126,272	1,898,844
3.		Investments, at Fair Value		
	a.	U.S Equities	154,982,400	216,127,849
	b.	International Equities	94,702,935	133,014,556
	c.	Fixed Income	160,036,366	180,410,694
	d.	Real Estate	80,440,837	52,143,847
	e.	Diversifying Assets	46,753,288	55,752,494
	f.	Private Debt	50,448,181	41,731,502
	g.	Private Equity	35,887,783	17,880,000
	h.	Total Investments	623,251,790	697,060,942
4.		Capital Assets		
	a.	Net Furniture, Fixtures and Equipment	105,783	101,771
	b.	Net Leasehold Improvement	103,916	138,555
	c.	Total Net Capital Assets	209,699	240,326
5.		Total Assets (1. + 2.e. + 3.h. + 4.c.)	633,183,838	702,714,112
6.		Liabilities		
	a.	DROP Payable	11,077,546	14,061,000
	b.	Payable for Security Transactions	0	219,848
	c.	Accounts Payable and Accrued Expenses	2,240,167	2,258,010
	d.	Investment Expenses Payable	355,597	432,500
	e.	Retirement and Death Benefits Payable	353,069	316,990
	f.	Total Accounts Payable	14,026,379	17,288,348
7.		Total Liabilities (6.f.)	14,026,379	17,288,348
8.		Net Position Restricted for Pensions (5. - 7.)	619,157,459	685,425,764

Table 10

ASSET INFORMATION

Statement of Changes in Fiduciary Net Position as of June 30
(As provided by RRS Staff)

			2022	2021
1.		Additions		
	a.	City of Richmond	53,290,506	53,988,500
	b.	Richmond Behavioral Health Authority	1,549,004	1,637,278
	c.	Other	97,362	23,945
	d.	Total Employer Contributions	54,936,872	55,649,723
	e.	Total Member Contributions	1,777,663	1,804,651
	f.	Total Contributions	56,714,535	57,454,374
2.		Investment Income (Loss)		
	a.	Net Increase (Decrease) in Fair Value of Investments	(47,193,207)	138,669,655
	b.	Dividends	2,782,532	1,868,158
	c.	Interest	22,024	0
	d.	Total Investment Income (Loss) before Investment Expense	(44,388,651)	140,537,813
	e.	Investment Expenses	(1,720,011)	(1,838,228)
	f.	Net Investment Income (Loss)	(46,108,662)	138,699,585
3.		Total Additions (1.f. + 2.f.)	10,605,873	196,153,959
4.		Deductions		
	a.	Retirement Benefits	(75,212,611)	(74,468,932)
	b.	Refunds of Member Contributions	(80,936)	(158,078)
	c.	Administrative Expenses	(1,519,736)	(1,497,364)
	d.	Depreciation Expense	(60,895)	(60,082)
	e.	Total Deductions	(76,874,178)	(76,184,456)
5.		Net Increase (Decrease) (3. + 4.e.)	(66,268,305)	119,969,503
6.		Net Position Restricted for Pensions		
	a.	Beginning of Year	685,425,764	565,456,261
	b.	End of Year	619,157,459	685,425,764

Table 11

NET PENSION LIABILITY

	2022		2021
Total Pension Liability			
Service Cost	11,051,933		11,768,290
Interest	64,243,572		64,253,208
Changes of benefit terms	-		479,225
Differences between expected and actual experience	4,615,390		(1,683,740)
Changes of assumptions	-		-
Benefit Payments, including refunds of member contributions	(75,293,547)		(74,627,010)
Net change in total pension liability	4,617,348		189,973
Total pension liability - beginning	954,775,368		954,585,395
Total pension liability - ending (a)	959,392,716		954,775,368
Plan Fiduciary Net Position			
Contributions - employer	54,936,872		55,649,723
Contributions - member	1,777,663		1,804,651
Net investment income	(46,108,662)		138,699,585
Benefit payments, including refunds of member contributions	(75,293,547)		(74,627,010)
Administrative expense	(1,580,631)		(1,557,446)
Other	-		-
Net change in plan fiduciary net position	(66,268,305)		119,969,503
Plan fiduciary net position - beginning	685,425,764		565,456,261
Plan fiduciary net position - ending (b)	619,157,459		685,425,764
Net pension liability - ending (a) - (b)	340,235,257	*	269,349,604
Plan fiduciary net position as a percentage of the total pension liability	64.5%		71.8%
Covered-employee payroll	95,468,950		96,123,709
Net pension liability as a percentage of covered-employee payroll	356.4%		280.2%

* A 1% decrease in the discount rate increases the net pension liability to $429,457,844, an increase of $89,222,587.
A 1% increase in the discount rate decreases the net pension liability to $263,274,546, a decrease of $76,960,711.

Table 12

SCHEDULE OF EMPLOYER CONTRIBUTIONS
(Excludes Member Contributions)

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll	Percentage Contributed
6/30/2013	40,446,209	40,446,209	0	116,665,772	34.67%
6/30/2014	42,342,620	42,342,620	0	110,748,076	38.23%
6/30/2015	46,684,500	46,684,500	0	111,738,352	41.78%
6/30/2016	44,926,043	44,926,043	0	108,015,367	41.59%
6/30/2017	42,911,076	42,911,076	0	107,363,266	39.97%
6/30/2018	46,548,902	46,548,902	0	107,814,490	43.17%
6/30/2019	46,539,647	48,539,647	(2,000,000)	107,188,479	45.28%
6/30/2020	48,276,781	55,240,421	(6,963,640)	104,017,764	53.11%
6/30/2021	55,649,723	55,649,723	0	96,123,709	57.89%
6/30/2022	54,936,872	54,936,872	0	95,468,950	57.54%

Table 13

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Cost Method

The actuarial cost method used to determine the actuarial liability and the normal cost is the Entry Age Actuarial Cost Method. The actuarial liability and the normal cost are used to determine the City's contribution requirement. Under this method, the cost of each individual's pension is allocated on a level percent of payroll basis between the time employment starts (entry age) and the assumed retirement date. The normal cost is the amount allocated for a given year and actuarial liability is the accumulation of prior normal costs as of the determination date. The total actuarial liability for retirement benefits is the sum of the actuarial liability for all members.

The actuarial liability and normal cost for termination benefits, disability benefits, and pre-retirement spouse's death benefits are determined in a similar manner by projecting the member's average final compensation and credited service to each assumed date of termination, disablement, or death.

The actuarial liability for inactive members is determined as the actuarial present value of the benefits expected to be paid; no normal cost is determined for these members.

An experience study was conducted for the five-year period ended June 30, 2018. This study resulted in the Board adopting several changes in assumptions, at the recommendation of the actuary, in order to better anticipate emerging experience under the system. Changes were made in the following actuarial assumptions for all plan participants: turnover rates; retirement rates; disability rates; mortality rates and salary increases.

Prior to June 30, 2014 the Projected Unit Credit Actuarial Cost Method was used.

The following actuarial assumptions and methods were adopted for the July 1, 2022 valuation:

Actuarial Assumptions

Mortality:

Active Lives and Service Retirements

General Employees	- Pub-2010 Below-Median Income Table for General Employees
Police & Fire Employees	- Pub-2010 Below-Median Income Table for Public Safety Employees

Disabled Lives

General Employees	- Pub-2010 Below-Median Income Mortality Table for Disabled General Employees
Police & Fire Employees	- Pub-2010 Below-Median Income Mortality Table for Disabled Public Safety Employees

Inflation: 2.50% per annum, compounded annually.

Table 13

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

Turnover:

General Employees - An attained age table with the following typical rates:

Age	Rate
25	0.0000
35	0.0950
45	0.0550
55	0.0300
60	0.0100

Fire and Police - An attained age table with the following typical rates:

Age	Rate
25	0.0794
35	0.0434
45	0.0096
55	0.0015
60	0.0000

Retirement:

General Employees - A select and ultimate table with the following typical rates; 20% for the first year in which the employee is eligible for unreduced immediate retirement benefits, and:

Age	Rate
55-56	0.100
57	0.080
58-60	0.060
61	0.120
62-64	0.150
65	0.250
66	0.300
67-69	0.200
70	0.400
71-73	0.300
74	0.500
75	1.000

Fire and Police - A select and ultimate table with the following typical rates; 25% for the first year in which the employee is eligible for unreduced immediate retirement, and:

Age	Rate
50	0.100
51-53	0.080
54-55	0.120
56	0.090
57	0.150
58	0.200
59	0.300
60	0.400
61-63	0.500
64	0.750
65	1.000

Table 13

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

Disability:

General Employees - An attained age table with the following typical rates:

Age	Rate
25	0.000000
35	0.000100
45	0.001500
55	0.008500
60	0.014200

Fire and Police - An attained age table with the following typical rates:

Age	Rate
25	0.000100
35	0.000200
45	0.001000
55	0.001300

Duty Disability:

General Employees - An attained age table with the following typical rates:

Age	Rate
25	0.000017
35	0.000017
45	0.000059
55	0.000252
60	0.000804

Fire and Police - An attained age table with the following typical rates:

Age	Rate
25	0.000035
35	0.000047
45	0.000170
55	0.000746

Table 13

DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

Salary Increases:

General Employees -An attained age table with the following typical rates:

Age	Rate
25	0.04000
35	0.04000
45	0.03500
55	0.03000
60	0.02500

Police & Fire Employees -An attained age table with the following typical rates:

Age	Rate
25	0.04500
35	0.03500
45	0.03000
55	0.02500
60	0.02500

Cost of Living Adjustments

None Assumed

Asset Valuation Basis

For determining contribution rates, five-year spread of the difference between actual investment earnings and assumed investment earnings at 7.0%. The resulting actuarial asset value cannot be less than 90% or greater than 110% of market value.

Interest Rate

The expected long term rate of return of 7.00% was used to determine the Entry Age Actuarial Liability and Normal Cost for purposes of determining contribution rates. For financial reporting, under GASB67, the same 7.00% rate was used because it was projected that under the funding policy there will be no future date at which time system assets will be depleted. If that were the case, a blended interest rate using the 7.00% long term rate of return assumption would have been used for years until assets are projected to be depleted and a high quality 20 year municipal bond yield would have been used thereafter.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

Outlined on the following pages are the principal features of the System reflected in the 2022 valuation.

\

All new Police/Fire and Executive plan participants are required to make a one-time irrevocable election to participate in one of three plan options: the Traditional Defined Benefit Plan, the Enhanced Defined Benefit Plan or the Defined Contribution Plan. General employees hired or rehired on or after July 1, 2006 are no longer eligible to participate in either the Enhanced Defined Benefit Plan or the Traditional Defined Benefit Plan. The following is a summary of benefit and contribution provisions for both the Traditional and Enhanced Plans. A brief summary of the Defined Contribution Plan provisions can be found on page 36.

Definitions:

Creditable Service	Total service as an employee, whether or not continuous, but excluding any separate periods of service less than nine months duration.
Creditable Compensation	The full compensation payable to an employee working the full working time for his position; in cases where compensation includes maintenance and other perquisites, the City Manager fixes the value of that part of the compensation not paid in cash.
Average Final Compensation	The average annual creditable compensation of a member during the highest three consecutive years of creditable service in the last ten years of such service or during the entire period of creditable service if less than three years.
Normal Retirement Date	For a member who is a police officer or a firefighter, age 60, or the 65th birthday for all other members.
Member Contributions	Member contributions were discontinued effective July 1, 1966. Most contributions made prior to that date had been refunded by 1975. Effective March 1, 1997, certain City officials and department heads can make contributions to provide for additional service credits. Participants who participate in the Enhanced Defined Benefit Plan contribute 3.57% of pay for General employees and 3.95% of pay for Police/Fire employees. Effective September 1, 2006, member contributions of 1% of pay for General employees and 1.5% of pay for Police/Fire employees are required under the Traditional Defined Benefit Plan and are in addition to the previously described contributions under the Enhanced Defined Benefit Plan.
Employer Contributions	Each year the City contributes an amount equal to the sum of the normal contribution and the actuarial liability contribution. Each of these contribution amounts is computed by applying an actuarially determined contribution rate to the total anticipated compensation of the members for the year. The contribution rates are determined on actuarial bases adopted by the Board and are continued in force until a new valuation is made.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

Assets of System: All of the funds and assets of the System are credited to a single retirement account. To this account all income from the assets of the System is credited. All System benefits are paid from this account.

Service Retirement Eligibility: A member is eligible for normal retirement on his normal retirement date. Early retirement is permitted at any time within the ten year period prior to normal retirement date, provided the member has completed five or more years of creditable service or at any age with 30 years of creditable service (general employees) or 25 years of creditable service (police/fire employees in the Traditional Plan) or 20 years of creditable service (police/fire employees in the Enhanced Plan).

Service Retirement Allowance: Upon service retirement, a member becomes eligible to receive an annual allowance, payable in equal monthly installments. The annual allowance is computed as follows:

1. **Normal Retirement Allowance:** An amount equal to:

   a. General Employees - 1.75% of the member's average final compensation, multiplied by the number of years of creditable service up to 35 years. Participants who elect the Enhanced Plan will have the 1.75% replaced by 2.00% in the determination of their benefit.

   b. Police & Fire Employees - 1.65% of the member's average final compensation, multiplied by his number of years of creditable service up to 35 years. In addition, a supplement of .75% of the member's average final compensation, multiplied by the number of years of creditable service up to 25 years is payable from retirement to age 65.

2. **Early Retirement:** If a member retires prior to the normal retirement date, the allowance is determined as described in 1, above, based on creditable service and average final compensation at actual retirement date. For general employees, the benefit is reduced by 5/12% for each complete month by which retirement precedes the earlier of age 65 or the date on which the member would have completed 30 years of service had he or she remained employed.

   For police and fire employees who elect the Traditional Plan, the benefit is reduced by 5/12% for each complete month by which retirement precedes the earlier of age 60 or the date on which the member would have completed 25 years of service had he or she remained in service.

   For police and fire employees who elect the Enhanced Plan, the benefit is reduced by 5/12% for each complete month by which retirement precedes the earlier of age 60 or the date on which the member would have completed 20 years of service had he or she remained in service.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

Optional Benefits:	The member may elect, with the approval of the Board, one of the following options, in which case the amount payable is the actuarial equivalent of the retirement allowance otherwise payable. 1. **Joint and Survivor Option**, under which a reduced allowance is payable to the member during his lifetime, with the same amount or a designated fraction thereof continued after his death to a designated contingent beneficiary, if living. 2. **Popup Joint and Survivor Option**, under which a reduced allowance is payable to the member during his lifetime, with the same amount or a designated fraction thereof continued after his death to a designated contingent beneficiary, if living. If the designated contingent beneficiary predeceases the member, the allowance is increased to the amount that would have been payable in the absence of the election of an optional form of benefit. 3. **Smooth Out Option**, under which an increased retirement allowance is paid prior to age 65 and a decreased retirement allowance thereafter. The purpose of this option is to provide for a more nearly level total retirement income before and after age 65, taking into account the primary Federal Social Security benefits.
Disability Retirement Eligibility:	A member may retire or may be retired on account of permanent disability at any time prior to his normal retirement date and after five or more years of creditable service, or if the member's normal retirement date is 60 years or less and the member continues in active and uninterrupted service beyond normal retirement date, provided that the medical examiners certify that the member has been completely incapacitated by reason of sickness or injury from performing the duties required with the City, and provided further that if the disability is service connected (i.e., if it arises from a cause that would be compensable under the Virginia Workers' Compensation Act), the five-year service requirement does not apply. The service requirement is also waived for police officers, firemen and communications officers if the disability arises from respiratory or heart disease or from hypertension unless it is certified that such disability was not suffered in line of duty.
Disability Retirement Allowance:	The annual allowance, payable monthly, in the event of non-service connected disability retirement is computed in the same way as in the case of normal retirement prior to the changes effective March 1, 1997, with the following modifications: 1. "Disability Average Compensation" is used in place of Average Final Compensation. In essence, this is the annual rate of compensation in effect at date of disability, graded into average final compensation for members who become disabled within three years of attaining age 60.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

2. Creditable Service is replaced by "Disability Credited Service," which is the smaller of:

   a. the number of years of creditable service the member would have completed at age 60 if he had remained in service until that time, or

   b. the larger of:

      i. twenty years, or

      ii. twice the member's actual years of creditable service

   except that if the disability occurs after age 60, disability credited service is equal to the number of years of creditable service.

3. A deduction for Social Security is made prior to age 65 if the member is entitled to total and permanent disability benefits under Social Security.

4. The "5/12% per month early" reduction is not imposed.

5. The additional pre-age 65 allowance for police officers and firemen is not payable.

6. The disability allowance for any member who retires for service-connected disability is computed as two-thirds (2/3) of the member's disability average compensation. This amount shall be reduced by the amount of compensation, if any, awarded to the member under the Virginia Workers' Compensation Act for as long as such compensation is payable.

7. In no instance may a member who receives a compensation award pursuant to the Virginia Workers' Compensation Act and a retirement allowance from the City receive a benefit which would cause the sum of the disability retirement allowance, workers' compensation award and one-half of the member's primary Social Security benefit to exceed the member's average final compensation at the time the disability caused separation from active service.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

Withdrawal Benefits: If termination occurs after five years of service, a member is entitled to a retirement allowance commencing on his early retirement date or later, up to his normal retirement date, based on his years of creditable service and average final compensation as of his termination date. If benefit payments commence prior to the member's normal retirement date, benefits are reduced by 5/12% for each complete month by which retirement precedes the normal retirement date.

Death Benefit Before Retirement:

1. If a member who became an employee of the City on or before June 13, 1988 who has one or more years of creditable service dies before retirement, a death benefit is payable equal to $16.67 multiplied by the number of months of creditable service of the member, subject to a maximum of $1,000.

2. If a member who is eligible for early or normal retirement should die prior to actual retirement and no benefit of the type described in paragraph (4) below is payable, his surviving spouse is entitled to receive an allowance for life equal to that amount which would have been paid if the full Joint and Survivor Option had been in effect at the time of the member's death. The additional allowance paid from retirement to age 65 to police officers and firemen is not included in this benefit.

3. An allowance for life like that described in the preceding paragraph is also payable to the widow or widower of a member who retires for disability after attaining early retirement age but dies before normal retirement age. In this case, the member's average final compensation, as of the disability retirement date is used but it is assumed the member's service continued to the last day of the month in which death occurs.

4. If a member dies at any time before retirement from a cause that would be compensable under the Virginia Workers' Compensation Act, an allowance is payable to his spouse or to his children under age 18 equal to that which would have been payable if the full Joint and Survivor Option had been in effect at the time of the member's death, but with such allowance computed assuming the member had remained in service to age 65 at the same final average compensation as in effect at the time of his death. The benefit is reduced by any compensation awarded under the Virginia Workers' Compensation Act. Any beneficiary entitled to payment of his benefit may waive his right thereto in order to receive payment of the allowance described in paragraph (2) above.

Death Benefit After Retirement: The beneficiary of a retired member with at least one year of creditable service will receive, at the member's death, a death benefit of $16.67 multiplied by the number of months of creditable service of the member, subject to a maximum of $1,000.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

Post-Retirement Supplements:

The frequency and amount of future supplements (ad-hoc COLA) are determined by action of City Council. Any such supplements are subject to the same conditions of payment as are the basic allowances. The last ad-hoc COLA granted was a 1% COLA effective January 1, 2020 for members that are in pay status on or before January 1, 2019.

City Council Benefits:

Effective July 1, 1991, any member of City Council with 10 or more years of creditable service on City Council shall be entitled to a retirement benefit under the System. The amount of the benefit is 50% of final compensation, payable at age 65. Early retirement is allowed at age 62, with benefits reduced 5% per year prior to the earlier of age 65 or the age that the City Council member would have had 15 years of creditable service. This provision was repealed for active members of City Council, effective February 2, 1996.

Benefits for City Officials and Department Heads:

Effective March 1, 1997, certain City officials and department heads can make contributions to the System in order to receive 2 year's credit for each year of service in a covered position (up to a maximum of 15 additional years). In order to benefit from this provision, the member must serve at least 10 years in a covered position and must make the required contributions for prior and/or future service credits.

Defined Contribution Plan:

Members who elect the defined contribution plan have any accrued benefit under the traditional plan frozen and manage a retirement account funded by employer contributions. Participants in the defined contribution plan are also eligible for disability benefits under the traditional plan. General employees hired or rehired on or after July 1, 2006 are required to participate in the Defined Contribution Plan.

The City will make contributions to plan on the Member's behalf based on the following table (years of creditable service is as of the prior Plan Year):

Years of Creditable Service	% of Creditable Compensation
<5 years	5%
5 - 9 years	6%
10 - 14 years	8%
15 - 19 years	10%

Contributions of non-vested members who terminate employment will be forfeited.

Deferred Retirement Option Plan:

Eligible police and fire employees can elect to participate in the Deferred Retirement Option Program (DROP). Members will have their pension payments paid into a separate account for a period of up to six years (DROP period) while they continue to work and receive salary. An annual fee based on creditable compensation is required to be paid during the DROP period. At the end of the DROP period the participant retires, receives the balance of his or her DROP account, and begins receiving monthly retirement benefits.

Table 14

SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

Voluntary Retirement Incentive Program (VRIP):	General employees who as of July 1, 2013 had attained age 55 with at least 25 years of creditable service or had attained age 65 with at least 5 years of creditable service could elect to retire effective November 1, 2013 by providing written notification to the Board between July 1, 2013 and August 16, 2013. Retirement benefits for eligible participants electing retirement under the VRIP were calculated using salary as of July 1, 2013 instead of average final compensation and were not reduced for early commencement. In addition up to 3 years of additional creditable service were granted so long as total creditable service did not exceed 35 years.
	General employees who as of July 1, 2019 had attained age 55 with at least 25 years of creditable service or had attained age 65 with at least 5 years of creditable service could elect to retire effective November 1, 2019 by providing written notification to the Board between July 15, 2019 and September 3, 2019. Retirement benefits for eligible participants electing retirement under the VRIP were calculated using annual salary as of July 6, 2019 instead of average final compensation and were not reduced for early commencement. In addition up to 3 years of additional creditable service were granted so long as total creditable service did not exceed 35 years.

Table 15

PLAN RISKS (ASOP 51 COMPLIANCE)

Risk may be broadly defined as the chance an outcome or result will differ from the expected outcome or result. In the context of defined benefit pension plans risk is the potential for the future financial condition of the plan to deviate from that expected due to future actual experience different from assumed or expected experience. ASOP 51 requires the actuary to identify and assess risks that may reasonably be expected to impact the plan. Some of the more significant risks are described below. Please let us know if you would like us to quantify or model these risks or any others in more detail.

A. Investment Risk

Investment risk is the risk that actual investment returns differ from the assumed rate of return. Investment returns can be very volatile. Even if the assumed rate of return is realized over the long term, this volatility can lead to significant swings in the plan's funded status and contribution requirement from year to year. Furthermore there is the risk that the assumed rate of return may not be realized.

The assumed rate of return for the plan was 7.00% for the year ended June 30, 2022. Investment returns below the assumed rate of return increase plan costs and decrease the plan's funded status while investment returns in excess of the assumed rate of return decrease plan costs and improve the plan's funded status.

B. Interest Rate Risk

Interest rate risk is the risk that future discount rates differ from expected discount rates. The discount rate is used to discount future expected benefit payments in order to determine a plan's liability as of the measurement date. Higher discount rates result in lower liabilities and lower discount rates result in higher liabilities.

The liability of your plan has a duration of 8.66 as of June 30, 2022. This means a 1% change in discount rates would result in approximately a 9% change in liability. A 1% increase in discount rates would lower plan liability and vice versa.

C. Asset/Liability Mismatch Risk

Asset/Liability mismatch risk is the risk that changes in future asset values are not matched by changes in the value of plan liabilities. Both assets and liabilities are sensitive to interest rates however the same change in interest rates may have differing impact on assets versus liabilities both in terms of direction and magnitude. Matching the duration of interest rate sensitive assets in the plan's portfolio with the duration of the plan's liabilities (see Interest Rate Risk above) is a method that can be employed to protect the plan's funded status from interest rate fluctuations.

D. Longevity Risk

Longevity risk is the risk that mortality experience will be different than expected. Since the plan is not large enough to have credible mortality experience, standard tables are used. The standard tables are comprised of "base rates" and a mortality improvement projection scale which anticipates continued improvement in mortality in the future. If plan participants live longer than expected, the cost of providing lifetime benefits increases and vice versa.

E. Contribution Risk

Contribution risk is the risk that required contributions as determined by the actuary are not made. A comparison of the actuarially determined contribution (ADC) to employer contributions actually made may be found in Table 12.

Table 15

PLAN RISKS (ASOP 51 COMPLIANCE)

F. Plan Maturity Measures

Plan maturity measures are ratios intended to measure the maturity level of a plan. As a plan becomes more mature contribution requirements become more sensitive to investment volatility and more conservative investment strategies may be considered. A high ratio indicates a mature plan.

1. Ratio of retired life liability to total liability: 0.69

   A high ratio of retired life liability to total liability indicates a larger proportion of the liability is due to "fixed" benefit amounts. As a result, attempts to mitigate fluctuating contribution requirements through plan amendments affecting future benefit accruals will have less of an impact.

2. Ratio of net cash flow to market value of assets: (0.03)

   Net cash flow represents contributions received for the year less benefit payments and expenses. Investment income is excluded. A negative ratio indicates a percentage of the assumed rate of return must be realized to cover the annual cash outflow.

3. Ratio of benefit payments to contributions: 1.33

   A high ratio of benefit payments to contributions indicates the extent to which investment return is relied upon to improve the funded status and reduce future costs. A fully funded plan would expect benefit payments to equal or exceed contributions.