



CITY OF BRISTOL RETIREMENT SYSTEM

**Actuarial Valuation as of July 1, 2020
To Determine Funding for Fiscal Year 2021-22**

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Certification

We have performed an actuarial valuation of the Plan as of July 1, 2020 to determine funding for fiscal year 2021-22. This report presents the results of our valuation.

The ultimate cost of a pension plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. Pension costs are met by contributions and by investment return on plan assets. The principal purpose of this report is to set forth an actuarial recommendation of the contribution, or range of contributions, which will properly fund the plan, in accordance with applicable government regulations. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding.
- Information needed to meet disclosure requirements.
- Review of plan experience for the previous year to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the plan, i.e., through a comparison of plan assets and projected plan liabilities.
- Comments on any other matters which may be of assistance in the funding and operation of the plan.

This report may not be used for purposes other than those listed above without Milliman's prior written consent. If this report is distributed to other parties, it must be copied in its entirety, including this certification section.

Milliman's work is prepared solely for the internal business use of the City of Bristol ("City"). To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: (a) the City may provide a copy of Milliman's work, in its entirety, to the City's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the City; and (b) the City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

In preparing this report, we relied on employee census data and financial information as of the valuation date, furnished by the City. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have found them to be reasonably consistent and comparable with data used for other purposes. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Certification

The calculations reported herein have been made on a basis consistent with our understanding of ERISA and the related sections of the tax code. Additional determinations may be needed for purposes other than meeting funding requirements, such as judging benefit security at plan termination or meeting employer accounting requirements. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices.

The valuation results were developed using models intended for valuations that use standard actuarial techniques. In addition to these models, Milliman has developed certain models to develop the expected long term rate of return on assets used in this analysis. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP). The models including all input, calculations, and output may not be appropriate for any other purpose.

We further certify that, in our opinion, each actuarial assumption, method and technique used is reasonable taking into account the experience of the Plan and reasonable expectations. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurement.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impact the objectivity of our work.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



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Section I - Executive Summary Changes Since the Prior Valuation

Plan Changes

The Member Contribution Rate changed for the following employee groups:

For Fire members, the rate increased from 2.25% to 3.00%.

For Police members, the rate decreased from 6.00% to 4.875% for employees hired before March 10, 2020. For employees hired after March 9, 2020, the rate is 5.625%.

For BPSA, BBHD, and Non-Bargaining hired after June 30, 2018, Local 233 hired after June 30, 2019, and Local 1338 hired after January 30, 2020, the rate increased from 4.50% to 5.50%.

The benefit formula changed for the following employee groups:

For BPSA, BBHD, and Non-Bargaining hired after June 30, 2018, Local 233 hired after June 30, 2019, and Local 1338 hired after January 30, 2020, the benefit formula was changed from 2.4% x Final Average Earnings x years of Credited Service to 2.0% x Final Average Earnings x years of Credited Service with a maximum benefit of 72% of Final Average Earnings.

For BPSA and Non-Bargaining who had less than 25 years of Credited Service at January 1, 2018 and who were not eligible for Unreduced Early Retirement at January 1, 2018, the benefit formula is unchanged, but the maximum benefit is set to 100% of Final Average Earnings.

Fire members who complete 25 years of service may elect a Deferred Retirement Option Plan (DROP). Current active Fire employees are not assumed to elect the DROP. The DROP option was determined to have a de minimis impact on active liability. As members elect the DROP, their benefits will be valued accordingly, based on their status as of the January 1 census date preceding the valuation date. This valuation reflects census data as of January 1, 2020; as of that date there were no Fire members participating in the DROP.

In case of the death of a Police employee with at least 10 years of regular service, or of a retired Police member or a member placed on the "Veteran Reserve" at 70% of Compensation, 100% (prior had been 50%) of the benefit that would have been payable to the member on retirement until the retiree would have attained age 75 and one-half of the benefit thereafter, shall be paid to the surviving spouse until death or remarriage. For the purposes of this valuation, we determined this is equivalent to a 75% Joint & Survivor Annuity.

The net effect of these changes was an increase in the Accrued Liability of \$109,000.

Section I - Executive Summary Changes Since the Prior Valuation

Changes in Actuarial Methods and Assumptions

The following actuarial method and assumption changes were reflected in this valuation based on recommendations resulting from the most recent experience study.

- We are phasing over 5 years a change to the interest rate assumption from 7.5% to 7.0%.
- We are phasing over 5 years a change to the generational mortality projection table from Scale AA to Scale BB.

The provision for active Police compensated absences was increased from 9% to 14.4% to reflect the increase in eligible compensation from 25% to 40% of sick pay.

The effect of these changes was an increase in the Accrued Liability of \$11.0 million.

Other Significant Changes

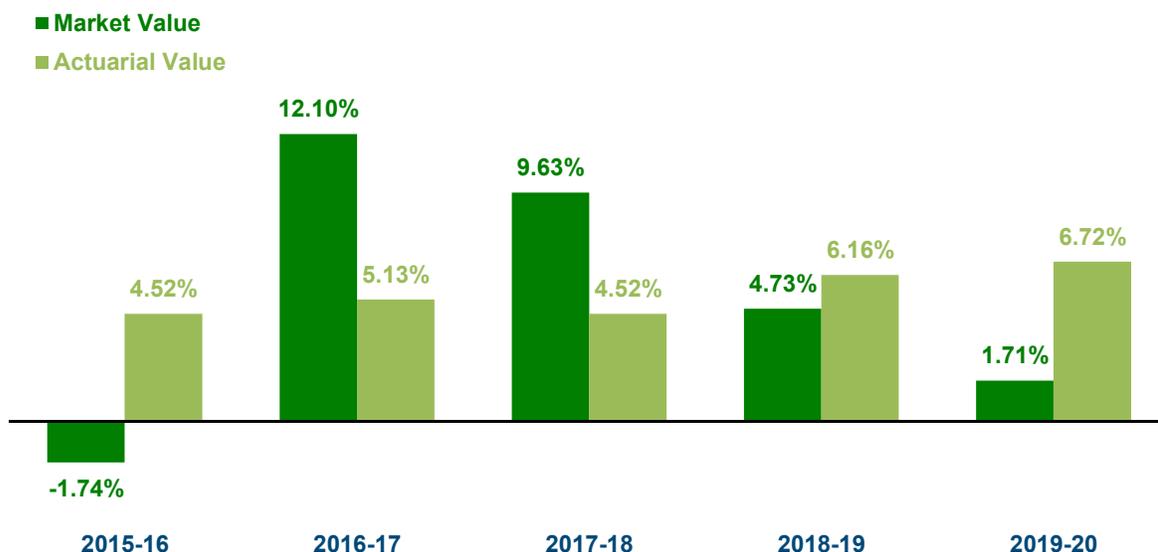
None.

Section I - Executive Summary Assets

There are two different measures of the plan's assets that are used throughout this report. The Market Value is a snapshot of the plan's investments as of the valuation date. The Actuarial Value is a smoothed asset value designed to temper the volatile fluctuations in the market by recognizing investment gains or losses non-asymptotically over four years.

	Market	Actuarial
Value as of July 1, 2019	\$653,838,154	\$652,163,189
City and Member Contributions	2,478,107	2,478,107
Investment Income	11,435,778	43,446,051
Benefit Payments and Administrative Expenses	<u>(27,541,566)</u>	<u>(27,541,566)</u>
Value as of July 1, 2020	640,210,473	670,545,781

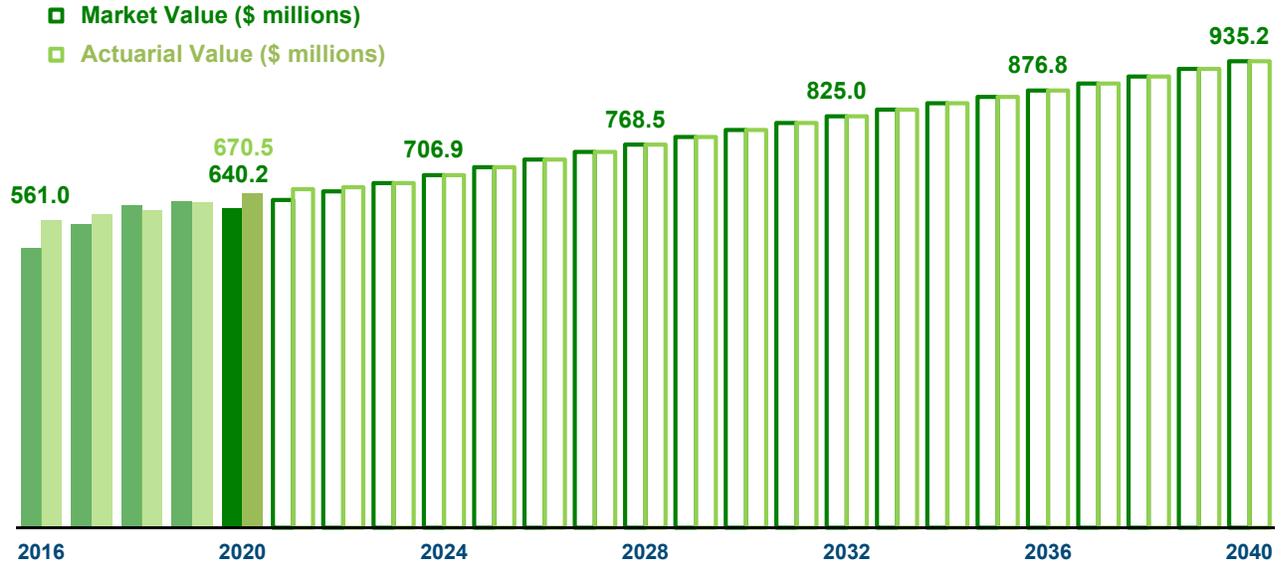
For fiscal year 2019-20, the plan's assets earned 1.71% on a Market Value basis and 6.72% on an Actuarial Value basis. The actuarial assumption for this period was 7.10%; the result is an asset loss of about \$34.6 million on a Market Value basis and a loss of about \$2.4 million on an Actuarial Value basis. Historical rates of return are shown in the graph below.



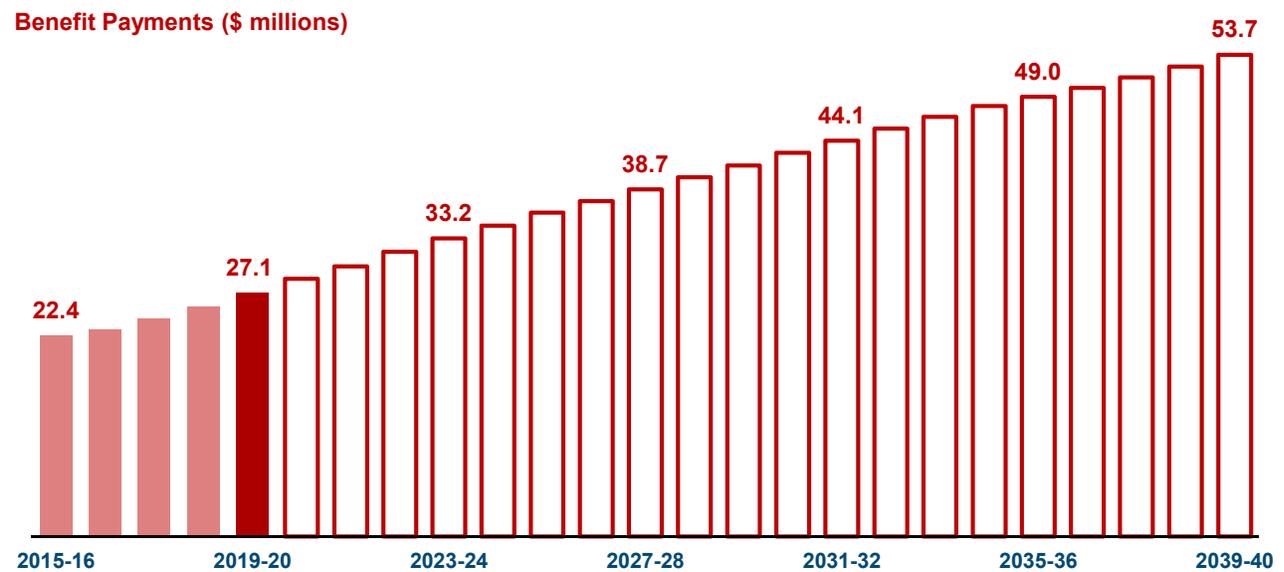
Please note that the Actuarial Value currently exceeds the Market Value by \$30.3 million. This figure represents investment losses that will be gradually recognized in future years. This process will exert upward pressure on the City's contribution, unless there are offsetting market gains.

Section I - Executive Summary Assets (continued)

The graph below shows how this year's asset values compare to where the plan's assets have been over the past several years and how they are projected to change over the next 20 years. For purposes of this projection, we have assumed that the City always contributes the Actuarially Determined Contribution and the investments always earn the assumed interest rate each year.

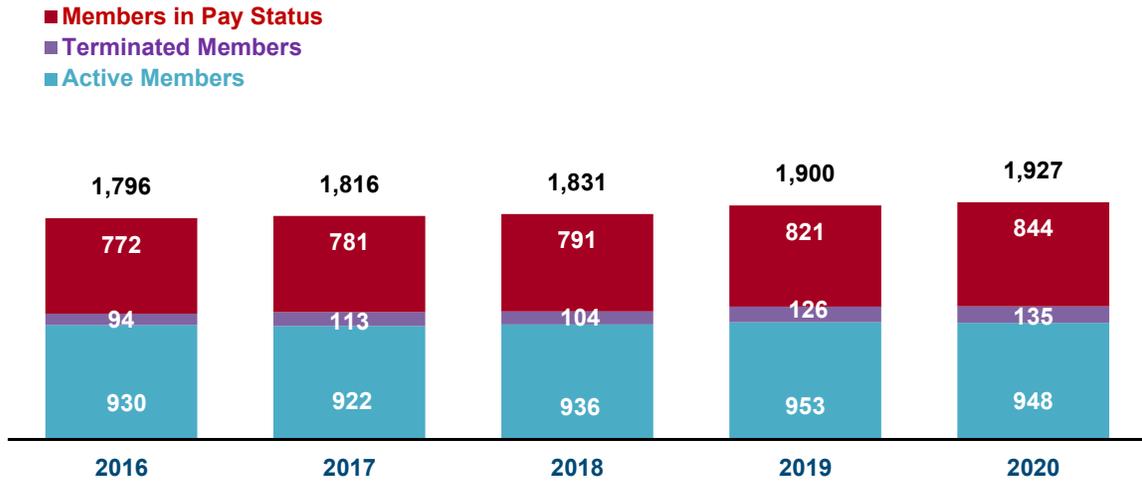


In 2019-20, the plan paid out \$27.1 million in benefits to members. Over the next 20 years, the plan is projected to pay out a total of \$835 million in benefits to members.



Section I - Executive Summary Membership

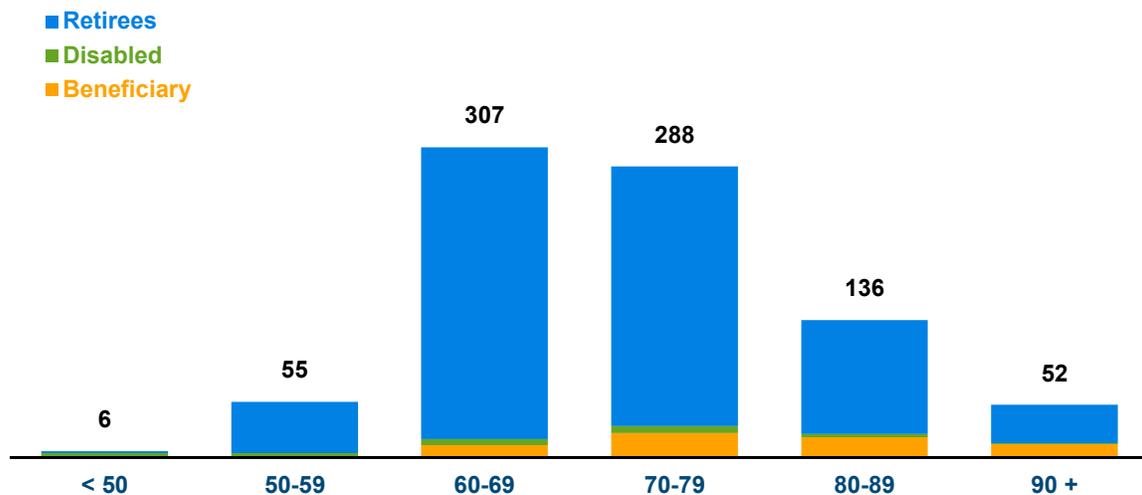
There are three basic categories of plan members included in the valuation: (1) members who are receiving monthly pension benefits, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) active employees who have met the eligibility requirements for membership.



Members in Pay Status on July 1, 2020

City	626	Average Age	72.2
Fire	91	Total Annual Benefit	\$27,225,770
Police	<u>127</u>	Average Annual Benefit	32,258
Total	844		

The members in pay status fall across a wide distribution of ages:



Section I - Executive Summary Membership (continued)

Terminated Vested Members on July 1, 2020

City	36	Average Age	45.3
Fire	0	Total Annual Benefit	\$600,078
Police	<u>6</u>	Average Annual Benefit	14,287
Total	42		

Nonvested Members Due Refunds on July 1, 2020

City	93
Fire	0
Police	<u>0</u>
Total	93

Active Members on July 1, 2020

City	743	Average Age	47.8
Fire	86	Average Service	11.9
Police	<u>119</u>	Payroll	\$53,660,972
Total	948	Average Payroll	56,604

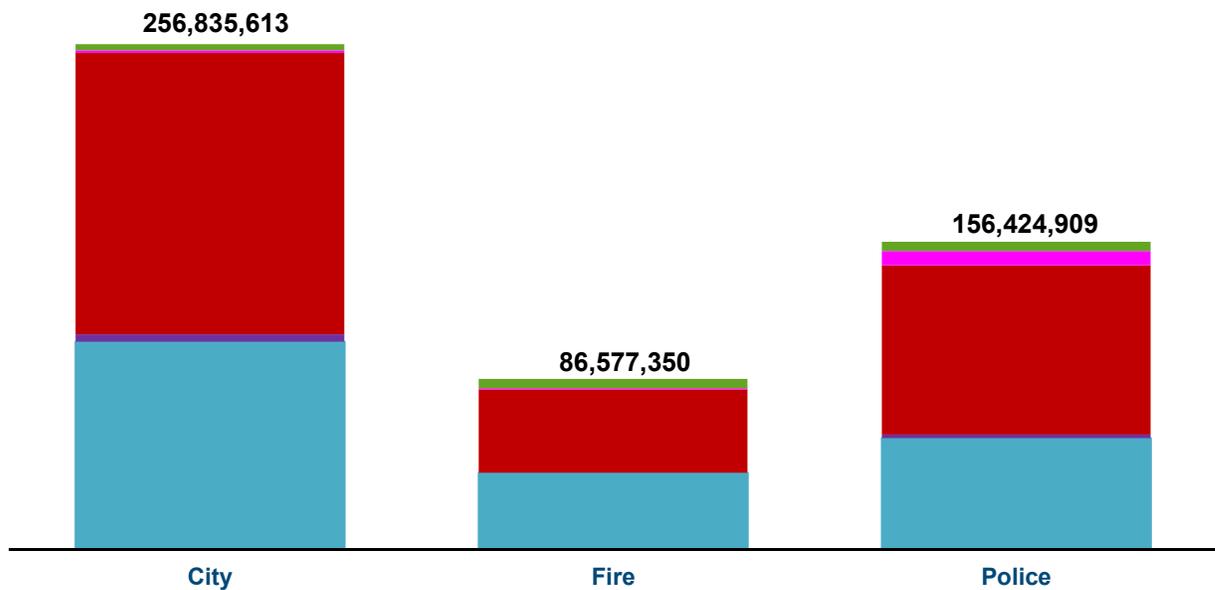
The table below illustrates the age and years of service of the active membership:

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	14							14
25-29	41	11						52
30-34	44	55	5					104
35-39	40	23	22	3				88
40-44	37	18	20	25	3			103
45-49	23	18	24	18	6	6		95
50-54	21	20	36	26	37	12	10	162
55-59	29	19	26	40	26	8	21	169
60-64	12	14	25	33	16	8	11	119
65+	3	9	7	13	6	1	3	42
Total	264	187	165	158	94	35	45	948

Section I - Executive Summary Accrued Liability

The Accrued Liability as of July 1, 2020 equals \$499,837,872, which consists of the following pieces:

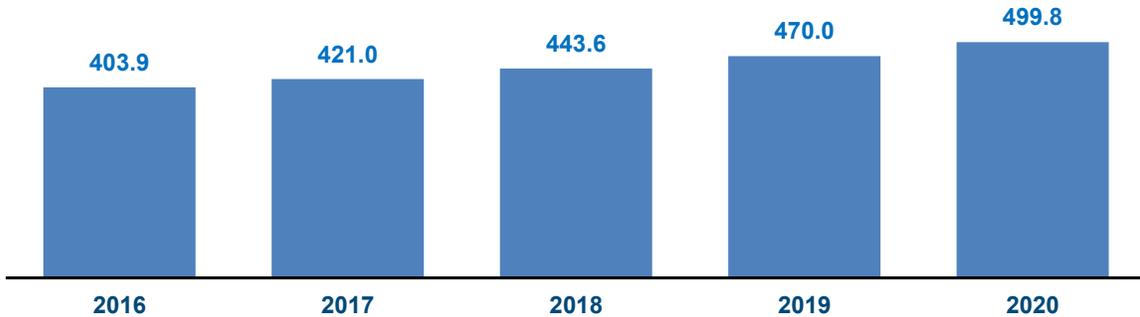
- **Beneficiaries = \$12.6 million**
- **Disabled Retirees = \$9.0 million**
- **Service Retirees = \$272.0 million**
- **Terminated Vested Members = \$5.5 million**
- **Active Members = \$200.7 million**



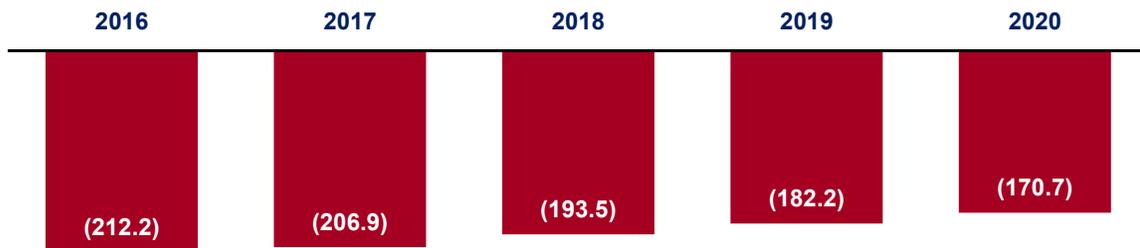
Section I - Executive Summary Funded Status

The Accrued Liability grows over time as active members earn additional benefits, and goes down over time as members receive benefits; it may also change when there are changes to the plan provisions or changes in the actuarial assumptions. The Unfunded Accrued Liability is the dollar difference between the Accrued Liability and the Actuarial Value of Assets; the Funded Ratio is the ratio of the two.

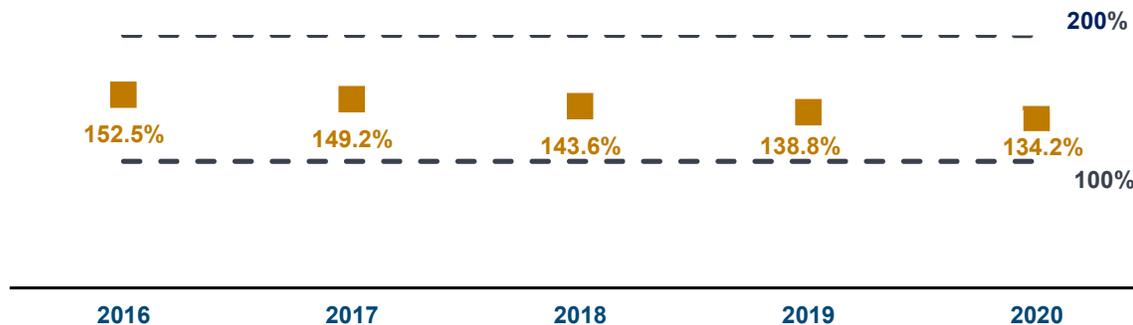
Accrued Liability (\$ millions)



Unfunded Accrued Liability (\$ millions)



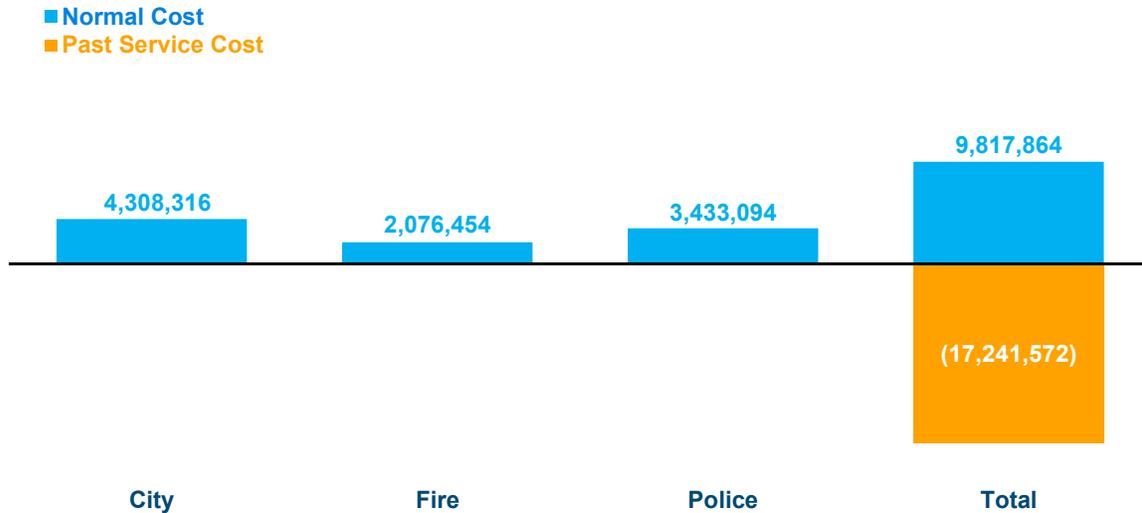
Funded Ratio



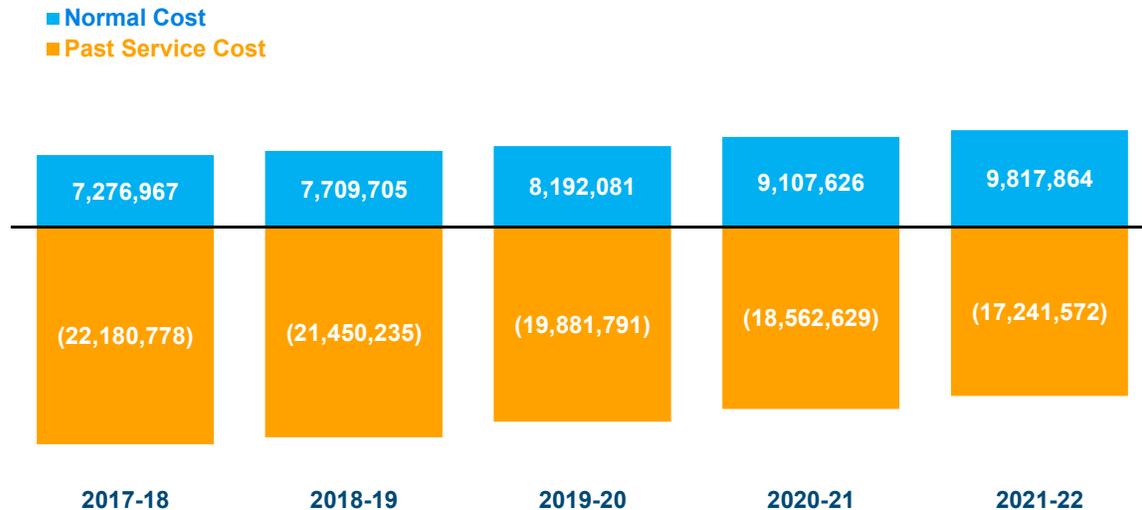
Section I - Executive Summary Actuarially Determined Contribution

The Actuarially Determined Contribution consists of two pieces: a **Normal Cost** payment to fund the benefits earned each year, and a **Past Service Cost** to gradually reduce any unfunded or surplus liability. If the surplus is sufficiently large, it can be used to subsidize the Normal Cost and little or no contribution may be necessary to maintain the funded status of the plan.

The Actuarially Determined Contribution for fiscal year 2021-22 is shown graphically below.

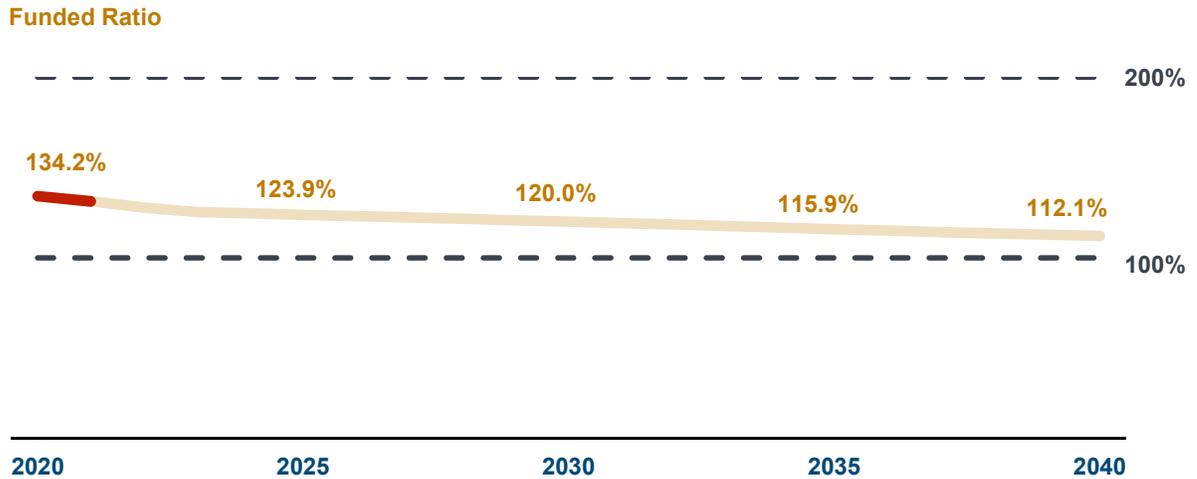


The chart below shows the Actuarially Determined Contribution for the past five fiscal years. Note that the Normal Cost is relatively consistent from year to year, whereas the Past Service Cost tends to be more volatile since it reflects the impact of asset performance.



Section I - Executive Summary Long-Range Forecast

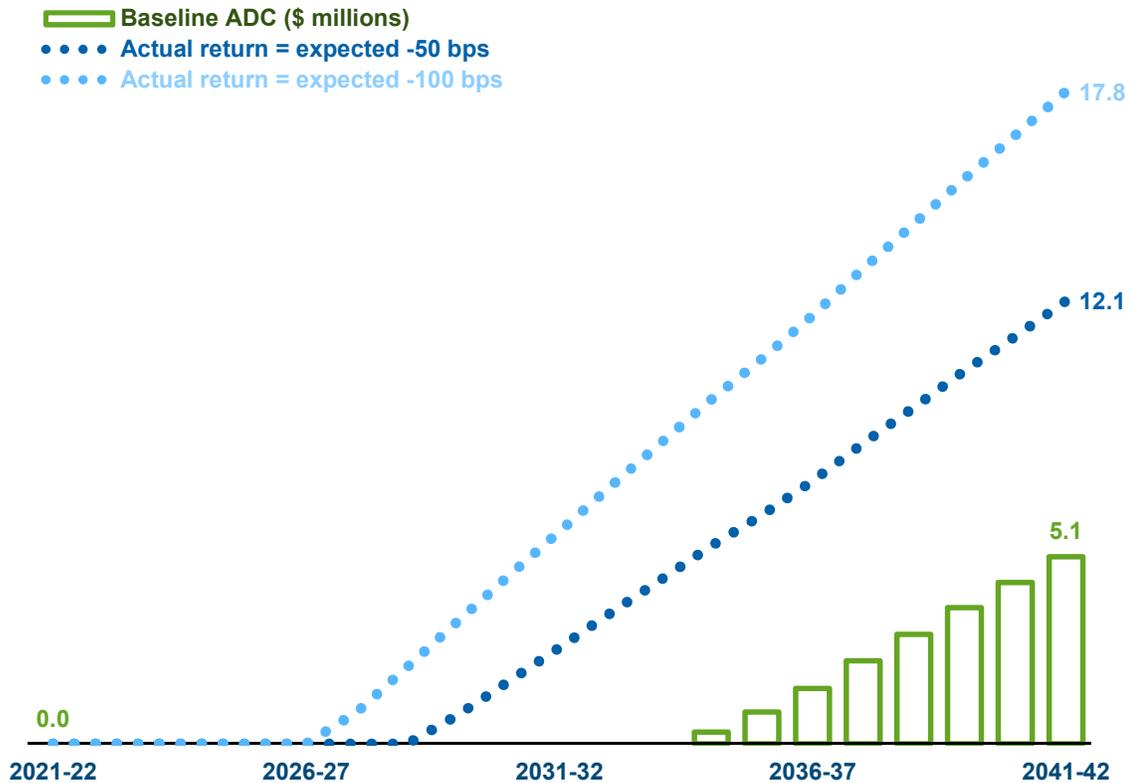
If the City pays the Actuarially Determined Contribution each year, the investments earn exactly the assumed interest rate each year, and there are no changes in the plan provisions or in the actuarial methods and assumptions, then we project the following changes in the plan's funded status:



To the extent that there are future investment or liability gains or losses, changes in the actuarial assumptions or methods, or plan changes, the actual valuation results will differ from these forecasts. Please see Section III C for more details of the long range forecast.

Section I - Executive Summary Long-Range Forecast (continued)

Pension benefits are paid for through a combination of contributions from the City and from employees, and from investment income. If the investments persistently earn less than the assumed interest rate, then the plan's funded status would suffer, and to compensate, the City's contribution levels would be pushed higher. The risks of the investments underperforming are illustrated in the hypothetical scenarios below:



The scenarios illustrated above are based on deterministic projections that assume emerging plan experience always exactly matches the actuarial assumptions; in particular that actual asset returns will be constant in every year of the projection period. Variation in asset returns, contribution amounts, and many other factors may have a significant impact on the long-term financial health of the plan, the liquidity constraints on plan assets, and the City's future contribution levels. Stochastic projections could be prepared that would enable the City to understand the potential range of future results based on the expected variability in asset returns and other factors. Such analysis was beyond the scope of this engagement.

Section I - Executive Summary Summary of Principal Results

Membership as of	July 1, 2019	July 1, 2020
Active Members	953	948
Terminated Members	126	135
Members in Pay Status	<u>821</u>	<u>844</u>
Total Count	1,900	1,927
 Payroll	 \$52,204,668	 \$53,660,972
 Assets and Liabilities as of	 July 1, 2019	 July 1, 2020
Market Value of Assets	\$653,838,154	\$640,210,473
Actuarial Value of Assets	652,163,189	670,545,781
 Accrued Liability for Active Members	 189,599,926	 200,711,261
Accrued Liability for Terminated Members	4,751,911	5,503,226
Accrued Liability for Members in Pay Status	<u>275,613,834</u>	<u>293,623,385</u>
Total Accrued Liability	469,965,671	499,837,872
 Unfunded Accrued Liability	 (182,197,518)	 (170,707,909)
 Funded Ratio	 138.8%	 134.2%
 Actuarially Determined Contribution for Fiscal Year	 2020-21	 2021-22
Normal Cost	\$9,107,626	\$9,817,864
Past Service Cost	(18,562,629)	(17,241,572)
Actuarially Determined Contribution	0	0

Section II - Plan Assets

A. Summary of Fund Transactions

Market Value as of July 1, 2019 \$653,838,154

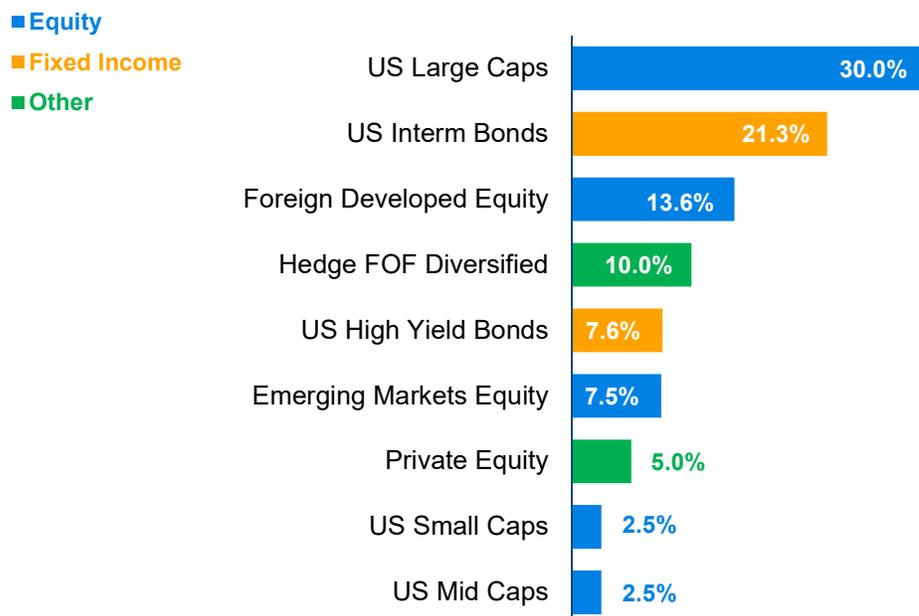
City Contributions	0
Member Contributions	2,478,107
Net Investment Income	11,435,778
Benefit Payments	(27,091,735)
Administrative Expenses	(449,831)

Market Value as of June 30, 2020 640,210,473

Expected Return on Market Value of Assets	45,614,166
Market Value (Gain)/Loss	34,628,219
Approximate Rate of Return *	1.71%

* The rate shown here is not the dollar or time weighted investment yield rate which measures investment performance. It is an approximate net return assuming all activity occurred on average midway through the fiscal year.

Target Asset Allocation as of June 30, 2020



Section II - Plan Assets

B. Development of Actuarial Value of Assets

In order to minimize the impact of market fluctuations on the contribution level, we use an Actuarial Value of Assets that recognizes gains and losses in equal installments ('non-asymptotically') over a four year period. The Actuarial Value of Assets as of July 1, 2020 is determined below.

1.	Expected Market Value of Assets:		
	a. Market Value of Assets as of July 1, 2019		\$653,838,154
	b. City and Member Contributions		2,478,107
	c. Benefit Payments		(27,091,735)
	d. Expected Earnings Based on 7.10% Interest		<u>45,614,166</u>
	e. Expected Market Value of Assets as of July 1, 2020		674,838,692
2.	Actual Market Value of Assets as of July 1, 2020		640,210,473
3.	Market Value (Gain)/Loss: (2) - (1e)		34,628,219
4.	Delayed Recognition of Market (Gains)/Losses		
		Percent Not	Amount Not
	Plan Year End	(Gain)/Loss	Recognized
	06/30/2020	\$34,628,219	75%
	06/30/2019	15,702,936	50%
	06/30/2018	(13,949,295)	25%
			<u>(3,487,324)</u>
			30,335,308
5.	Preliminary Actuarial Value of Assets as of July 1, 2020: (2) + (4)		670,545,781
6.	Corridor Limit: 80% of Market Value		512,168,378
	120% of Market Value		768,252,568
7.	Final Actuarial Value of Assets as of July 1, 2020: (5) constrained by (6)		670,545,781
8.	Approximate Rate of Return on Actuarial Value of Assets		6.72%
9.	Actuarial Value (Gain)/Loss		2,431,334

Section III - Development of Contribution

A. Past Service Cost

In determining the Past Service Cost, the Unfunded Accrued Liability is amortized over an open period of 20 years.

	City	Fire	Police	Total
1. Accrued Liability				
Active Members	\$105,501,319	\$38,823,787	\$56,386,155	\$200,711,261
Terminated Members	3,730,897	0	1,772,329	5,503,226
Service Retirees	143,319,930	42,435,338	86,260,133	272,015,401
Disabled Retirees	1,236,112	602,577	7,184,347	9,023,036
Beneficiaries	<u>3,047,355</u>	<u>4,715,648</u>	<u>4,821,945</u>	<u>12,584,948</u>
Total Accrued Liability	256,835,613	86,577,350	156,424,909	499,837,872
2. Actuarial Value of Assets (see Section IIB)				670,545,781
3. Unfunded Accrued Liability: (1) - (2)				(170,707,909)
4. Funded Ratio: (2) / (1)				134.2%
5. Amortization Period				20
6. Amortization Growth Rate				0.00%
7. Past Service Cost: (3) amortized over (5)				(16,113,619)
8. Interest on (7) to Following Fiscal Year				(1,127,953)
9. Past Service Cost for Following Fiscal Year: (7) + (8)				(17,241,572)

Section III - Development of Contribution
B. Actuarially Determined Contribution for FY 2021-22

	City	Fire	Police	Total
1. Total Normal Cost	\$5,615,955	\$1,955,372	\$3,422,659	\$10,993,986
2. Expected Member Contributions	1,852,905	141,717	424,062	2,418,684
3. Net Normal Cost: (1) - (2)	3,763,050	1,813,655	2,998,597	8,575,302
4. Interest on (3) to Following Fiscal Year	545,266	262,799	434,497	1,242,562
5. Normal Cost for Following Fiscal Year (3) + (4)	4,308,316	2,076,454	3,433,094	9,817,864
6. Past Service Cost (see Section IIIA)				(17,241,572)
7. Actuarially Determined Contribution for FY 2021-22: (5) + (6), not less than zero				0

Section III - Development of Contribution C. Long Range Forecast

This forecast is based on the results of the July 1, 2020 actuarial valuation and assumes that the City will pay the Actuarially Determined Contribution each year, the assets will return the assumed interest rate on a market value basis each year, and there are no future changes in the actuarial methods or assumptions or in the plan provisions. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

Valuation Date	Values as of the Valuation Date				Fiscal Year	Cash Flows Projected to the Following Fiscal Year			
	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio		City Contributions	Member Contributions	Benefit Payments	Net Cash Flows
07/01/2020	\$499,837,872	\$670,545,781	(\$170,707,909)	134.2%	2021-22	\$0	\$2,490,304	(\$30,098,200)	(\$27,607,896)
07/01/2021	516,987,000	678,587,000	(161,600,000)	131.3%	2022-23	0	2,521,000	(31,719,000)	(29,198,000)
07/01/2022	534,053,000	682,967,000	(148,914,000)	127.9%	2023-24	0	2,583,000	(33,224,000)	(30,641,000)
07/01/2023	550,758,000	690,800,000	(140,042,000)	125.4%	2024-25	0	2,628,000	(34,643,000)	(32,015,000)
07/01/2024	567,235,000	706,938,000	(139,703,000)	124.6%	2025-26	0	2,681,000	(36,065,000)	(33,384,000)
07/01/2025	583,561,000	722,767,000	(139,206,000)	123.9%	2026-27	0	2,720,000	(37,372,000)	(34,652,000)
07/01/2026	599,721,000	738,272,000	(138,551,000)	123.1%	2027-28	0	2,744,000	(38,660,000)	(35,916,000)
07/01/2027	615,878,000	753,535,000	(137,657,000)	122.4%	2028-29	0	2,794,000	(40,015,000)	(37,221,000)
07/01/2028	632,071,000	768,541,000	(136,470,000)	121.6%	2029-30	0	2,811,000	(41,327,000)	(38,516,000)
07/01/2029	648,229,000	783,229,000	(135,000,000)	120.8%	2030-31	0	2,837,000	(42,741,000)	(39,904,000)
07/01/2030	664,387,000	797,588,000	(133,201,000)	120.0%	2031-32	0	2,899,000	(44,094,000)	(41,195,000)
07/01/2031	680,454,000	811,498,000	(131,044,000)	119.3%	2032-33	0	2,961,000	(45,439,000)	(42,478,000)
07/01/2032	696,556,000	825,027,000	(128,471,000)	118.4%	2033-34	0	2,999,000	(46,736,000)	(43,737,000)
07/01/2033	712,685,000	838,156,000	(125,471,000)	117.6%	2034-35	322,000	3,085,000	(47,957,000)	(44,550,000)
07/01/2034	728,912,000	850,881,000	(121,969,000)	116.7%	2035-36	862,000	3,170,000	(48,988,000)	(44,956,000)
07/01/2035	745,270,000	863,635,000	(118,365,000)	115.9%	2036-37	1,511,000	3,200,000	(49,983,000)	(45,272,000)
07/01/2036	762,066,000	876,841,000	(114,775,000)	115.1%	2037-38	2,265,000	3,255,000	(51,142,000)	(45,622,000)
07/01/2037	779,472,000	890,621,000	(111,149,000)	114.3%	2038-39	2,984,000	3,296,000	(52,340,000)	(46,060,000)
07/01/2038	797,347,000	904,981,000	(107,634,000)	113.5%	2039-40	3,715,000	3,368,000	(53,662,000)	(46,579,000)
07/01/2039	815,666,000	919,869,000	(104,203,000)	112.8%	2040-41	4,398,000	3,462,000	(54,969,000)	(47,109,000)

Section III - Development of Contribution
D. History of Funded Status

Valuation Date	Actuarial Value of Assets	Accrued Liability	Unfunded Accrued Liability	Funded Ratio
July 1, 2011	\$535,327,012	\$318,622,353	(\$216,704,659)	168.0%
July 1, 2012	535,331,814	332,042,091	(203,289,723)	161.2%
July 1, 2013	562,862,195	351,182,741	(211,679,454)	160.3%
July 1, 2014	597,487,036	363,225,204	(234,261,832)	164.5%
July 1, 2015	608,722,415	373,446,139	(235,276,276)	163.0%
July 1, 2016	616,089,755	403,937,301	(212,152,454)	152.5%
July 1, 2017	627,928,376	420,994,137	(206,934,239)	149.2%
July 1, 2018	637,056,310	443,592,523	(193,463,787)	143.6%
July 1, 2019	652,163,189	469,965,671	(182,197,518)	138.8%
July 1, 2020	670,545,781	499,837,872	(170,707,909)	134.2%

Section III - Development of Contribution

E. History of City Contributions

Fiscal Year	Actuarially Determined Contribution	Actual City Contribution	Payroll	Actual Contribution as a Percent of Payroll
2012-13	\$0	\$0	\$44,638,648	0.0%
2013-14	604,612	227,500	44,891,754	0.5%
2014-15	507,245	127,325	44,715,823	0.3%
2015-16	352,543	44,000	45,357,037	0.1%
2016-17	756,393	1,064,936	44,945,681	2.4%
2017-18	2,617,369	2,617,369	48,452,620	5.4%
2018-19	0	0	49,004,030	0.0%
2019-20	0	0	51,163,929	0.0%
2020-21	0	TBD	52,204,668	TBD
2021-22	0	TBD	53,660,972	TBD

Section IV - Membership Data

A. Reconciliation of Membership from Prior Valuation

Details of the changes in the Plan membership since the last valuation are shown below. Additional details on the Plan membership are provided in the remainder of Section IV.

	Active Members	Terminated Vested Members	Nonvested Members Due Refunds	Service Retirees	Disabled Retirees	Beneficiaries	Total
Count July 1, 2019	953	40	86	729	24	68	1,900
Terminated							
- no benefits due	(1)	-	-	-	-	-	(1)
- paid refund	(19)	-	(4)	-	-	-	(23)
- vested benefits due	(25)	4	21	-	-	-	0
Retired	(41)	(2)	(1)	44	-	-	0
Died							
- with beneficiary	(2)	-	-	(4)	-	6	0
- no beneficiary	-	-	-	(19)	(1)	(3)	(23)
Returned to Active	9	-	(9)	-	-	-	0
New member	74	-	-	-	-	-	74
Rehired	-	-	-	-	-	-	0
New Alternate Payee	-	-	-	-	-	-	0
Correction	-	-	-	-	-	-	0
Count July 1, 2020	948	42	93	750	23	71	1,927
Breakdown July 1, 2020							
City	743	36	93	581	13	32	1,498
Fire	86	0	0	66	2	23	177
Police	<u>119</u>	<u>6</u>	<u>0</u>	<u>103</u>	<u>8</u>	<u>16</u>	<u>252</u>
Total	948	42	93	750	23	71	1,927

Section IV - Membership Data

B. Statistics of Active Membership

		As of July 1, 2019	As of July 1, 2020
Number of Active Members	City	745	743
	Fire	87	86
	Police	<u>121</u>	<u>119</u>
	Total	953	948
Average Age	City	49.5	49.3
	Fire	46.1	46.8
	Police	39.9	39.7
	Total	47.9	47.8
Average Service	City	11.1	10.9
	Fire	17.5	18.2
	Police	14.0	13.7
	Total	12.0	11.9
Total Payroll	City	\$35,348,623	\$36,603,071
	Fire	6,479,480	6,584,485
	Police	<u>10,376,565</u>	<u>10,473,416</u>
	Total	52,204,668	53,660,972
Average Payroll	City	\$47,448	\$49,264
	Fire	74,477	76,564
	Police	85,757	88,012
	Total	54,779	56,604

Section IV - Membership Data

C. Distribution of Active Members as of July 1, 2020

City

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	10							10
25-29	31	4						35
30-34	37	26	3					66
35-39	40	14	5	1				60
40-44	37	13	11	9	2			72
45-49	23	17	21	6	2	1		70
50-54	21	19	32	22	25	6	9	134
55-59	29	18	24	40	22	6	8	147
60-64	12	14	25	33	15	8	2	109
65+	3	9	6	13	6		3	40
Total	243	134	127	124	72	21	22	743

Fire

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25								0
25-29	2	3						5
30-34	2	4						6
35-39		5	5	1				11
40-44		2	6	8				16
45-49			3	6	1	2		12
50-54			4	3	6			13
55-59		1			3		11	15
60-64					1		6	7
65+			1					1
Total	4	15	19	18	11	2	17	86

Police

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	4							4
25-29	8	4						12
30-34	5	25	2					32
35-39		4	12	1				17
40-44		3	3	8	1			15
45-49		1		6	3	3		13
50-54		1		1	6	6	1	15
55-59			2		1	2	2	7
60-64							3	3
65+						1		1
Total	17	38	19	16	11	12	6	119

Section IV - Membership Data

D. Statistics of Inactive Membership

	As of July 1, 2019	As of July 1, 2020
Terminated Vested Members		
Number	40	42
Total Annual Benefit	\$553,585	\$600,078
Average Annual Benefit	13,840	14,287
Average Age	45.8	45.3
Nonvested Members Due Refunds		
Number	86	93
Service Retirees		
Number	729	750
Total Annual Benefit	\$23,952,225	\$25,216,454
Average Annual Benefit	32,856	33,622
Average Age	71.7	71.8
Disabled Retirees		
Number	24	23
Total Annual Benefit	\$643,681	\$641,025
Average Annual Benefit	26,820	27,871
Average Age	67.3	67.6
Beneficiaries		
Number	68	71
Total Annual Benefit	\$1,232,911	\$1,368,291
Average Annual Benefit	18,131	19,272
Average Age	78.1	78.1

Section IV - Membership Data
E. Distribution of Inactive Members as of July 1, 2020

	Age	Number	Annual Benefits
Terminated Vested Members	< 30	17	\$0
(counts include Terminated Nonvested	30 - 39	25	76,076
Members Due Refunds and	40 - 49	44	199,482
Deferred Beneficiaries)	50 - 59	33	216,099
	60 - 64	6	80,647
	65 +	<u>10</u>	<u>27,774</u>
	Total	135	600,078
 Service Retirees	< 50	2	\$118,897
	50 - 59	51	2,881,684
	60 - 69	289	10,805,421
	70 - 79	257	8,139,383
	80 - 89	113	2,708,932
	90 +	<u>38</u>	<u>562,136</u>
	Total	750	25,216,454
 Disabled Retirees	< 50	3	\$172,593
	50 - 59	3	177,089
	60 - 69	6	145,475
	70 - 79	7	65,367
	80 - 89	3	78,611
	90 +	<u>1</u>	<u>1,890</u>
	Total	23	641,025
 Beneficiaries	< 50	1	\$7,426
	50 - 59	1	82,431
	60 - 69	12	245,951
	70 - 79	24	424,715
	80 - 89	20	374,704
	90 +	<u>13</u>	<u>233,064</u>
	Total	71	1,368,291

Section V - Analysis of Risk

A. Introduction

The results of this actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match these assumptions. As an example, the plan's investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the plan, or of the plan's members.

In addition, as plans mature they accumulate larger pools of assets and liabilities. The increase in size in turn increases the potential magnitude of adverse experience. As an example, the dollar impact of a 10% investment loss on a plan with \$1 billion in assets and liabilities is much greater than the dollar impact for a plan with \$1 million in assets and liabilities. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the plan is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) directs actuaries to provide pension plan sponsors with information concerning the risks associated with the plan:

- Identify risks that may be significant to the plan.
- Assess the risks identified as significant to the plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the plan's risks.

This section of the report uses the framework of ASOP 51 to communicate important information about significant risks to the plan, the plan's maturity, and relevant historical plan data.

Please see Section III C for more information on the basis for the projected results shown on the following pages.

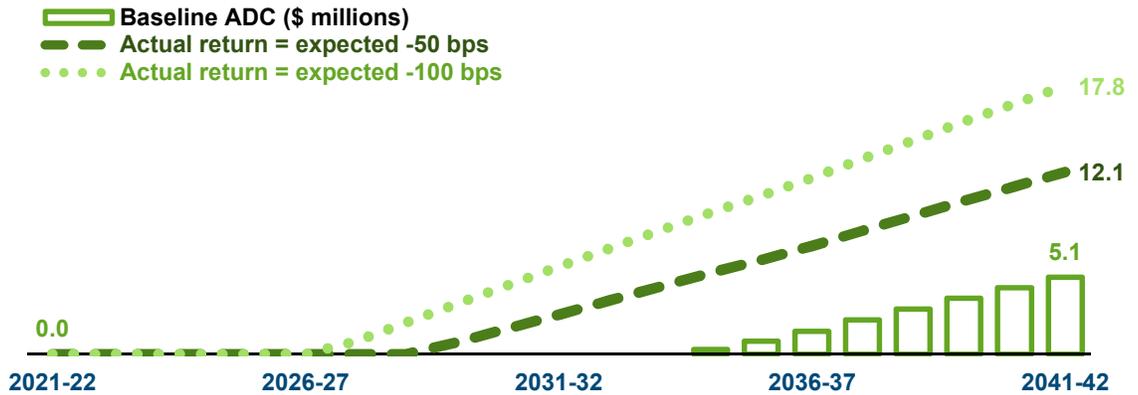
Section V - Analysis of Risk

B. Risk Identification and Assessment

Investment Risk

Definition: This is the potential that investment returns will be different than expected.

Identification: To the extent that actual investment returns differ from the assumed investment return, the plan's future assets, Actuarially Determined Contributions, and funded status may differ significantly from those presented in this valuation. The consequences of persistent underperformance on future Actuarially Determined Contribution levels are illustrated below:



Contribution Risk

Definition: This is the potential that actual future contributions will be less than the Actuarially Determined Contribution.

Identification: The Actuarially Determined Contribution for the Retirement System is \$0 and is projected to remain at \$0 over a 10 year projection period. Therefore this risk is not significant to the City.

Section V - Analysis of Risk

B. Risk Identification and Assessment

Liquidity Risk

Definition: This is the potential that assets must be liquidated at a loss earlier than planned in order to pay for the plan's benefits and operating costs. This risk is heightened for plans with negative cash flows, in which contributions are not sufficient to cover benefit payments plus expenses.

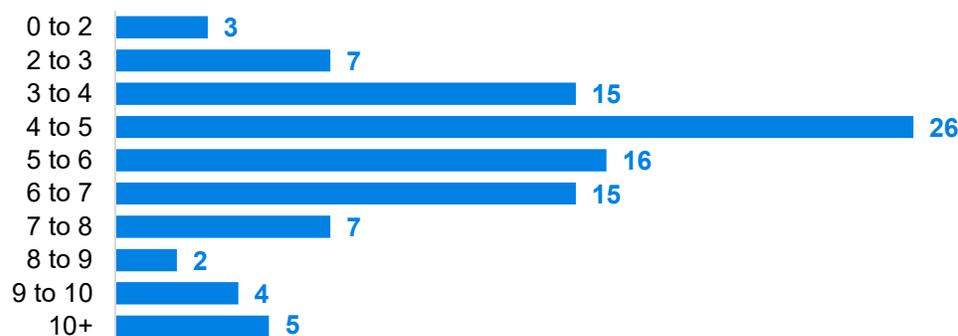
Identification: In 2019-20, the plan had negative cash flow, with city and member contributions to the plan of \$2,478,107 compared to \$27,541,566 of benefit payments and administrative expenses paid out of the plan. We suggest that you consult with your investment advisors with respect to the liquidity characteristics of the plan's investment holdings.

Maturity Risk

Definition: This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time, and for plan assets and/or liabilities to become larger relative to the active member liability.

Identification: The plan is subject to maturity risk because as plan assets and liabilities continue to grow, the dollar impact of any gains or losses on the assets or liabilities also becomes larger.

Assessment: As of July 1, 2020, the plan's Asset Volatility Ratio (the ratio of the market value of plan assets to payroll) is 11.9. According to Milliman's 2020 Public Pension Funding Study, the 100 largest US public pension plans have the following range of Asset Volatility Ratios:



Inflation Risk

Definition: This is the potential for a pension to lose purchasing power over time due to inflation.

Identification: The members of pension plans without fully inflation-indexed benefits are subject to the risk that their purchasing power will be reduced over time due to inflation.

Assessment: This plan provides for some postretirement benefit increases, but the increases are not directly tied to each year's rate of actual inflation and not all members are eligible for these increases; this leaves members bearing some inflation risk.

Section V - Analysis of Risk

B. Risk Identification and Assessment

Insolvency Risk

Definition: This is the potential that a plan will become insolvent; that is, assets will be fully depleted.

Identification: If a plan becomes insolvent, contractually required benefits must be paid from the plan sponsor's other remaining assets.

Assessment: Under the GASB 68 depletion date methodology, the plan is not projected to become insolvent. Please see the GASB 68 report for more details on the underlying analysis.

Demographic Risks

Definition: This is the potential that mortality, turnover, retirement, or other demographic experience will be different than expected.

Identification: The pension liabilities reported herein have been calculated by assuming that members will follow patterns of demographic experience as described in Appendix B. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, Actuarially Determined Contributions, and funded status may differ significantly from those presented in this valuation. Formal Experience Studies performed on a regular basis are helpful in ensuring that the demographic assumptions reflect emerging plan experience.

Retirement Risk

Definition: This is the potential for members to retire and receive subsidized benefits that are more valuable than expected.

Identification: This plan has valuable retirement benefits. If members retire at earlier ages than are anticipated by the actuarial assumptions, this will put upward pressure on subsequent Actuarially Determined Contributions.

Pensionable Earnings Risk

Definition: This is the potential for active members to add items to their pensionable earnings and receive pension benefits that are higher than expected.

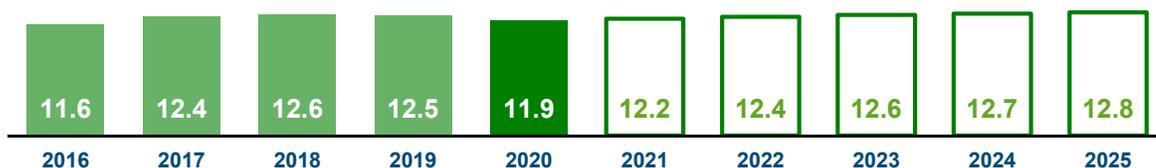
Identification: Compensation for benefit purposes includes compensated absences paid out at retirement. This valuation includes an assumed load for compensated absences, based on the referenced experience study. The load is 13% for City, 11% for Fire, and 14.4% for Police. To the extent that actual compensated absences are different from expected, this could put additional pressure on subsequent Actuarially Determined Contributions.

Section V - Analysis of Risk

C. Maturity Measures

The metrics presented below are different ways of understanding the plan's maturity level, both in the past and as it is expected to change in the coming years.

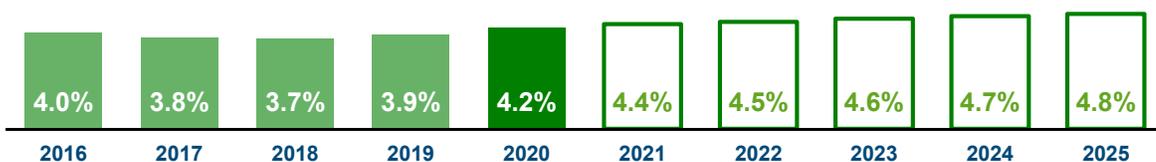
Asset Volatility Ratio: Market Value of Assets compared to Payroll



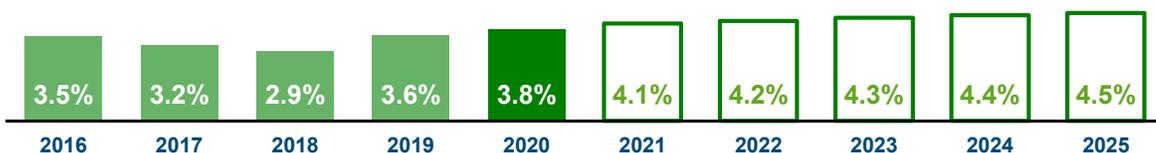
Accrued Liability for members in pay status compared to total Accrued Liability



Benefit Payments compared to Market Value of Assets



Net Cash Flows compared to Market Value of Assets



Duration of Accrued Liability (based on GASB 68 sensitivity disclosures)



Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the Entry Age Normal Method. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability; both pieces include interest to adjust for the lag between the valuation date and the end of the fiscal year.

The Normal Cost is determined by calculating the present value of future benefits for present active Members that will become payable as the result of death, disability, retirement or termination. This cost is then spread as a level percentage of earnings from entry age to termination as an Active Member. If Normal Costs had been paid at this level for all prior years, a fund would have accumulated. Because this fund represents the portion of benefits that would have been funded to date, it is termed the Accrued Liability. In fact, it is calculated by adding the present value of benefits for Retired Members and Terminated Vested Members to the present value of benefits for Active Members and subtracting the present value of future Normal Cost contributions.

The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc. which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

The Unfunded Accrued Liability is the excess of the Accrued Liability over the assets which have been accumulated for the plan. This Unfunded Accrued Liability is amortized as a level dollar amount over an open period of 20 years.

The Actuarial Value of Assets is determined by recognizing market gains and losses non-asymptotically over a four year period; the result is constrained within +/-20% of the market value of assets as of the valuation date.

Census data is gathered as of the January 1 preceding the valuation date. The benefits for retirees who are eligible for the pension escalator reflect the benefits payable as of the valuation date. No other adjustments are made to the census data except that age and service are measured as of the valuation date, assuming no change in status since the census date.

The long-range forecasts included in this report have been developed by assuming that members will terminate, retire, become disabled, and die according to the actuarial assumptions with respect to these causes of decrement, and that pay increases, cost of living adjustments, and so forth will likewise occur according to the actuarial assumptions. For those unions whose new employees are eligible to participate in this plan, members who are projected to leave active employment are assumed to be replaced by new active members with the same age, service, gender, and pay characteristics as those hired in the past few years.

Appendix B - Actuarial Assumptions - City

Each of the assumptions used in this valuation was set based on a formal study of the plan's experience for the period July 1, 2011 through June 30, 2015 which reflected industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Interest Rate	7.0% (Prior: 7.1%)	
Inflation	2.70%	
Salary Scale	Age	Rate
	25 and below	6.75%
	30	5.75%
	35	5.00%
	40	4.50%
	45	4.00%
	50	3.75%
	55	3.50%
	60 and above	3.25%
Expenses	None.	
Mortality	<p>Current: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection per Scale BB. This assumption includes a margin for mortality improvements beyond the valuation date.</p> <p>Prior: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 80% phase-in from Scale AA to BB.</p>	
Pre-Retirement Disability	50% of the 1985 Pension Disability Table (DP-85) Class 1. 40% of disabilities are assumed to be service-connected and 60% are assumed to be non-service-connected.	
Percent Married	80% of active members are assumed to have an eligible spouse.	
Age of Spouse	The female spouse is assumed to be three years younger than the male spouse.	
Form of Payment	Retirement benefits are assumed to be paid as a life annuity for current active members. The actual payment form elected is reflected for current retired members.	

Appendix B - Actuarial Assumptions - City

Turnover	Age	Rate
	20	18.00%
	25	18.00%
	30	12.00%
	35	7.00%
	40	5.00%
	45	2.50%
	50	1.75%
	55	1.00%

Retirement	Age	Attained Rule of 80	Not Yet Attained
	53-54	10%	0%
	55-56	22%	1%
	57-59	20%	1%
	60-61	25%	2%
	62	25%	5%
	63	28%	5%
	64	25%	5%
	65	20%	10%
	66-69	30%	10%
	70	100%	100%

Compensated Absences The Actuarial Accrued Liability and Normal Cost have been increased by 5% for active Board of Education members and 13% for active General City members in order to reflect an explicit assumption regarding compensated absences.

Appendix B - Actuarial Assumptions - Fire

Each of the assumptions used in this valuation was set based on a formal study of the plan's experience for the period July 1, 2011 through June 30, 2015 which reflected industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Interest Rate	7.0% (Prior: 7.1%)	
Inflation	2.70%	
Salary Scale	Age	Rate
	25 and below	7.00%
	30	5.00%
	35	4.00%
	40	3.75%
	45	3.50%
	50 and above	3.25%
Expenses	None.	
Mortality	<p>Current: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection per Scale BB. This assumption includes a margin for mortality improvements beyond the valuation date.</p> <p>Prior: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 80% phase-in from Scale AA to BB.</p>	
Pre-Retirement Disability	1985 Pension Disability Table (DP-85) Class 4. 100% of disabilities are assumed to be service-connected.	
Percent Married	80% of active members are assumed to have an eligible spouse.	
Age of Spouse	The female spouse is assumed to be three years younger than the male spouse.	

Appendix B - Actuarial Assumptions - Fire

Turnover	<table border="0"> <thead> <tr> <th style="text-align: center;">Age</th> <th style="text-align: center;">Rate</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">20</td> <td style="text-align: center;">5%</td> </tr> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">5%</td> </tr> <tr> <td style="text-align: center;">30</td> <td style="text-align: center;">2%</td> </tr> <tr> <td style="text-align: center;">35 and above</td> <td style="text-align: center;">0%</td> </tr> </tbody> </table>	Age	Rate	20	5%	25	5%	30	2%	35 and above	0%								
Age	Rate																		
20	5%																		
25	5%																		
30	2%																		
35 and above	0%																		
Retirement	<p>Members who have satisfied normal retirement eligibility are assumed to retire according to the following rates:</p> <table border="0" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: center;">Age</th> <th style="text-align: center;">Rate</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">49</td> <td style="text-align: center;">10%</td> </tr> <tr> <td style="text-align: center;">50-54</td> <td style="text-align: center;">5%</td> </tr> <tr> <td style="text-align: center;">55-56</td> <td style="text-align: center;">10%</td> </tr> <tr> <td style="text-align: center;">57-59</td> <td style="text-align: center;">15%</td> </tr> <tr> <td style="text-align: center;">60</td> <td style="text-align: center;">50%</td> </tr> <tr> <td style="text-align: center;">61</td> <td style="text-align: center;">70%</td> </tr> <tr> <td style="text-align: center;">62-64</td> <td style="text-align: center;">40%</td> </tr> <tr> <td style="text-align: center;">65+</td> <td style="text-align: center;">100%</td> </tr> </tbody> </table>	Age	Rate	49	10%	50-54	5%	55-56	10%	57-59	15%	60	50%	61	70%	62-64	40%	65+	100%
Age	Rate																		
49	10%																		
50-54	5%																		
55-56	10%																		
57-59	15%																		
60	50%																		
61	70%																		
62-64	40%																		
65+	100%																		
Annuity Election	<p>85% of active members are assumed to elect a 50% Joint & Survivor Annuity and 15% of active members are assumed to elect Life Annuity.</p>																		
Deferred Retirement Option Plan (DROP)	<p>Current active members are not assumed to elect the DROP. The DROP option was determined to have a de minimis impact on active liability. As members elect the DROP, their benefits are reflected accordingly, based on their status as of the January 1 census date preceding the valuation date.</p>																		
Pension Escalation	<p>Pre-July 1, 1999 retirees: 3.25% per year.</p> <p>Retirees between July 1, 1999 and June 30, 2003: 2.50% per year.</p> <p>Post-June 30, 2003 retirees: 2.25% per year.</p>																		
Compensated Absences	<p>The Actuarial Accrued Liability and Normal Cost have been increased by 11.0% for active members in order to reflect an explicit assumption regarding compensated absences.</p>																		

Appendix B - Actuarial Assumptions - Police

Each of the assumptions used in this valuation was set based on a formal study of the plan's experience for the period July 1, 2011 through June 30, 2015 which reflected industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Interest Rate	7.0% (Prior: 7.1%)	
Inflation	2.70%	
Salary Basis	Base Pay	
Salary Scale	Age	Rate
	25 and below	7.00%
	30	5.00%
	35	4.00%
	40	3.75%
	45	3.50%
	50 and above	3.25%
Expenses	None.	
Mortality	<p>Current: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection per Scale BB. This assumption includes a margin for mortality improvements beyond the valuation date.</p> <p>Prior: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 80% phase-in from Scale AA to BB.</p>	
Pre-Retirement Disability	1985 Pension Disability Table (DP-85) Class 4 with 100% of disabilities assumed to be service-connected.	
Percent Married	80% of active members are assumed to have an eligible spouse.	
Age of Spouse	The female spouse is assumed to be three years younger than the male spouse.	

Appendix B - Actuarial Assumptions - Police

Turnover	Age	Rate
	20	5.0%
	25	5.0%
	30	2.0%
	35	1.0%
	40	1.0%
	45	1.0%
	50	0.0%

Retirement Members who have satisfied normal retirement eligibility are assumed to retire according to the following rates:

Age	Rate
47-49	25%
50	40%
51-54	25%
55-57	25%
58-59	40%
60-64	30%
65+	100%

Annuity Election 85% of active members are assumed to elect a Joint & Survivor Annuity and 15% of active members are assumed to elect a Life Annuity.

Joint & Survivor Annuity The Plan provides for a 100% Joint & Survivor Annuity, if married, until age 75, reducing to a 50% Joint & Survivor Annuity thereafter. For the purposes of this valuation, we determined this is equivalent to a 75% Joint & Survivor Annuity.

Pension Escalation Pre-December 15, 2002 retirees: 3.25% per year.

Post-December 15, 2002 retirees: 2.25% per year.

Compensated Absences The Actuarial Accrued Liability and Normal Cost have been increased by 14.4% (Prior: 9.0%) for active members in order to reflect an explicit assumption regarding compensated absences.

Appendix C - Summary of Plan Provisions - City

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility	<p>Membership is compulsory for all full-time employees except firemen, policemen and teachers except that no employee over age 65 at date of hire shall be eligible. Membership is optional with officials.</p> <p>Effective September 24, 1981, full-time definition means minimum employment of 720 hours and at least nine months a year and eligible for City payment of Health Insurance benefits.</p>
Compensation	<p>Salary for service with the City including grants and allowances for maintenance, but not including any general temporary increase or reduction thereof.</p>
Final Average Earnings	<p>The average of the 3 highest years out of the final 10 years.</p>
Credited Service	<p>Years and months of continuous service.</p>
Normal Retirement Date	<p>Any member who has attained age 55, whose age plus service total 80, or any member hired before November 23, 1988 whose age plus service total 85 is eligible for normal retirement.</p>
Normal Retirement Benefit	<p>For employees of BPSA, BBHD, and Non-Bargaining hired after June 30, 2018, Local 233 hired after June 30, 2019, and Local 1338 hired after January 30, 2020: $2.0\% \times \text{Final Average Earnings} \times \text{years of Credited Service}$.</p> <p>For all others: $2.4\% \times \text{Final Average Earnings} \times \text{years of Credited Service}$.</p>
Maximum Benefit	<p>For employees of BPSA, BBHD, and Non-Bargaining hired after June 30, 2018, Local 233 hired after June 30, 2019, and Local 1338 hired after January 30, 2020: Maximum benefit of 72% of Final Average Earnings.</p> <p>For employees of BPSA and Non-Bargaining hired before June 30, 2018, without 25 years of Credited Service or not eligible for Unreduced Early Retirement at January 1, 2018: Maximum benefit of 100% of Final Average Earnings.</p> <p>For all others: No maximum benefit.</p>

Appendix C - Summary of Plan Provisions - City

Early Retirement Eligibility	Age 55 with 10 years of Credited Service.
Early Retirement Benefit	Accrued Benefit, actuarially reduced if payments begin prior to the member's Normal Retirement Date.
Disability Retirement Eligibility	Ten years of continuous service and total and permanent disability.
Disability Retirement Benefit	The pension during continuance of disability is computed with the same formula as normal retirement except that if disability was service-connected, there is no service requirement and the minimum pension is 50% of the member's annual rate of regular compensation at date of disability, including Social Security and Workmens' Compensation payments.
Pre-Retirement Spouse's Death Benefit	<p>If an employee works beyond the date of eligibility for early or normal retirement, and dies before actually retiring, then benefits shall be paid to his designated contingent annuitant, if any, as if the employee had retired immediately prior to his death. If no contingent annuitant has been designated, but the deceased employee leaves a surviving spouse from whom he has not been divorced, then benefits shall be paid to the surviving spouse as if the employee had designated such spouse as his contingent annuitant and had retired immediately prior to death.</p> <p>The benefits payable to a designated contingent annuitant or surviving spouse shall be 50% of the actuarially reduced benefit payable had the employee retired immediately prior to his death. This benefit is in lieu of the return of employee contributions with interest on death before retirement.</p>
Vesting	A member terminating after at least 10 years of Credited Service, provided the member elects to leave all accumulated contributions in the retirement fund, is entitled to a vested deferred pension, to commence at the earliest normal retirement age.
Member Contributions	<p>Board of Education Employees: 6.0% of pay.</p> <p>Employees of BPSA, BBHD, and Non-Bargaining hired after June 30, 2018, Local 233 hired after June 30, 2019, and Local 1338 hired after January 30, 2020: 5.5% of pay.</p> <p>All others: 4.5% of pay.</p>

Appendix C - Summary of Plan Provisions - City

Normal Form of Annuity	Life Annuity.
Prior Service Purchase	Members' dates of participation are adjusted to reflect periods purchased.
Ad hoc Retiree Cost-of-Living Adjustment (COLA)	<p>Effective January 1, 2002, the City granted ad hoc COLAs to General City retirees who were in pay status as of December 31, 2000 equal to 50% of CPI-W from year of retirement through September 2001, with a maximum increase per year equal to 3%. The minimum benefit increase equaled \$10 per month, and the maximum benefit increase equaled \$300 per month.</p> <p>Effective June 1, 2008, the City granted ad hoc COLAs to General City retirees who were in pay status as of December 31, 2006 equal to 75% of CPI-W from September 2001 (or year of retirement if later) through August 2007, with a minimum benefit increase of \$10 per month, and a maximum benefit increase of \$350 per month.</p>

Appendix C - Summary of Plan Provisions - Fire

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility	A member of the Fire Department.
Compensation	The annual rate of base salary for a member's rank and step as set in the applicable collective bargaining agreement, if any. This will include $\frac{1}{4}$ of a member's unused sick leave paid out at the time of retirement, if applicable.
Credited Service	Years and months of continuous service.
Normal Retirement Date	<p>All members after the attainment of age 65.</p> <p>Any member after 25 years of continuous service as a regular fireman, by the request of the member and with the approval of the Trustees.</p> <p>Any regular member after 20 years of continuous service and attainment of age 65, by the request of the member.</p> <p>Note: All members of the regular Fire Department shall be retired on the day following attainment of age 65.</p>
Normal Retirement Benefit	A pension for life at 70% of Compensation paid to the member in the year prior to his retirement, adjusted for escalation.
Disability Retirement Benefit	<p>If any member becomes permanently disqualified for active duty through age or physical disabilities incurred in the discharge of duties, the member may be transferred to the "Veteran Reserve" at the rate of 70% of Compensation at the time of transfer. Such transfer may be revoked and the member returned to active duty if the disability is removed. If permanently disqualified from performing all fire duties, the member may be permanently retired at 70% of Compensation.</p> <p>If any member with at least 10 years of service who becomes disqualified for active duty due to a disability not incurred in the performance of duties, he shall be retired at a rate equal to 28% for the first 10 years plus 2.8% for each additional year, thereafter, subject to a maximum of 70% of Compensation.</p>

Appendix C - Summary of Plan Provisions - Fire

Pre-Retirement Spouse's Death Benefit

In case of a service-connected death of a member, the surviving spouse shall receive annually a sum equal to 70% of Compensation until death or remarriage, with continuation to any children under age 18, share and share alike, or to any dependent if no surviving spouse or children exist. Worker's Compensation payments are deducted from amounts hereunder.

In case of the death of a member with at least 10 years of regular service, or of a retired member or a member placed on the "Veteran Reserve" at 70% of Compensation, one-half of the benefit that would have been payable to the member on retirement or, if a retired member, one-half of the benefit being paid to the member at time of death, shall be paid to the surviving spouse until death or remarriage.

Vesting

Effective July 1, 2003, a member terminating after at least 10 years of Credited Service as a regular firefighter, provided the member elects to leave all accumulated contributions in the retirement fund, is entitled to a vested deferred pension, to commence at the earliest normal retirement age. The vested deferred pension is based on 2.8% of Compensation per year of Credited Service completed prior to separation from employment. Such percentage shall be applied at the time of separation and the resulting allowance shall not be increased thereafter for any reason. This section shall not apply in the case of a discharge for just cause which is not reversed upon appeal or a resignation by a member who has been informed he is under investigation for an offense which constitutes just cause for discharge and from which the member is not exonerated. For purposes of this section, Compensation excludes sick leave payout as it is not applicable.

Member Contributions

Active members contribute 3.00% (Prior: 2.25%) of Compensation on a pre-tax (Section 414(h)(2)) basis. Contributions cease upon the completion of 25 years of Credited Service.

Members' contributions are returnable on termination or death if active, or after retirement (less any benefits paid), provided in each case that no death benefits are otherwise payable.

Deferred Retirement Option Plan (DROP)

An active member who completes 25 years of service may elect to participate in the DROP. During the DROP period, the member will have 55% (or 25% if hired after ratification of the 2019-2023 Agreement) of pension benefits earned through the DROP date credited to the DROP, without interest, and paid at actual retirement as a lump sum payment. Pension benefits will not increase during the DROP period, but at the end of the DROP period, any escalator will be applied to the pension benefit.

Appendix C - Summary of Plan Provisions - Fire

Normal Form of Annuity	Life Annuity.
Prior Service Purchase	Members' dates of participation are adjusted to reflect periods purchased.
Pension Escalation	Benefits increase as active members' salaries increase.
Pension Escalation Limit	Pre-July 1, 1999 retirees: no limit. Retirees between July 1, 1999 and June 30, 2003: 2.50% per year. Post-June 30, 2003 retirees: 2.25% per year.

Appendix C - Summary of Plan Provisions - Police

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility	Members of the Police Department. Includes the City's animal control officer and/or assistant animal control officer.
Compensation	Base Pay.
Credited Service	Years and months of continuous service.
Normal Retirement Date	<p>Any member after 25 years of continuous service as a regular police officer, by the request of the member and with the approval of the Trustees.</p> <p>Any member after 30 years of continuous service as a regular police officer, by the request of the member.</p> <p>Any regular member after 25 years of continuous service and attainment of age 60, by the request of the member.</p> <p>Any regular member after 20 years of continuous service and attainment of age 65, by the request of the member.</p> <p>Note: All members of the regular Police Department shall be retired on the day following attainment of age 65.</p>
Normal Retirement Benefit	A pension for life at 70% of Compensation paid to the member in the year prior to his retirement, adjusted for escalation.
Disability Retirement Benefit	<p>If any member becomes permanently disqualified for active duty through age or physical disabilities incurred in the discharge of duties, the member may be transferred to the "Veteran Reserve" at the rate of 70% of Compensation at the time of transfer. Such transfer may be revoked and the member returned to active duty if the disability is removed. If permanently disqualified from performing all police duties, the member may be permanently retired at 70% of Compensation.</p> <p>If any member with at least 10 years of service who becomes disqualified for active duty due to a disability not incurred in the performance of duties, he shall be retired at a rate equal to 28% for the first 10 years plus 2.8% for each additional year, thereafter, subject to a maximum of 70% of Compensation.</p>

Appendix C - Summary of Plan Provisions - Police

Pre-Retirement Spouse's Death Benefit

In case of a service-connected death of a member, the surviving spouse shall receive annually a sum equal to 70% of Compensation until death or remarriage, with continuation to any children under age 18, share and share alike, or to any dependent if no surviving spouse or children exist. Worker's Compensation payments are deducted from amounts hereunder.

Current:

In case of the death of a member with at least 10 years of regular service, or of a retired member or a member placed on the "Veteran Reserve" at 70% of Compensation, 100% of the benefit that would have been payable to the member on retirement until the retiree would have attained age 75 and one-half of the benefit thereafter, shall be paid to the surviving spouse until death or remarriage.

Prior:

In case of the death of a member with at least 10 years of regular service, or of a retired member or a member placed on the "Veteran Reserve" at 70% of Compensation, one-half of the benefit that would have been payable to the member on retirement or, if a retired member, one-half of the benefit being paid to the member at time of death, shall be paid to the surviving spouse until death or remarriage.

Vesting

Effective July, 1 2003, a member terminating after at least 10 years of Credited Service as a regular police officer, provided the member elects to leave all accumulated contributions in the retirement fund, is entitled to a vested deferred pension, to commence at the earliest normal retirement age. The vested deferred pension is based on 2.8% of Compensation per year of Credited Service completed prior to separation from employment. Such percentage shall be applied at the time of separation and the resulting allowance shall not be increased thereafter for any reason. This section shall not apply in the case of a discharge for just cause which is not reversed upon appeal or a resignation by a member who has been informed he is under investigation for an offense which constitutes just cause for discharge and from which the member is not exonerated.

Pension Escalation

Pre-December 15, 2002 retirees: benefits increase as active members' salaries increase, with no limit.

Post-December 15, 2002 retirees: benefit increase is 50% of active members' salary increases, but not more than 2.25% per year.

Appendix C - Summary of Plan Provisions - Police

Member Contributions	<p>Members hired prior to March 10, 2020 contribute 4.875% (Prior: 6%) of Compensation on a pre-tax (Section 414(h)(2)) basis.</p> <p>Members hired after March 9, 2020 contribute 5.875% of Compensation on a pre-tax (Section 414(h)(2)) basis.</p> <p>Contributions cease upon the completion of 25 years of Credited Service.</p> <p>Members' contributions are returnable on termination or death if active, or after retirement (less any benefits paid), provided in each case that no death benefits are otherwise payable.</p>
Normal Form of Annuity	<p>Life Annuity.</p>
Prior Service Purchase	<p>Members' dates of participation are adjusted to reflect periods purchased.</p>

Appendix D - Glossary

Actuarial Cost Method - This is a procedure for determining the Actuarial Present Value of Benefits and allocating it to time periods to produce the Actuarial Accrued Liability and the Normal Cost.

Accrued Liability - This is the portion of the Actuarial Present Value of Benefits attributable to periods prior to the valuation date by the Actuarial Cost Method (i.e., that portion not provided by future Normal Costs).

Actuarial Assumptions - With any valuation of future benefits, assumptions of anticipated future events are required. If actual events differ from the assumptions made, the actual cost of the plan will vary as well. Some examples of key assumptions include the interest rate, salary scale, and rates of mortality, turnover and retirement.

Actuarial Present Value of Benefits - This is the present value, as of the valuation date, of future payments for benefits and expenses under the Plan, where each payment is: a) multiplied by the probability of the event occurring on which the payment is conditioned, such as the probability of survival, death, disability, termination of employment, etc.; and b) discounted at the assumed interest rate.

Actuarial Value of Assets - This is the value of cash, investments and other property belonging to the plan, typically adjusted to recognize investment gains or losses over a period of years to dampen the impact of market volatility on the Actuarially Determined Contribution.

Actuarially Determined Contribution (“ADC”) - This is the employer’s periodic contributions to a defined benefit plan, calculated in accordance with actuarial standards of practice.

Attribution Period - The period of an employee’s service to which the expected benefit obligation for that employee is assigned. The beginning of the attribution period is the employee’s date of hire and costs are spread across all employment.

Interest Rate - This is the long-term expected rate of return on any investments set aside to pay for the benefits. In a financial reporting context (e.g., GASB 68) this is termed the Discount Rate.

Normal Cost - This is the portion of the Actuarial Present Value of Benefits allocated to a valuation year by the Actuarial Cost Method.

Past Service Cost - This is a catch-up payment to fund the Unfunded Accrued Liability over time (generally 10 to 30 years). A closed amortization period is a specific number of years counted from one date and reducing to zero with the passage of time; an open amortization period is one that begins again or is recalculated at each valuation date. Also known as the Amortization Payment.

Return on Plan Assets - This is the actual investment return on plan assets during the fiscal year.

Unfunded Accrued Liability - This is the excess of the Accrued Liability over the Actuarial Value of Assets.