CITY OF BRISTOL
RETIREMENT SYSTEM

Actuarial Valuation as of July 1, 2019
To Determine Funding for Fiscal Year 2020-21

Prepared by

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Certification

We have performed an actuarial valuation of the Plan as of July 1, 2019 to determine funding for fiscal year 2020-21. 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.

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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.

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.

Rebecca A. Sielman, FSA
Consulting Actuary

Michelle L. Boyles, FSA
Consulting Actuary

Section I - Executive Summary
Changes Since the Prior Valuation

Plan Changes

The Member Contribution Rate decreased for two employee groups. For Fire members, the rate decreased from 3.75% to 2.25%. For City members not in the BOE, the rate decreased from 6.00% to 4.50%. The reduced amount (1.50%) is contributed towards retiree health benefits. These changes had a nominal impact on the Accrued Liability and increased the Net Normal Cost by $0.4 million.

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 effect of these changes was an increase in the Accrued Liability of $7.7 million.

Other Significant Changes

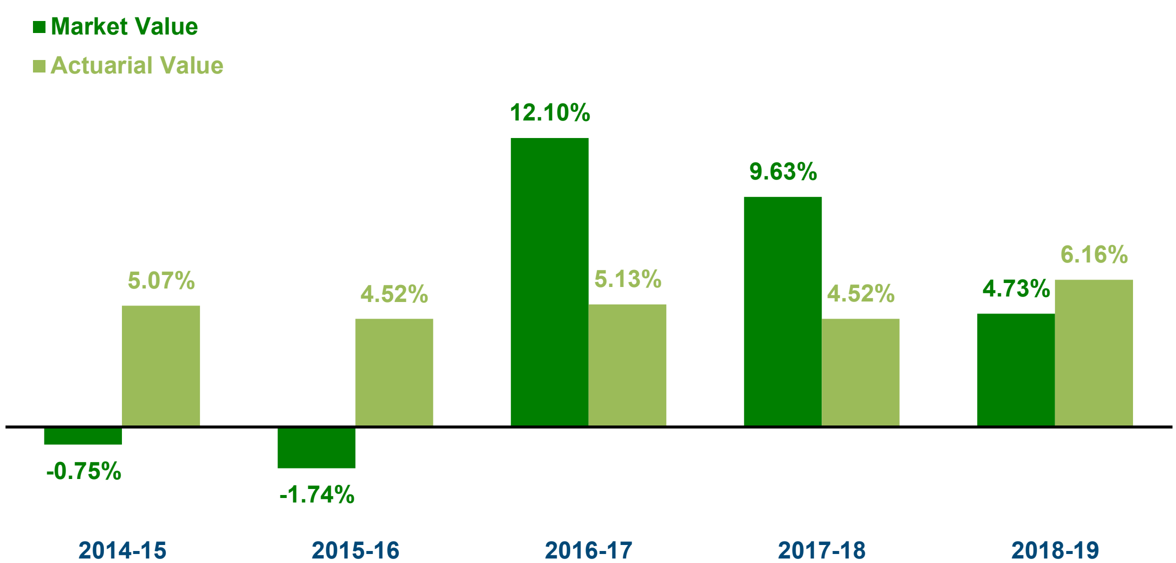
None.

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, 2018	$647,171,556	$637,056,310
City and Member Contributions	2,234,181	2,234,181
Investment Income	30,248,708	38,688,989
Benefit Payments and Administrative Expenses	(25,816,291)	(25,816,291)
Value as of July 1, 2019	653,838,154	652,163,189

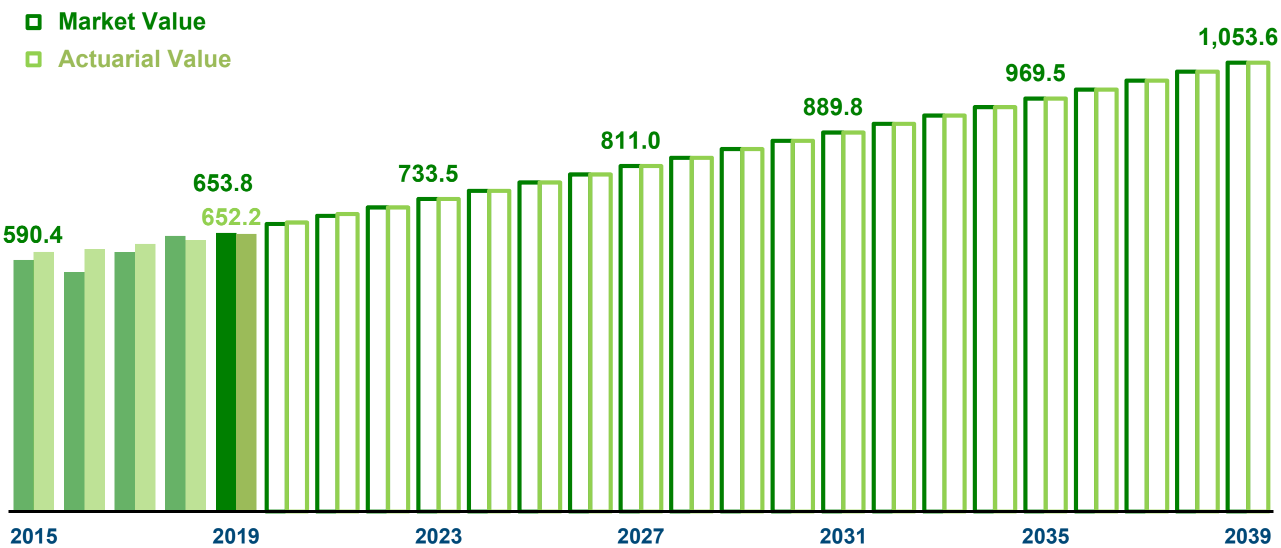
For fiscal year 2018-19, the plan's assets earned 4.73% on a Market Value basis and 6.16% on an Actuarial Value basis. The actuarial assumption for this period was 7.20%; the result is an asset loss of about $15.7 million on a Market Value basis and a loss of about $6.5 million on an Actuarial Value basis. Historical rates of return are shown in the graph below.



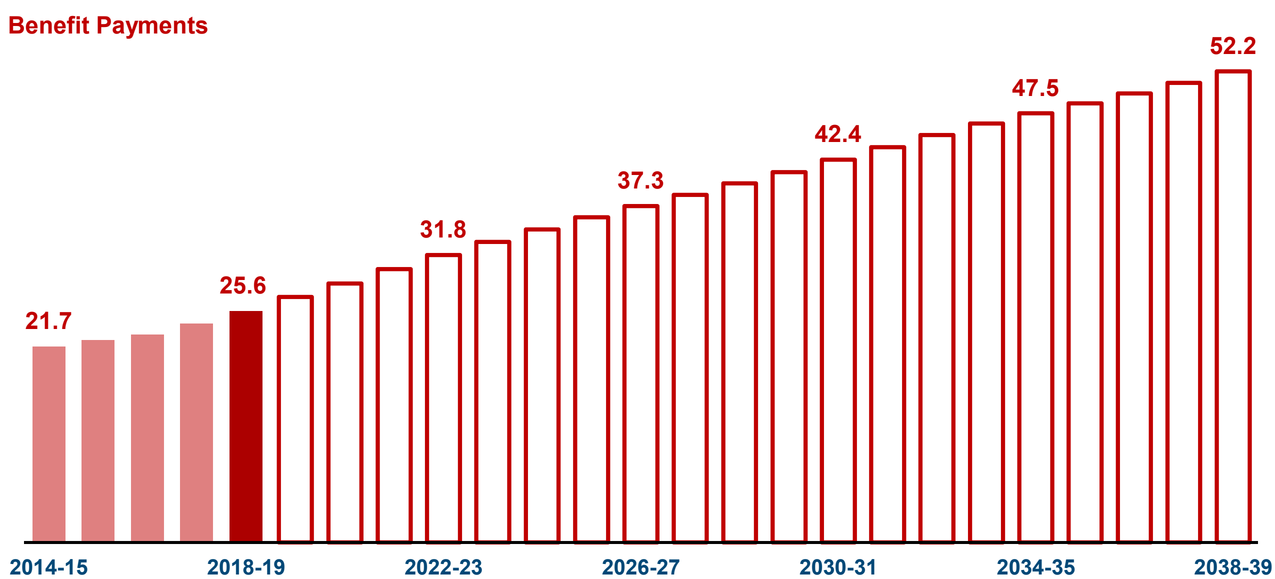
Please note that the Actuarial Value currently is less than the Market Value by $1.7 million. This figure represents investment gains that will be gradually recognized in future years. This process will exert downward pressure on the City's contribution, unless there are offsetting market losses.

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.

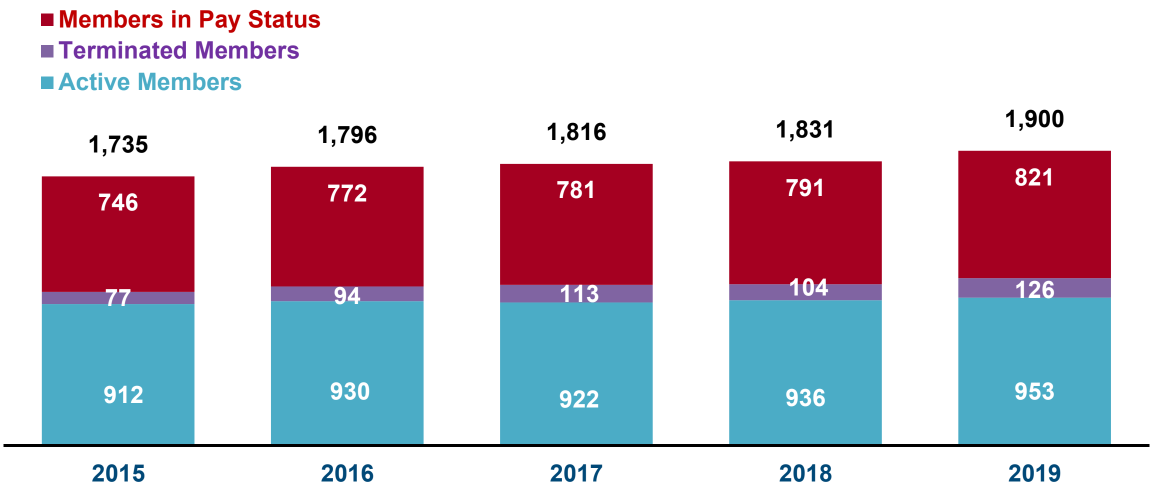


In 2018-19, the plan paid out $25.6 million in benefits to members. Over the next 20 years, the plan is projected to pay out a total of $805 million in benefits to members.



Section I - Executive Summary
Membership

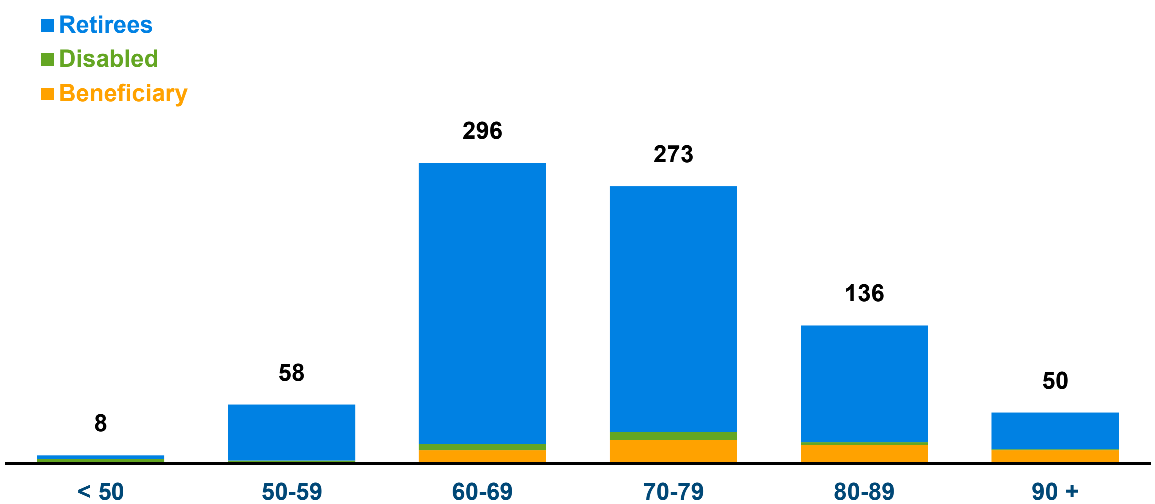
There are three basic categories of plan members included in the valuation: (1) members who are receiving monthly pension benefits, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) active employees who have met the eligibility requirements for membership.



Members in Pay Status on July 1, 2019

City	605	Average Age	72.1
Fire	92	Total Annual Benefit	$25,828,816
Police	124	Average Annual Benefit	31,460
Total	821		

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



Section I - Executive Summary
Membership (continued)

Terminated Vested Members on July 1, 2019

City	35	Average Age	45.8
Fire	0	Total Annual Benefit	$553,585
Police	5	Average Annual Benefit	13,840
Total	40		

Nonvested Members Due Refunds on July 1, 2019

City	86
Fire	0
Police	0
Total	86

Active Members on July 1, 2019

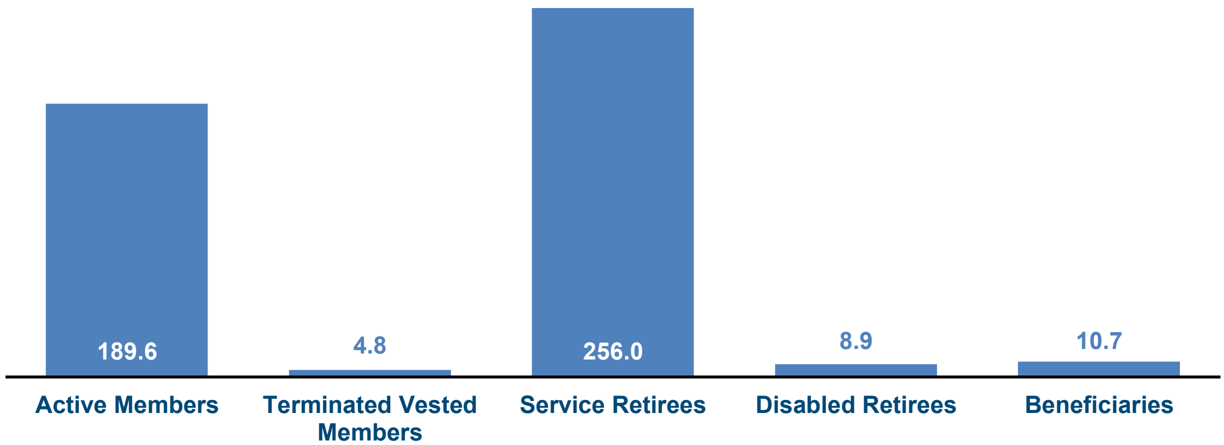
City	745	Average Age	47.9
Fire	87	Average Service	12.0
Police	121	Payroll	$52,204,668
Total	953	Average Payroll	54,779

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

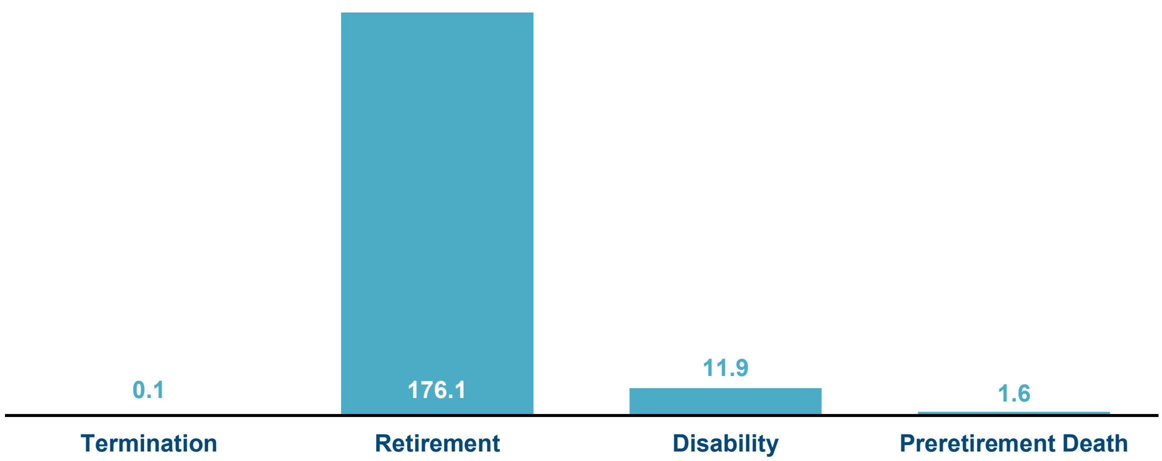
	Years of Service							
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30+**	**Total**
< 25	15							15
25-29	47	13						60
30-34	48	44	5					97
35-39	41	16	25	9				91
40-44	31	15	24	19	1			90
45-49	28	13	31	16	19	5		112
50-54	29	16	41	28	22	16	6	158
55-59	25	15	30	42	23	10	24	169
60-64	14	9	28	35	16	6	8	116
65+	4	4	9	12	9	2	5	45
Total	282	145	193	161	90	39	43	953

Section I - Executive Summary
Accrued Liability

The Accrued Liability as of July 1, 2019 is $469,965,671, which consists of the following pieces (in $ millions):

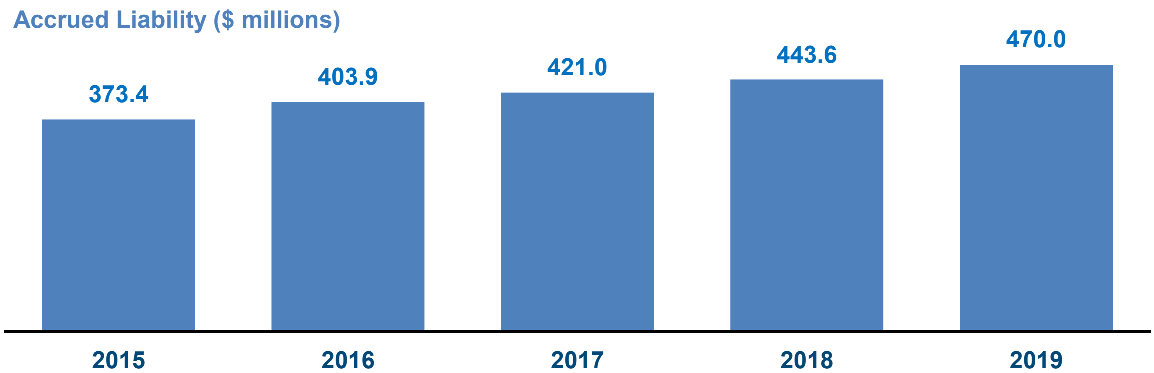


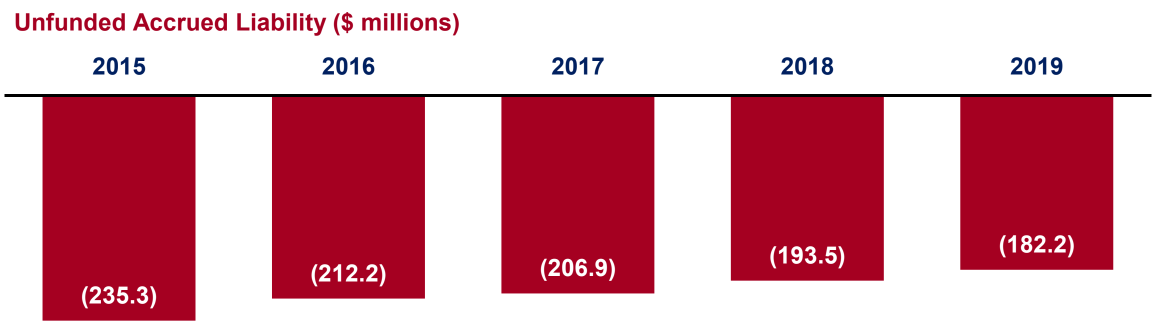
The Accrued Liability for active members can be broken down further by the different types of benefits provided by the plan:

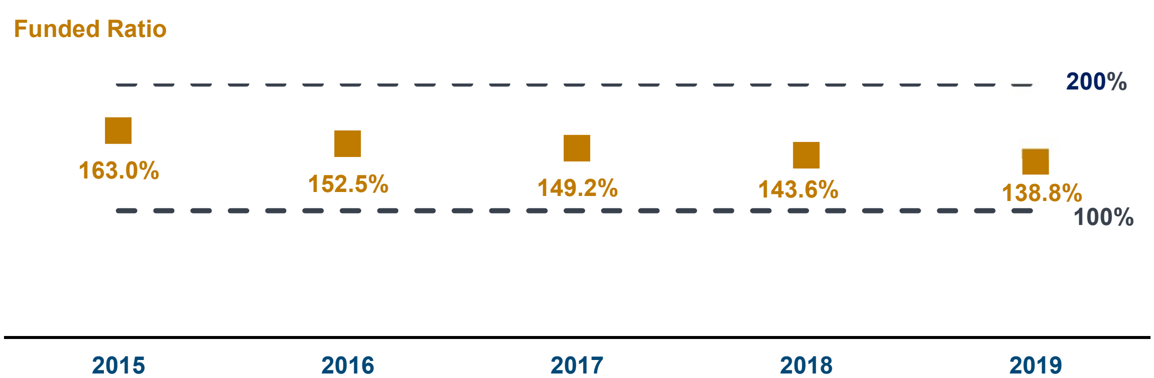


Section I - Executive Summary
Funded Status

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.



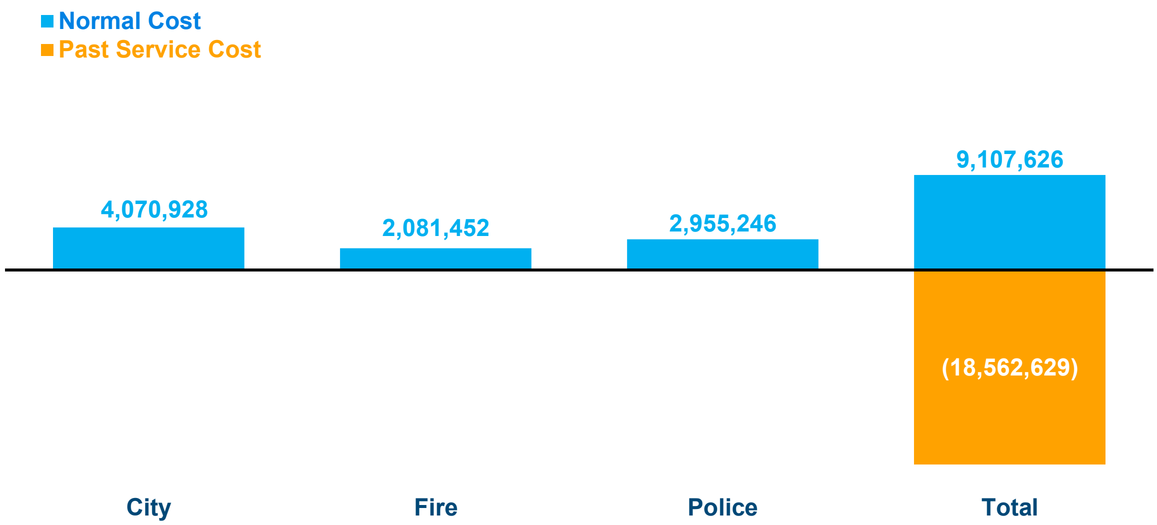




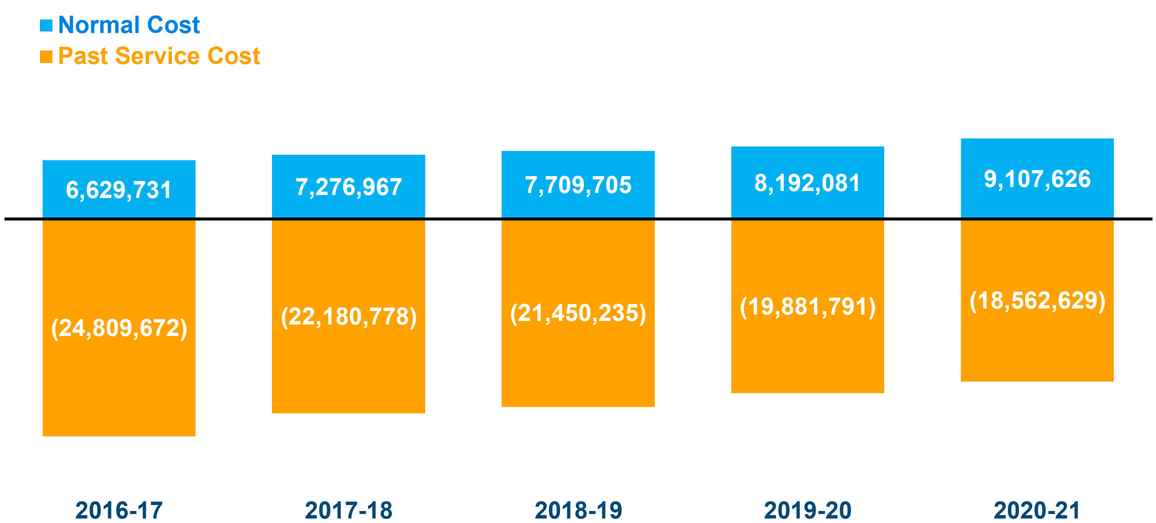
Section I - Executive Summary
Actuarially Determined Contribution

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 2020-21 is shown graphically below.

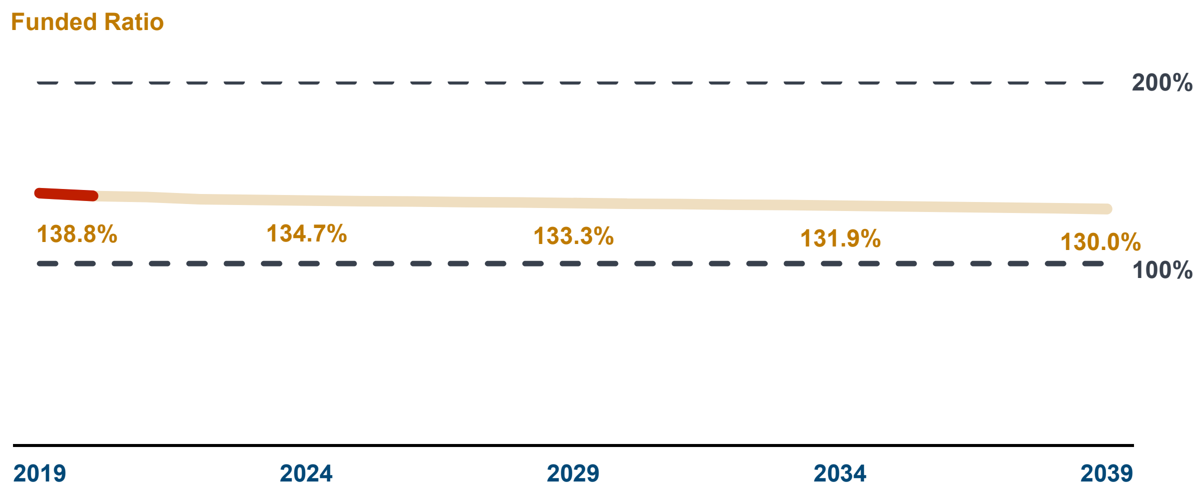


The chart below shows the Actuarially Determined Contribution for the past five fiscal years. Note that the Normal Cost is relatively consistent from year to year, whereas the Past Service Cost tends to be more volatile since it reflects the impact of asset performance.



Section I - Executive Summary
Long-Range Forecast

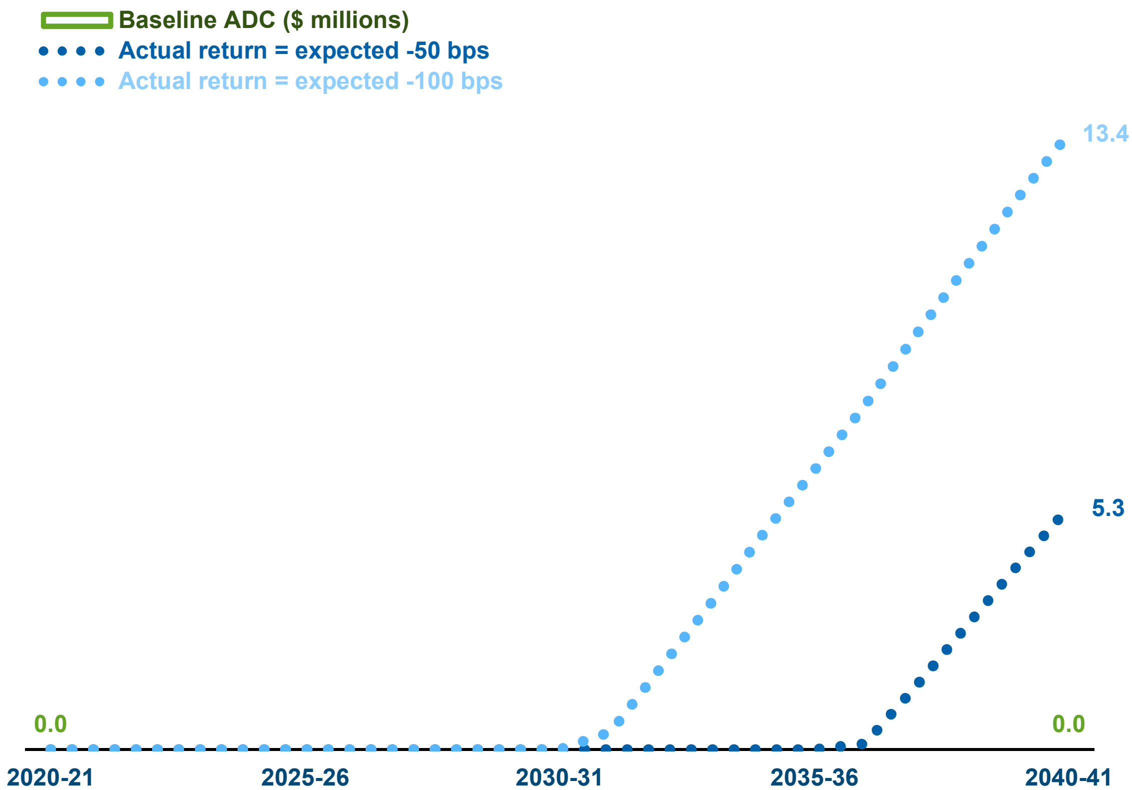
If the City pays the Actuarially Determined Contribution each year, the investments earn exactly the assumed interest rate each year, and there are no changes in the plan provisions or in the actuarial methods and assumptions, then we project the following changes in the plan's funded status:



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 underearning 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, 2018	July 1, 2019
Active Members	936	953
Terminated Members	104	126
Members in Pay Status	791	821
Total Count	1,831	1,900
Payroll	$51,163,929	$52,204,668

Assets and Liabilities as of	July 1, 2018	July 1, 2019
Market Value of Assets	$647,171,556	$653,838,154
Actuarial Value of Assets	637,056,310	652,163,189
Accrued Liability for Active Members	183,221,052	189,599,926
Accrued Liability for Terminated Members	4,532,811	4,751,911
Accrued Liability for Members in Pay Status	255,838,660	275,613,834
Total Accrued Liability	443,592,523	469,965,671
Unfunded Accrued Liability	(193,463,787)	(182,197,518)
Funded Ratio	143.6%	138.8%

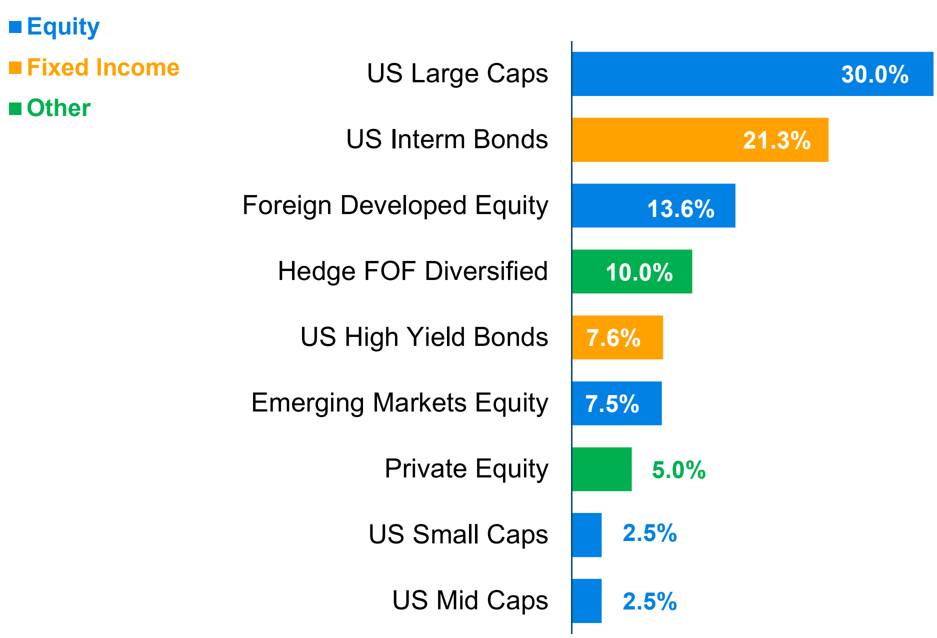
Actuarially Determined Contribution for Fiscal Year	2019-20	2020-21
Normal Cost	$8,192,081	$9,107,626
Past Service Cost	(19,881,791)	(18,562,629)
Actuarially Determined Contribution	0	0

Section II - Plan Assets
A. Summary of Fund Transactions

Market Value as of July 1, 2018	$647,171,556
City Contributions	0
Member Contributions	2,234,181
Net Investment Income	30,248,708
Benefit Payments	(25,638,387)
Administrative Expenses	(177,904)
Market Value as of June 30, 2019	653,838,154
Expected Return on Market Value of Assets	45,773,740
Market Value (Gain)/Loss	15,702,936
Approximate Rate of Return *	4.73%

* 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, 2019



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, 2019 is determined below.

1.	Expected Market Value of Assets:	
	a. Market Value of Assets as of July 1, 2018	$647,171,556
	b. City and Member Contributions	2,234,181
	c. Benefit Payments	(25,638,387)
	d. Expected Earnings Based on 7.20% Interest	45,773,740
	e. Expected Market Value of Assets as of July 1, 2019	669,541,090
2.	Actual Market Value of Assets as of July 1, 2019	653,838,154
3.	Market Value (Gain)/Loss: (2) - (1e)	15,702,936
4.	Delayed Recognition of Market (Gains)/Losses	

Plan Year End	(Gain)/Loss	Percent Not Recognized	Amount Not Recognized	
06/30/2019	$15,702,936	75%	$11,777,202	
06/30/2018	(13,949,295)	50%	(6,974,648)	
06/30/2017	(25,910,074)	25%	(6,477,519)	
				(1,674,965)

5.	Preliminary Actuarial Value of Assets as of July 1, 2019: (2) + (4)		652,163,189
6.	Corridor Limit:	80% of Market Value	523,070,523
		120% of Market Value	784,605,785
7.	Final Actuarial Value of Assets as of July 1, 2019: (5) constrained by (6)		652,163,189
8.	Approximate Rate of Return on Actuarial Value of Assets		6.16%
9.	Actuarial Value (Gain)/Loss		6,501,871

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	$101,837,730	$35,848,503	$51,913,693	$189,599,926
	Terminated Members	3,443,105	0	1,308,806	4,751,911
	Service Retirees	134,042,267	41,893,365	80,028,068	255,963,700
	Disabled Retirees	1,323,678	600,219	7,009,160	8,933,057
	Beneficiaries	2,695,181	4,377,332	3,644,564	10,717,077
	Total Accrued Liability	243,341,961	82,719,419	143,904,291	469,965,671
2.	Actuarial Value of Assets (see Section IIB)				652,163,189
3.	Unfunded Accrued Liability: (1) - (2)				(182,197,518)
4.	Funded Ratio: (2) / (1)				138.8%
5.	Amortization Period				20
6.	Amortization Growth Rate				0.00%
7.	Past Service Cost: (3) amortized over (5)				(17,332,053)
8.	Interest on (7) to Following Fiscal Year				(1,230,576)
9.	Past Service Cost for Following Fiscal Year: (7) + (8)				(18,562,629)

Section III - Development of Contribution
B. Actuarially Determined Contribution for FY 2020-21

		City	Fire	Police	Total
1.	Total Normal Cost	$5,338,602	$1,926,267	$3,075,115	$10,339,984
2.	Expected Member Contributions	1,789,533	111,640	498,707	2,399,880
3.	Net Normal Cost: (1) - (2)	3,549,069	1,814,627	2,576,408	7,940,104
4.	Interest on (3) to Following Fiscal Year	521,859	266,825	378,838	1,167,522
5.	Normal Cost for Following Fiscal Year (3) + (4)	4,070,928	2,081,452	2,955,246	9,107,626
6.	Past Service Cost (see Section IIIA)				(18,562,629)
7.	Actuarially Determined Contribution for FY 2020-21: (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, 2019 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.

	Values as of the Valuation Date					Cash Flows Projected to the Following Fiscal Year			
Valuation Date	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio	Fiscal Year	City Contributions	Member Contributions	Benefit Payments	Net Cash Flows
07/01/2019	$469,965,671	$652,163,189	($182,197,518)	138.8%	2020-21	$0	$2,438,110	($28,663,271)	($26,225,161)
07/01/2020	494,618,000	678,795,000	(184,177,000)	137.2%	2021-22	0	2,497,000	(30,251,000)	(27,754,000)
07/01/2021	511,069,000	698,244,000	(187,175,000)	136.6%	2022-23	0	2,523,000	(31,840,000)	(29,317,000)
07/01/2022	527,252,000	714,010,000	(186,758,000)	135.4%	2023-24	0	2,589,000	(33,280,000)	(30,691,000)
07/01/2023	543,107,000	733,457,000	(190,350,000)	135.0%	2024-25	0	2,634,000	(34,660,000)	(32,026,000)
07/01/2024	558,843,000	752,839,000	(193,996,000)	134.7%	2025-26	0	2,695,000	(36,005,000)	(33,310,000)
07/01/2025	574,504,000	772,189,000	(197,685,000)	134.4%	2026-27	0	2,740,000	(37,255,000)	(34,515,000)
07/01/2026	590,138,000	791,560,000	(201,422,000)	134.1%	2027-28	0	2,761,000	(38,498,000)	(35,737,000)
07/01/2027	605,889,000	811,032,000	(205,143,000)	133.9%	2028-29	0	2,818,000	(39,752,000)	(36,934,000)
07/01/2028	621,793,000	830,597,000	(208,804,000)	133.6%	2029-30	0	2,844,000	(41,016,000)	(38,172,000)
07/01/2029	637,872,000	850,287,000	(212,415,000)	133.3%	2030-31	0	2,878,000	(42,387,000)	(39,509,000)
07/01/2030	654,113,000	870,068,000	(215,955,000)	133.0%	2031-32	0	2,943,000	(43,783,000)	(40,840,000)
07/01/2031	670,418,000	889,841,000	(219,423,000)	132.7%	2032-33	0	2,995,000	(45,136,000)	(42,141,000)
07/01/2032	686,823,000	909,615,000	(222,792,000)	132.4%	2033-34	0	3,028,000	(46,383,000)	(43,355,000)
07/01/2033	703,276,000	929,419,000	(226,143,000)	132.2%	2034-35	0	3,116,000	(47,548,000)	(44,432,000)
07/01/2034	719,968,000	949,344,000	(229,376,000)	131.9%	2035-36	0	3,205,000	(48,613,000)	(45,408,000)
07/01/2035	736,949,000	969,543,000	(232,594,000)	131.6%	2036-37	0	3,223,000	(49,712,000)	(46,489,000)
07/01/2036	754,431,000	990,136,000	(235,705,000)	131.2%	2037-38	0	3,272,000	(50,914,000)	(47,642,000)
07/01/2037	772,523,000	1,011,043,000	(238,520,000)	130.9%	2038-39	0	3,297,000	(52,180,000)	(48,883,000)
07/01/2038	791,167,000	1,032,212,000	(241,045,000)	130.5%	2039-40	0	3,358,000	(53,519,000)	(50,161,000)

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, 2010	$533,071,565	$304,750,180	($228,321,385)	174.9%
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%

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
2011-12	$0	$0	$44,359,243	0.0%
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	TBD	51,163,929	TBD
2020-21	0	TBD	52,204,668	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, 2018	936	41	63	701	24	66	1,831
Terminated							
- no benefits due	-	-	-	-	-	-	0
- paid refund	(13)	-	(3)	-	-	-	(16)
- vested benefits due	(19)	-	19	-	-	-	0
Retired	(44)	(1)	-	45	-	-	0
Died							
- with beneficiary	-	-	-	(2)	-	2	0
- no beneficiary	(1)	-	-	(15)	-	-	(16)
Returned to Active	1	-	(1)	-	-	-	0
New member	93	-	8	-	-	-	101
Rehired	-	-	-	-	-	-	0
New Alternate Payee	-	-	-	-	-	-	0
Correction	-	-	-	-	-	-	0
Count July 1, 2019	953	40	86	729	24	68	1,900
Breakdown July 1, 2019							
City	745	35	86	561	14	30	1,471
Fire	87	0	0	68	2	22	179
Police	121	5	0	100	8	16	250
Total	953	40	86	729	24	68	1,900

Section IV - Membership Data
B. Statistics of Active Membership

		As of July 1, 2018	As of July 1, 2019
Number of Active Members	City	727	745
	Fire	87	87
	Police	122	121
	Total	936	953
Average Age	City	50.3	49.5
	Fire	45.4	46.1
	Police	39.5	39.9
	Total	48.4	47.9
Average Service	City	11.6	11.1
	Fire	16.7	17.5
	Police	13.6	14.0
	Total	12.4	12.0
Total Payroll	City	$34,676,915	$35,348,623
	Fire	6,316,033	6,479,480
	Police	10,170,981	10,376,565
	Total	51,163,929	52,204,668
Average Payroll	City	$47,699	$47,448
	Fire	72,598	74,477
	Police	83,369	85,757
	Total	54,662	54,779

Section IV - Membership Data
C. Distribution of Active Members as of July 1, 2019

City

Age	Years of Service 0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25	11							11
25-29	34	6						40
30-34	40	20	2					62
35-39	40	8	8	2				58
40-44	31	11	13	9	1			65
45-49	28	12	22	7	6	3		78
50-54	28	16	37	25	17	11	4	138
55-59	25	14	29	42	18	6	8	142
60-64	14	9	27	35	14	6	2	107
65+	4	4	9	12	9	2	4	44
Total	255	100	147	132	65	28	18	745

Fire

Age	Years of Service 0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25								0
25-29	3	3						6
30-34	2	4						6
35-39		6	5	2				13
40-44		2	8	3				13
45-49			8	6	3			17
50-54			3	2	3			8
55-59		1			3	2	12	18
60-64			1		1		4	6
65+								0
Total	5	16	25	13	10	2	16	87

Police

Age	Years of Service 0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25	4							4
25-29	10	4						14
30-34	6	20	3					29
35-39	1	2	12	5				20
40-44		2	3	7				12
45-49		1	1	3	10	2		17
50-54	1		1	1	2	5	2	12
55-59			1		2	2	4	9
60-64					1		2	3
65+							1	1
Total	22	29	21	16	15	9	9	121

Section IV - Membership Data
D. Statistics of Inactive Membership

	As of July 1, 2018	As of July 1, 2019
Terminated Vested Members		
Number	41	40
Total Annual Benefit	$575,931	$553,585
Average Annual Benefit	14,047	13,840
Average Age	45.7	45.8
Nonvested Members Due Refunds		
Number	63	86
Service Retirees		
Number	701	729
Total Annual Benefit	$22,427,761	$23,952,225
Average Annual Benefit	31,994	32,856
Average Age	71.6	71.7
Disabled Retirees		
Number	24	24
Total Annual Benefit	$631,352	$643,681
Average Annual Benefit	26,306	26,820
Average Age	66.3	67.3
Beneficiaries		
Number	66	68
Total Annual Benefit	$1,147,415	$1,232,911
Average Annual Benefit	17,385	18,131
Average Age	77.3	78.1

Section IV - Membership Data
E. Distribution of Inactive Members as of July 1, 2019

	Age	Number	Annual Benefits
Terminated Vested Members	< 30	9	$0
(counts include Terminated Nonvested	30 - 39	27	41,804
Members Due Refunds and	40 - 49	48	268,063
Deferred Beneficiaries)	50 - 59	25	126,897
	60 - 64	7	80,647
	65 +	10	36,174
	Total	126	553,585
Service Retirees	< 50	4	$242,348
	50 - 59	55	2,979,605
	60 - 69	277	10,161,957
	70 - 79	242	7,489,584
	80 - 89	115	2,592,590
	90 +	36	486,141
	Total	729	23,952,225
Disabled Retirees	< 50	3	$168,655
	50 - 59	3	173,616
	60 - 69	6	143,424
	70 - 79	8	99,827
	80 - 89	3	56,269
	90 +	1	1,890
	Total	24	643,681
Beneficiaries	< 50	1	$7,426
	50 - 59	0	0
	60 - 69	13	261,295
	70 - 79	23	393,081
	80 - 89	18	336,165
	90 +	13	234,944
	Total	68	1,232,911

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.

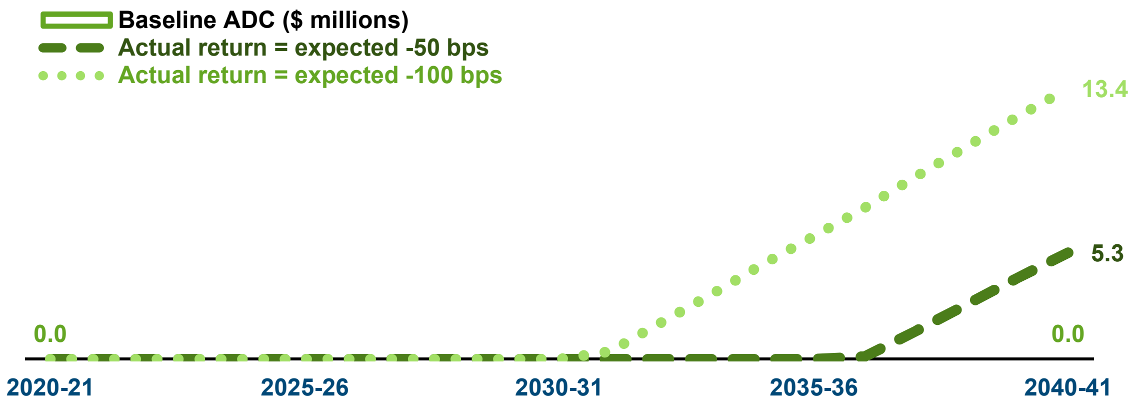
Please see Section III C for more information on the basis for the projected results shown on the following pages.

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 20 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.

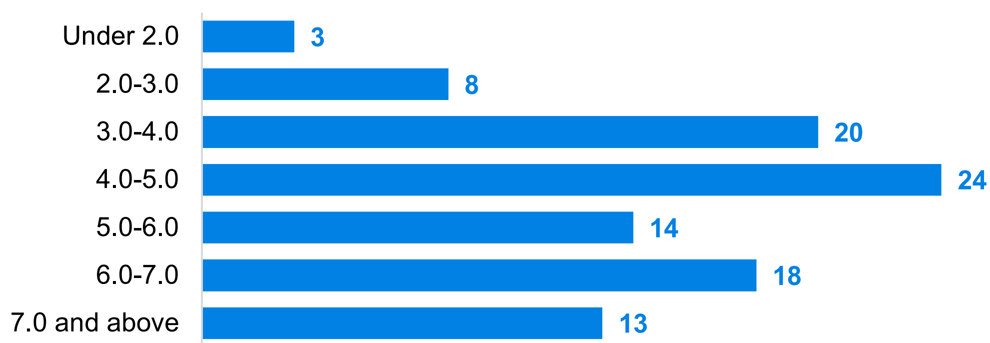
Identification: In 2018-19, the plan had negative cash flow, with city and member contributions to the plan of $2,234,181 compared to $25,816,291 of benefit payments and administrative expenses paid out of the plan. We suggest that you consult with your investment advisors with respect to the liquidity 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, 2019, the plan's Asset Volatility Ratio (the ratio of the market value of plan assets to payroll) is 12.5. According to Milliman's 2018 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

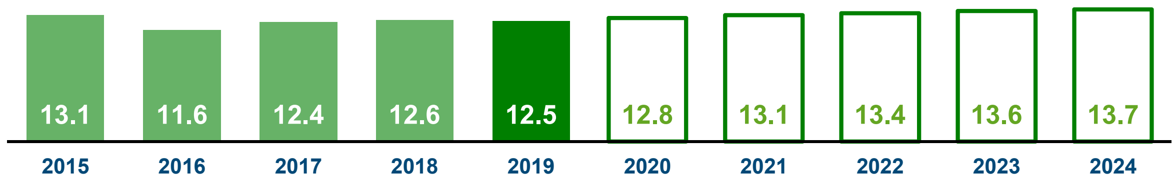
Definition: This is the potential for active members to add items to their pensionable earnings and receive pension benefits that are higher than expected.

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 9% for Police. To the extent that actual compensated absences are different from expected, this could put additional pressure on subsequent Actuarially Determined Contributions.

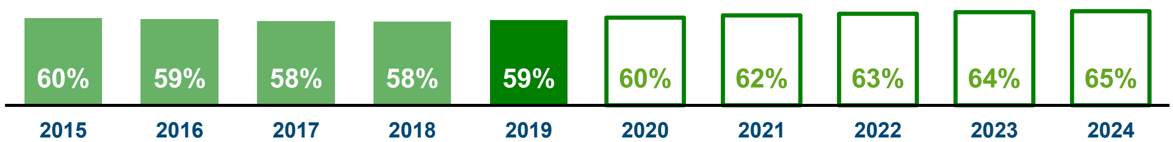
Section V - Analysis of Risk
C. Maturity Measures

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.

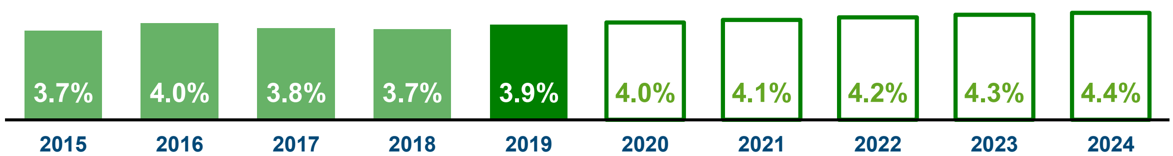
Asset Volatility Ratio: Market Value of Assets compared to Payroll



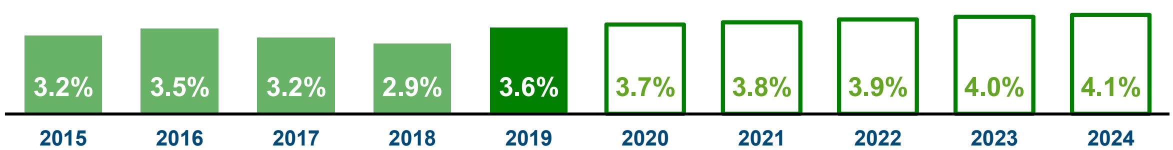
Accrued Liability for members in pay status compared to total Accrued Liability



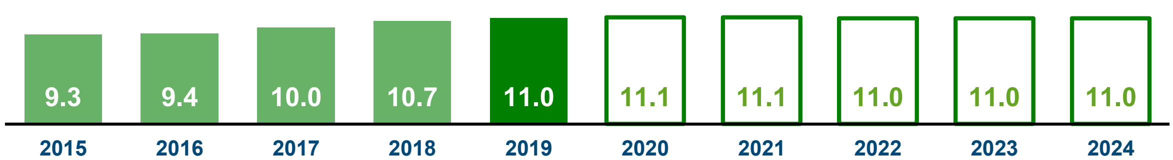
Benefit Payments compared to Market Value of Assets



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.

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

7.1% (Prior: 7.2%) This assumption will decline by 0.1% until it reaches 7.0%.

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

Current: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 80% phase-in from Scale AA to BB. The projection scale will continue to be phased in by 20% each year. This assumption includes a margin for mortality improvements beyond the valuation date.

Prior: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 60% phase-in from Scale AA to BB.

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

7.1% (Prior: 7.2%) This assumption will decline by 0.1% until it reaches 7.0%.

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

Current: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 80% phase-in from Scale AA to BB. The projection scale will continue to be phased in by 20% each year. This assumption includes a margin for mortality improvements beyond the valuation date.

Prior: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 60% phase-in from Scale AA to BB.

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

Age	Rate
20	5%
25	5%
30	2%
35 and above	0%

Retirement

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

Age	Rate
49	10%
50-54	5%
55-56	10%
57-59	15%
60	50%
61	70%
62-64	40%
65+	100%

Annuity Election

85% of active members are assumed to elect a 50% Joint & Survivor Annuity and 15% of active members are assumed to elect Life Annuity.

Pension Escalation

Pre-July 1, 1999 retirees: 3.25% per year.

Retirees between July 1, 1999 and June 30, 2003: 2.50% per year.

Post-June 30, 2003 retirees: 2.25% per year.

Compensated Absences

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.

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

7.1% (Prior: 7.2%) This assumption will decline by 0.1% until it reaches 7.0%.

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

Current: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 80% phase-in from Scale AA to BB. The projection scale will continue to be phased in by 20% each year. This assumption includes a margin for mortality improvements beyond the valuation date.

Prior: RP-2000 Mortality Table for Employees and Healthy Annuitants with generational projection 60% phase-in from Scale AA to BB.

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 50% Joint & Survivor Annuity and 15% of active members are assumed to elect Life 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 9% 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

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.

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.

Compensation

Salary for service with the City including grants and allowances for maintenance, but not including any general temporary increase or reduction thereof.

Final Average Earnings

The average of the 3 highest years out of the final 10 years.

Credited Service

Years and months of continuous service.

Normal Retirement Date

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.

Normal Retirement Benefit

2.4% of Final Average Earnings multiplied by the number of completed years of Credited Service.

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.

Appendix C - Summary of Plan Provisions - City

Pre-Retirement Spouse's Death Benefit

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.

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.

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

6.0% of pay on a pre-tax basis for Board of Education participants and 4.5% of pay on a pre-tax basis for Town participants. No interest is credited. Effective upon creation of a retiree health account, 1½% of employee contributions shall be applied to the retiree health account. In the event the City's pension actuary recommends that any General City department make contributions to the pension fund, future contributions to the retiree health account will be directed into the pension fund.

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)

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.

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.

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 ¼ 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

All members after the attainment of age 65.

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.

Any regular member after 20 years of continuous service and attainment of age 65, by the request of the member.

Note: All members of the regular Fire Department shall be retired on the day following attainment of age 65.

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

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.

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.

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 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.

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

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.

Any member after 30 years of continuous service as a regular police officer, by the request of the member.

Any regular member after 25 years of continuous service and attainment of age 60, by the request of the member.

Any regular member after 20 years of continuous service and attainment of age 65, by the request of the member.

Note: All members of the regular Police Department shall be retired on the day following attainment of age 65.

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

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.

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.

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.

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.

Member Contributions

All members contribute 6% of Compensation on a pre-tax (Section 414(h)(2)) basis. Contributions shall 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.

Normal Form of Annuity

Life Annuity.

Prior Service Purchase

Members' dates of participation are adjusted to reflect periods purchased.

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 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.