

City of Birmingham Retirement and Relief System

Actuarial Valuation and Review as of July 1, 2020



This report has been prepared at the request of the Board to assist in administering the Retirement and Relief System. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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Segal



2727 Paces Ferry Road SE, Building One, Suite 1400
Atlanta, GA 30339-4053
segalco.com
T 678.306.3100

April 14, 2021

Board of Managers
City of Birmingham Retirement and Relief System
710 North 20th Street, GA 100 City Hall
Birmingham, Alabama 35203-2216

Dear Board Members:

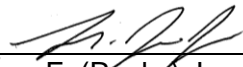
We are pleased to submit this Actuarial Valuation and Review as of July 1, 2020. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for the 2020-2021 fiscal year.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement and Relief System. The census information on which our calculations were based was prepared by the City and financial information was provided by the City's Finance Department. That assistance is gratefully acknowledged.

The actuarial calculations were directed under the supervision of Deborah K. Brigham, FCA, ASA, MAAA, Enrolled Actuary. Ms. Brigham is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board of Managers are reasonably related to the experience of and the expectations for the System.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,
Segal



Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA, EA
Senior Vice President and National Public Sector
Retirement Practice Leader



Jeffrey S. Williams, FCA, ASA, MAAA, EA
Vice President and Consulting Actuary

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Section 1: Actuarial Valuation Summary

Purpose and basis

This report was prepared by Segal to present a valuation of the City of Birmingham Retirement and Relief System as of July 1, 2020. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of System assets to cover the estimated cost of settling the System's benefit obligations. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board of Managers;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of June 30, 2020, provided by the City;
- The assets of the Plan as of June 30, 2020, provided by the City's Finance Department;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.

The assumptions and methods used to value the Plan were approved by the Board of Managers based on a five-year experience study for the period ended June 30, 2015. The City is due for another experience study prior to the completion of the next valuation.

Disclosure information required by Governmental Accounting Standards Board (GASB) Statements No 67 and 68 as of June 30, 2020 for the Retirement and Relief System was provided in a separate report.

Section 1: Actuarial Valuation Summary

Valuation highlights

1. The actuarially determined employer contribution (ADC) for the upcoming year is \$33.3 million, an increase of \$1.1 million from last year. The contribution as a percentage of payroll increased from 16.06% of pay to 16.49% of pay, based on a rolling 30-year level percent-of-pay amortization of the unfunded actuarial accrued liability.
2. Actual contributions made during the fiscal year ending June 30, 2020 were \$24.2 million, 75.3% of the actuarially determined contribution (ADC). In the prior fiscal year, actual contributions were \$16.9 million, 54.4% of the prior year ADC.
3. Segal strongly recommends an actuarial funding method that targets 100% funding of the actuarial accrued liability. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability and the principal balance. Effective July 1, 2020, the City's contribution rate is 14.50% of pay and the contribution rate for outside agencies is 9.00% of pay. All employees contribute 7.00% of pay. These contributions are projected to enable the System to reach 100% funding in approximately 46 years. This is a significant improvement over last year, when the contribution levels were insufficient to amortize the unfunded liability. The 46-year period is still longer than is considered reasonable.
4. The weighted average employer contribution rate is 14.29% for this valuation. **There is a deficit of 2.20% of pay between this contribution rate and the ADC.** Each year that contributions fall short of the required amount, the System experiences a loss. This year that loss was \$4.3 million. We are aware that there is legislation pending that would implement benefit modifications and would require funding of the ADC. If it passes, the resulting changes should shorten the amortization of the unfunded liability and improve the projected funding status of the System. If it does not pass, the City should continue to seek ways to restore balance between the System's benefits and the resources available to pay for them. It is our understanding that the City has budgeted 18.00% of pay effective July 1, 2021, which will improve funding progress.
5. The funded ratio (the ratio of the actuarial value of assets to actuarial accrued liability) is 68.70%, compared to the prior year funded ratio of 70.86%. This ratio is one measure of funding status, and its history is a measure of funding progress. Using the market value of assets, the funded ratio is 64.57%, compared to 69.46% as of the prior valuation date.
6. The unfunded liability increased from \$437.5 million to \$481.8 million on an actuarial basis over the past year.
7. The rate of return on the market value of assets was 0.77% for the plan year ended June 30, 2020. The return on the actuarial value of assets was 4.86% for the same period due to the recognition of prior years' investment gains and losses. This resulted in an actuarial loss of \$27.3 million when measured against the assumed rate of return of 7.50%. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various classes, we advise the Board to continue to monitor actual and anticipated investment returns relative to the assumed long-term rate of return on investments of 7.50%. If the assumption were 7.00% in this valuation, the City's actuarially determined employer contribution would be 19.49% of payroll, and the contribution shortfall would be 5.20% of payroll.

Section 1: Actuarial Valuation Summary

8. The actuarial value of assets is 106.4% of the market value of assets. The investment experience in the past years has only been partially recognized in the actuarial value of assets. As the deferred net loss is recognized in future years, the cost of the Plan is likely to increase unless the net loss is offset by future experience. If the net deferred losses were recognized immediately in the actuarial value of assets, the ADC would increase from 16.49% to about 18.49% of payroll.
9. The net actuarial loss from sources other than investments or contributions was \$8.7 million, or 0.6% of actuarial accrued liability.
10. The assumption for administrative expenses increased from \$275,000 to \$300,000 for the year beginning July 1, 2020.
11. The enactment of House Bill 397 (H.B.397), permits the City to rehire retired public safety retirees in periods of critical personnel shortages. Under this Bill, rehired retirees continue to receive their pension benefits, but do not accrue additional service credit. Contributions are made by the City and by the rehired retirees.

As of the valuation date, 68 Fire and Police retirees had been reemployed by the City under the provisions of H.B.397. For determination of liability and in headcounts in this valuation, the 68 individuals are included as retirees of either the Supplemental System or the Retirement and Relief System, as appropriate. However, their salaries are included in total payroll in the calculation of expected employee contributions and the City's actuarially determined contribution as a percentage of pay.

12. The System uses the Entry Age Cost Method with the normal cost determined on an "ultimate life" basis. This methodology allows changes in the plan of benefits for new hires to be reflected in the normal cost for current employees even though the plan of benefits for current employees is unchanged. As a result, the actuarial accrued liability increases to offset the decrease in normal cost, and the actuarially determined contribution is less than it would be if the "ultimate life" approach was not used. A proposed new Actuarial Standard of Practice (ASOP) excludes this actuarial cost method as an option for actuaries to use in plan funding. If the cost method is changed to "traditional" Entry Age, the ADC will increase.
13. This report constitutes an actuarial valuation for the purpose of determining the ADC under the City's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and Pension Expense under GASB Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of June 30, 2021, will be provided separately. The accounting disclosures will be based on the data, assumptions and provisions utilized in this report, but will reflect different methodologies from those employed in the funding valuation, as required by the GASB. However, the actuarially determined contribution in this valuation is expected to be used as the ADC for GASB financial reporting.
14. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the public health emergency. The Plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the Plan Year. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2020. While it is impossible to determine how the pandemic will affect market conditions and other

Section 1: Actuarial Valuation Summary

demographic experience of the System in future valuations, Segal is available to prepare projections of potential outcomes upon request.

15. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions. We have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the System's future financial condition, but have included a brief discussion of some risks that may affect the System in Section 2, and deterministic projections of assets, contributions, and funding levels have been provided to the Board separately. A more detailed assessment would provide the Board with a better understanding of the inherent risks. As noted above, this could be important because actual contributions have been less than the ADC for many years, which has led to funding challenges. As changes are under consideration, detailed modelling would provide the Board and the City with information related to the probabilities of long-term success in balancing the assets and the liabilities.

Section 1: Actuarial Valuation Summary

Summary of key valuation results

		2020	2019
Contributions for plan year beginning July 1:	• Actuarially determined employer contributions	\$33,322,262	\$32,166,230
	• Actuarially determined employer contributions as a percent of payroll	16.49%	16.06%
	• Actual employer contributions	--	\$24,216,649
Actuarial accrued liability for plan year beginning July 1:	• Retired participants and beneficiaries	\$881,117,898	\$852,396,077
	• Inactive vested participants	142,810,808	123,605,148
	• Active participants	510,882,495	521,622,402
	• Inactive participants due a refund of employee contributions	4,490,829	3,757,869
	• Total actuarial accrued liability	1,539,302,030	1,501,381,496
	• Normal cost including administrative expenses	16,722,941	18,193,198
Assets for plan year beginning July 1:	• Market value of assets (MVA)	\$993,999,847	\$1,042,877,491
	• Actuarial value of assets (AVA)	1,057,532,966	1,063,878,399
	• Actuarial value of assets as a percentage of market value of assets	106.39%	102.01%
Funded status for plan year beginning July 1:	• Unfunded actuarial accrued liability on market value of assets	\$545,302,183	\$458,504,005
	• Funded percentage on MVA basis	64.57%	69.46%
	• Unfunded actuarial accrued liability on actuarial value of assets	\$481,769,064	\$437,503,097
	• Funded percentage on AVA basis	68.70%	70.86%
	• Effective amortization period on an AVA basis	46 years	Infinite
Key assumptions	• Net investment return	7.50%	7.50%
	• Inflation rate	2.50%	2.50%
	• Payroll increase	2.50%	2.50%
Demographic data for plan year beginning July 1:	• Number of retired participants and beneficiaries	3,426	3,355
	• Number of inactive vested participants ¹	413	378
	• Number of active participants	3,624	3,659
	• Number of inactive participants due a refund of employee contributions	299	246
	• Total payroll ²	\$202,026,478	\$200,234,161
	• Average payroll ²	54,720	54,059

¹Includes future pensioners currently receiving benefits from the Supplemental System and excludes terminated participants due a refund of contributions.

²The total and average payroll includes \$4,282,943 in salaries as of June 30, 2020 for 68 Police and Fire retirees and \$2,847,692 in salaries as of June 30, 2019 for 45 Police and Fire retirees who have returned to work with the City under the provisions of H.B.397. However, for purposes of headcounts and liabilities, these individuals are counted as retired participants of the Supplemental System or the Retirement and Relief System, as appropriate.

Section 1: Actuarial Valuation Summary

Important information about actuarial valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal relies on a number of input items. These include:

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the City. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the market value of assets as of the valuation date, as provided by the City's Finance Department. The System uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results that does not mean that the previous assumptions were unreasonable.

Section 1: Actuarial Valuation Summary

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

The actuarial valuation is prepared at the request of the Board. Segal is not responsible for the use or misuse of its report, particularly by any other party.

An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

Actuarial results in this report are not rounded, but that does not imply precision.

If the City or Board is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

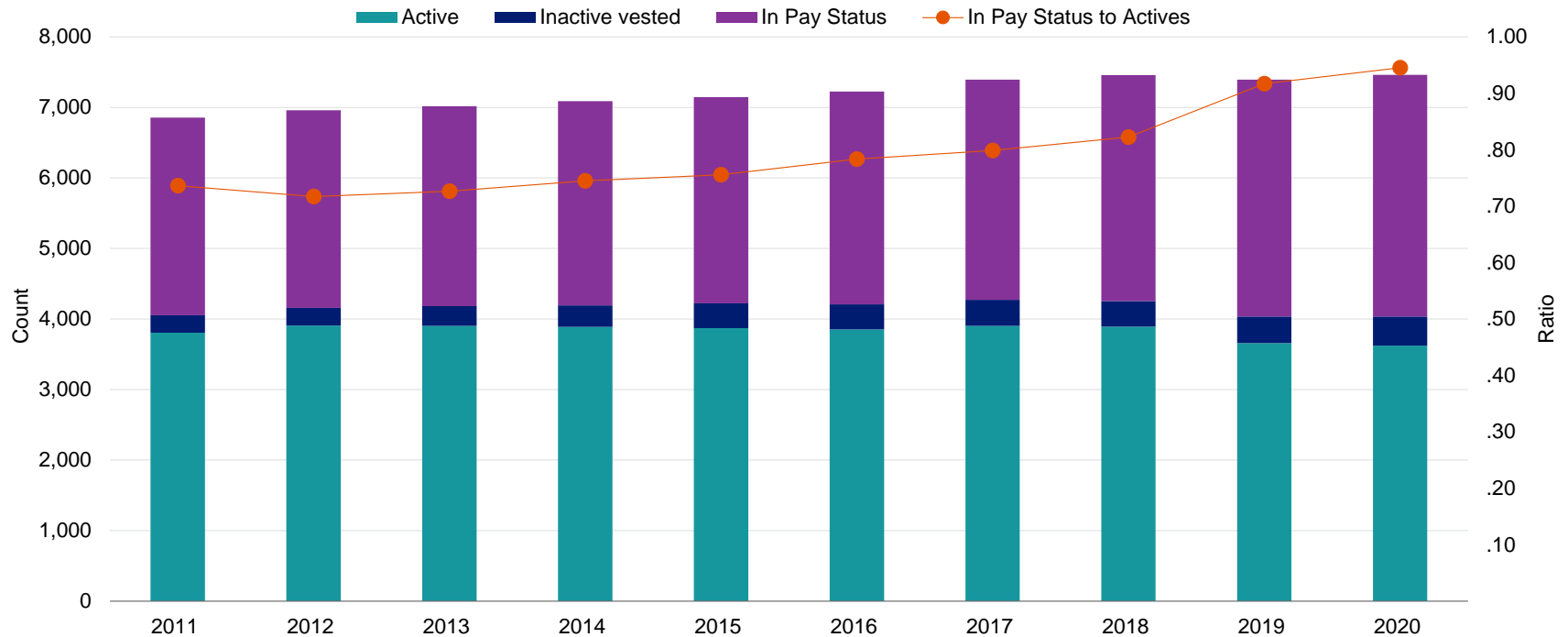
As Segal has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

Section 2: Actuarial Valuation Results

Participant data

This section presents a summary of significant statistical data on the covered participants. More detailed information for this valuation year and the preceding valuation can be found in *Section 3, Exhibits A, B, and C.*

Participant Population: 2011 – 2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
In Pay Status	2,803	2,802	2,834	2,897	2,924	3,017	3,118	3,202	3,355	3,426
Inactive Vested ¹	246	250	283	303	351	358	370	362	378	413
Active ²	3,807	3,907	3,901	3,889	3,871	3,851	3,904	3,893	3,659	3,624
Ratio	0.74	0.72	0.73	0.74	0.76	0.78	0.80	0.82	0.92	0.95

¹Includes future pensioners receiving benefits (including one suspended annuitant) from the Supplemental System, and excludes terminated participants due a refund of employee contributions.

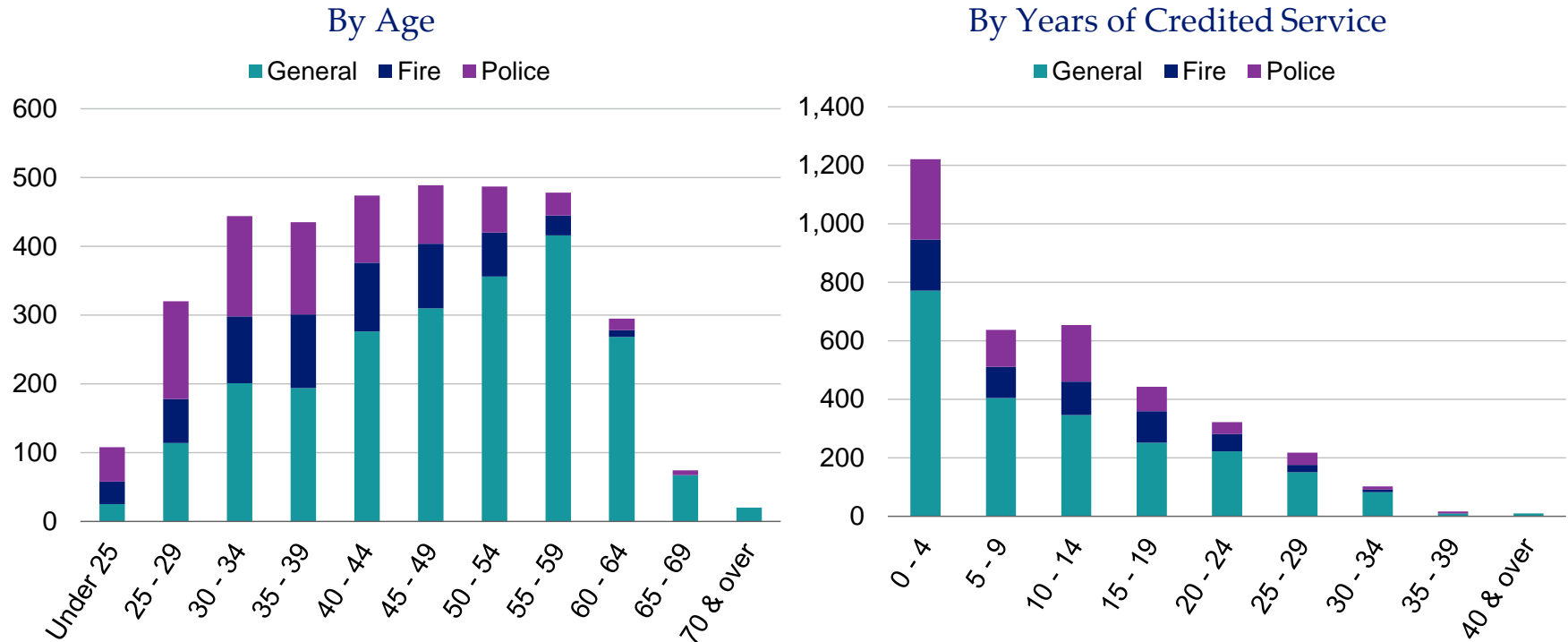
²Public safety retirees who were rehired under H.B.397 are not included in the active participant count, but are counted as inactive vested or retired instead.

Section 2: Actuarial Valuation Results

Active participants

As of June 30,	2020	2019	Change
Active participants	3,624	3,659	-1.0%
Average age	45.0	45.4	-0.4 years
Average years of credited service	11.2	11.5	-0.3 years
Average compensation	\$54,565	\$53,945	1.1%

Distribution of Active Participants as of June 30, 2020



Section 2: Actuarial Valuation Results

Inactive participants

In this year's valuation, there were 413 participants with a vested right to a deferred or immediate vested benefit. This includes 357 individuals currently receiving benefits from the Firemen's and Policemen's Supplemental Pension System.

In addition, there were 299 participants entitled to a return of their employee contributions.

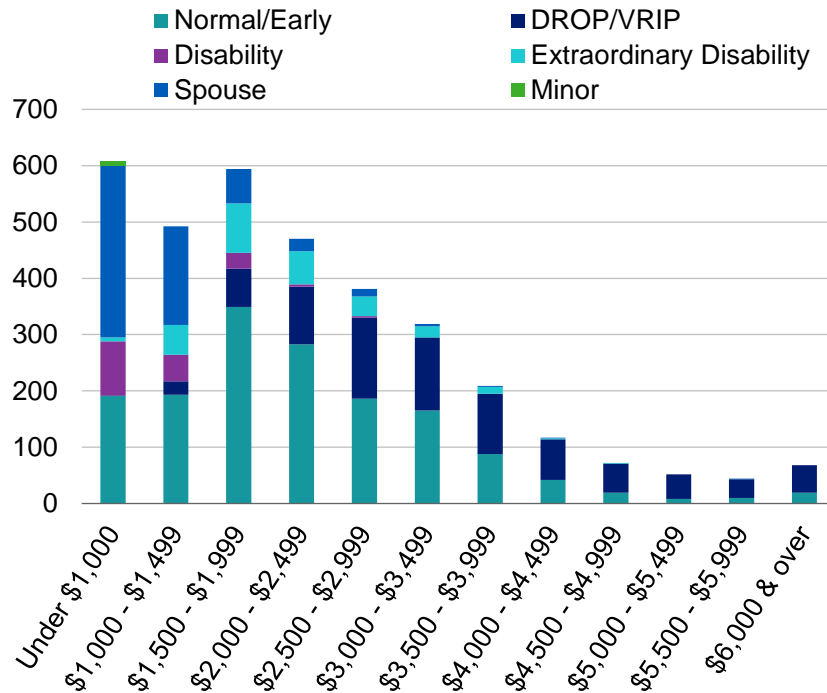
Section 2: Actuarial Valuation Results

Retired participants and beneficiaries

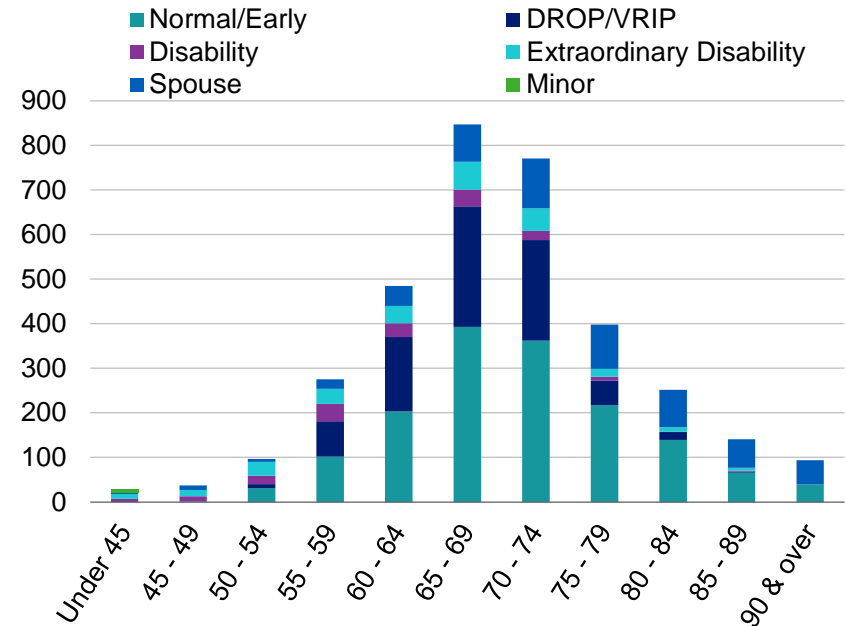
As of June 30,	2020	2019	Change
Retirees	2,834	2,770	2.3%
Beneficiaries	592	585	1.2%
Average age	70.0	69.9	0.1 years
Average amount	\$2,294	\$2,254	1.8%
Total monthly amount	\$7,858,114	\$7,562,203	3.9%

Distribution of Retired Participants and Beneficiaries as of June 30, 2020

By Type and Monthly Amount



By Type and Age



Section 2: Actuarial Valuation Results

Historical plan population

Participant Data Statistics: 2011 – 2020

Year Ended June 30	Active Participants			Retired Participants and Beneficiaries		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2011	3,807	44.2	11.6	2,803	67.7	\$1,921
2012	3,907	44.5	11.7	2,802	68.1	1,953
2013	3,901	45.0	12.0	2,834	68.4	1,976
2014	3,889	45.0	11.9	2,897	68.7	2,024
2015	3,871	45.3	12.1	2,924	69.1	2,048
2016	3,851	45.3	11.9	3,017	69.3	2,085
2017	3,904	45.3	11.8	3,118	69.5	2,119
2018	3,893	45.4	11.7	3,202	69.7	2,194
2019	3,659	45.4	11.5	3,355	69.9	2,254
2020	3,624	45.0	11.2	3,426	70.0	2,294

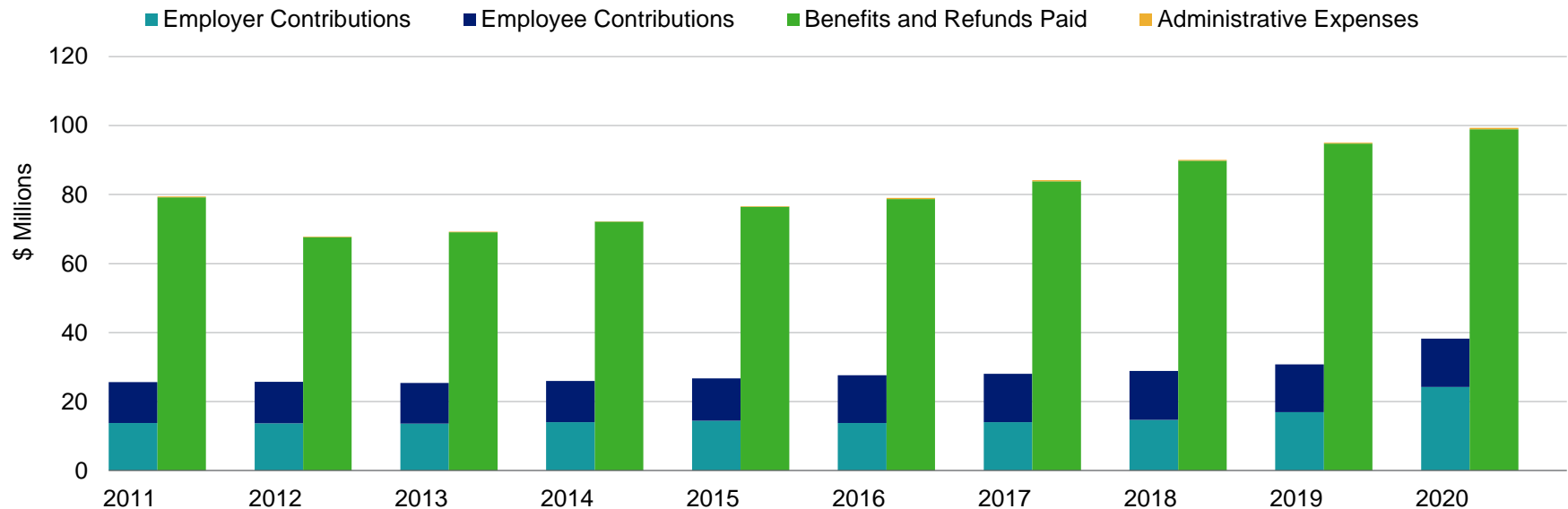
Section 2: Actuarial Valuation Results

Financial information

Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of transactions for the valuation year, is presented in *Section 3, Exhibits D, E and F*.

Comparison of Contributions with Benefits and Expenses
for Years Ended June 30, 2011 – 2020



Note: The Plan experienced a spike in benefit payments in the 2010-2011 plan year due to a voluntary retirement incentive program.

Section 2: Actuarial Valuation Results

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Managers has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Determination of Actuarial Value of Assets for Year Ended June 30, 2020

1	Market value of assets, June 30, 2020			\$993,999,847
2	Calculation of unrecognized return	Original Amount¹	Percent Deferred	Unrecognized Amount²
(a)	Year ended June 30, 2020	-\$68,254,708	80%	-\$54,603,766
(b)	Year ended June 30, 2019	-27,859,475	60%	-16,715,685
(c)	Year ended June 30, 2018	352,647	40%	141,058
(d)	Year ended June 30, 2017	38,226,369	20%	7,645,274
(e)	Year ended June 30, 2016	-71,077,315	0%	<u>0</u>
(f)	Total unrecognized return			-\$63,533,119
3	Preliminary actuarial value: (1) - (2f)			1,057,532,966
4	Adjustment to be within 20% corridor			0
5	Final actuarial value of assets as of June 30, 2020: (3) + (4)			<u>1,057,532,966</u>
6	Actuarial value as a percentage of market value: (5) ÷ (1)			106.4%
7	Amount deferred for future recognition ³ : (1) - (5)			-\$63,533,119

¹Total return minus expected return on a market value basis

²Recognition at 20% per year over five years

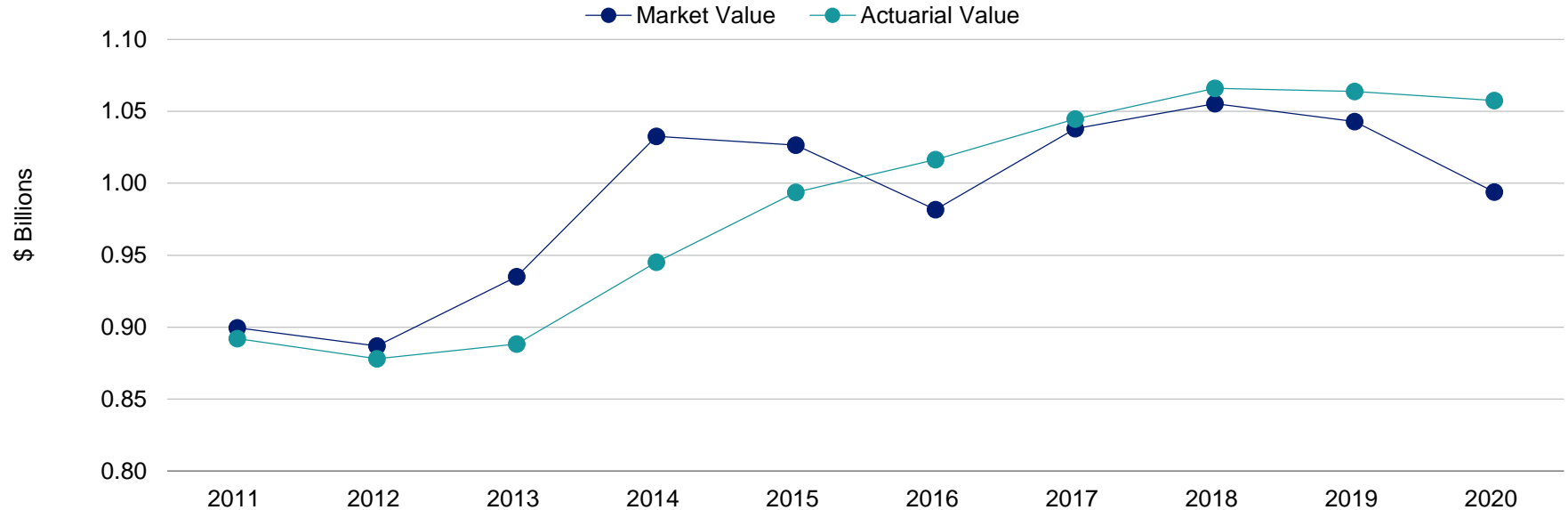
³ Deferred return as of June 30, 2020 recognized in each of the next four years:

(a) Amount recognized on June 30, 2021	-\$11,507,032
(b) Amount recognized on June 30, 2022	-19,152,308
(c) Amount recognized on June 30, 2023	-19,222,837
(d) Amount recognized on June 30, 2024	-13,650,942

Section 2: Actuarial Valuation Results

Both the actuarial value and market value of assets are representations of the System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Market Value of Assets vs. Actuarial Value of Assets



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Value ¹	\$0.90	\$0.89	\$0.94	\$1.03	\$1.03	\$0.98	\$1.04	\$1.06	\$1.04	\$0.99
Actuarial Value ¹	0.89	0.88	0.89	0.95	0.99	1.02	1.04	1.07	1.06	1.06

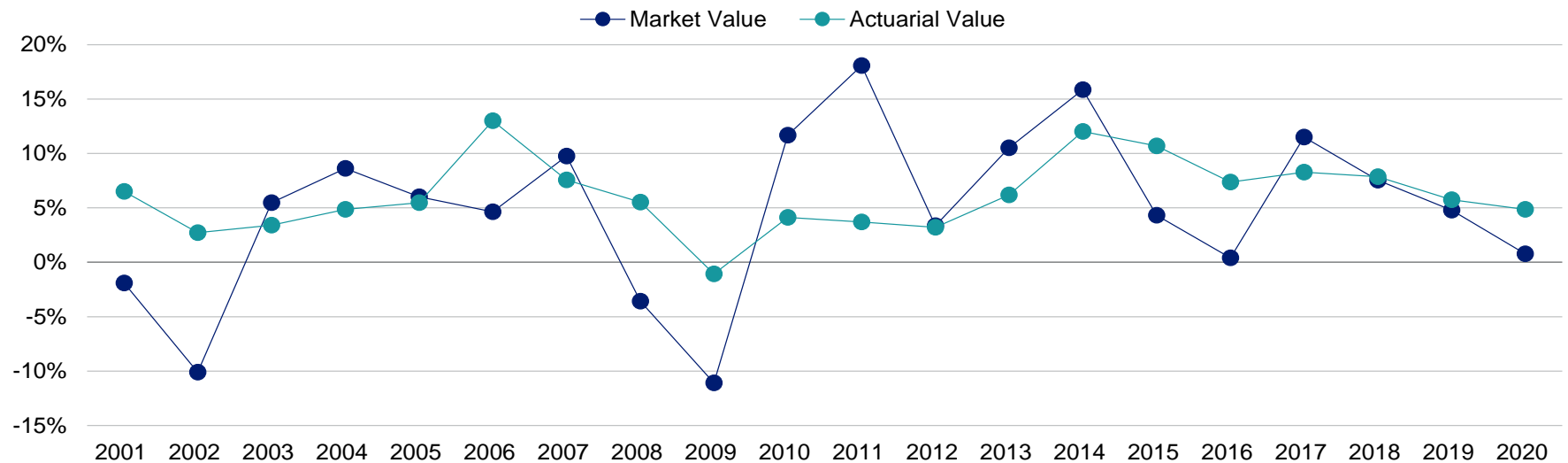
Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the actual market value investment return for the last 20 years, including averages over select time periods.

¹ In \$ billions

Section 2: Actuarial Valuation Results

As described earlier in this section, the actuarial asset valuation method gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

Market and Actuarial Rates of Return for Years Ended June 30, 2001 - 2020



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market	-1.9%	-10.1%	5.5%	8.6%	6.0%	4.6%	9.8%	-3.6%	-11.1%	11.7%	18.1%	3.4%	10.5%	15.8%	4.3%	0.4%	11.5%	7.5%	4.8%	0.8%
Actuarial	6.5%	2.7%	3.4%	4.9%	5.5%	13.0%	7.6%	5.5%	-1.1%	4.1%	3.7%	3.2%	6.2%	12.0%	10.7%	7.4%	8.3%	7.9%	5.7%	4.9%
Assumed rate	7.5%	7.5%	7.5%	7.5%	7.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.5%	7.5%	7.5%	7.5%	7.5%

Average Rates of Return	Market Value	Actuarial Value
Most recent five-year average return:	4.93%	6.80%
Most recent ten-year average return:	7.38%	6.98%
Most recent fifteen-year average return:	5.67%	6.54%
20-year average return:	4.65%	6.12%

Section 2: Actuarial Valuation Results

Actuarial experience

To calculate any actuarially determined contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), any contribution requirement will decrease from the previous year. On the other hand, any contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience. If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

Actuarial Experience for Year Ended June 30, 2020

1	Net loss from investments ¹	-\$27,297,565
2	Net loss from administrative expenses	-84,319
3	Net loss from contributions	-4,252,914
4	Net loss from other experience	-8,585,877
5	Net experience loss: 1 + 2 + 3 + 4	-\$40,220,675

¹ Details on next page

Section 2: Actuarial Valuation Results

Investment experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the System's investment policy. The rate of return on the market value of assets was 0.77% for the year ended June 30, 2020.

For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.50%. The actual rate of return on an actuarial basis for the 2019-2020 plan year was 4.86%. Since the actual return for the year was less than the assumed return, the System experienced an actuarial loss during the year ended June 30, 2020 with regard to its investments.

Investment Experience

		Year Ended June 30, 2020	
		Market Value	Actuarial Value
1	Net investment income	\$7,834,402	\$50,366,613
2	Average value of assets	1,014,521,468	1,035,522,376
3	Rate of return: 1 ÷ 2	0.77%	4.86%
4	Assumed rate of return	7.50%	7.50%
5	Expected investment income: 2 x 4	76,089,110	77,664,178
6	Actuarial gain/(loss): 1 - 5	<u>-\$68,254,708</u>	<u>-\$27,297,565</u>

Section 2: Actuarial Valuation Results

Contributions

City and employee contributions for the year ended June 30, 2020 totaled \$42,607,579, compared to the projected amount of \$44,953,607. This resulted in a loss of \$4,252,914 for the year, when adjusted for timing.

Non-investment experience

Administrative expenses

- Administrative expenses for the year ended June 30, 2020 totaled \$356,552, as compared to the assumption of \$275,000. This resulted in a loss of \$84,319 for the year, when adjusted for timing. Based on an average of the most recent three years, the assumption has been increased from \$275,000 to \$300,000 for the year beginning July 1, 2020.

Mortality experience

- Mortality experience (more or fewer than expected deaths) yields actuarial gains or losses.
- The average number of deaths for nondisabled retirees over the past five years was 59.40 per year compared to 68.08 projected deaths per year. However, the average number of deaths for retirees is too small to be statistically credible.

Other experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among participants,
- retirement experience (earlier or later than projected),
- the number of disability retirements (more or fewer than projected), and
- salary increases (greater or smaller than projected).

The net loss from this other experience for the year ended June 30, 2020 amounted to \$8,585,877, which is 0.6% of the actuarial accrued liability.

Section 2: Actuarial Valuation Results

Actuarial assumptions

Assumed administrative expenses increased from \$275,000 to \$300,000 for the year beginning July 1, 2020. This is the only assumption change reflected this year. Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

The System undergoes an in-depth study every five years to compare the actuarial assumptions to actual experience, and the assumptions are updated as appropriate. The last experience review was completed for the five-year period ended June 30, 2015. The City is due for another experience study for the five-year period ended June 30, 2020.

Plan provisions

There were no changes in plan provisions since the prior valuation. A summary of plan provisions is in Section 4, Exhibit II.

Contribution rates

Effective July 1, 2020, the City's contribution rate is 14.50% of payroll and the contribution rate for outside participating agencies is 9.00% of payroll. The weighted average employer contribution rate is 14.29% for this valuation. The employee rate remains at 7.00% of pay for all participants.

Effective July 1, 2021, the City's rate is budgeted to increase to 18.00% of pay. This change will be reflected in the 2021 actuarial valuation.

Section 2: Actuarial Valuation Results

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2020

1	Unfunded actuarial accrued liability at beginning of year	\$437,503,097
2	Normal cost at beginning of year	18,193,198
3	Total contributions	-42,607,579
4	Interest on 1, 2 & 3	<u>32,712,587</u>
5	Expected unfunded actuarial accrued liability	\$445,801,303
6	Changes due to experience gains and losses	<u>35,967,761</u>
7	Unfunded actuarial accrued liability at end of year	<u>\$481,769,064</u>

Section 2: Actuarial Valuation Results

Actuarially determined contribution

The actuarially determined contribution shown in this section reflects the City's contribution, net of expected 7.00% of payroll contributions from employees. This contribution is equal to the employer normal cost payment and a payment on the unfunded actuarial accrued liability. As of July 1, 2020, the actuarially determined contribution is \$33,322,262, or 16.49% of payroll.

The weighted average employer contribution rate for the City and outside participating agencies is 14.29% in this valuation. The net employer normal cost rate for the System, including administrative expenses, is 1.28% of pay before adjustment for timing. After paying the normal cost, the remaining City contributions effectively amortize the unfunded actuarial accrued liability over 46 years. The City should continue to seek ways to restore balance between the System's benefits and the resources available to pay for them.

The contribution requirement as of July 1, 2020 are based on the data previously described, the actuarial assumptions and Plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

Actuarially Determined Contribution for Year Beginning July 1

	2020		2019	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost ¹	\$16,434,403	8.14%	\$17,928,705	8.96%
2. Administrative expenses	288,538	0.14%	264,493	0.13%
3. Expected employee contributions	<u>-14,141,853</u>	<u>-7.00%</u>	<u>-14,016,391</u>	<u>-7.00%</u>
4. Employer normal cost: (1) + (2) + (3)	\$2,581,087	1.28%	\$4,176,806	2.09%
5. Actuarial accrued liability	\$1,539,302,030		\$1,501,381,496	
6. Actuarial value of assets	<u>1,057,532,966</u>		<u>1,063,878,399</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$481,769,064		\$437,503,097	
8. Payment on unfunded actuarial accrued liability	29,467,991	14.58%	26,760,410	13.36%
9. Adjustment for timing ²	1,273,184	0.63%	1,229,014	0.61%
10. Total actuarially determined contribution: (4) + (8) + (10)	<u>\$33,322,262</u>	<u>16.49%</u>	<u>\$32,166,230</u>	<u>16.06%</u>
11. Total payroll ³	\$202,026,478		\$200,234,161	

¹Reflects offset for expected contributions on behalf of Supplemental System retirees, amounting to \$4,869,081 as of July 1, 2020 and \$3,174,558 as of July 1, 2019 (\$5,062,510 and \$3,300,671 when adjusted for timing).

²Recommended contributions are assumed to be paid at the beginning of every month.

³Includes \$4,282,943 in salary as of June 30, 2020 for the 68 public safety retirees and \$2,847,692 in salary as of June 30, 2019 for the 45 public safety retirees who were rehired under the provisions of H.B.397.

Section 2: Actuarial Valuation Results

Reconciliation of actuarially determined contribution

The chart below details the changes in the actuarially determined contribution from the prior valuation to the current year's valuation.

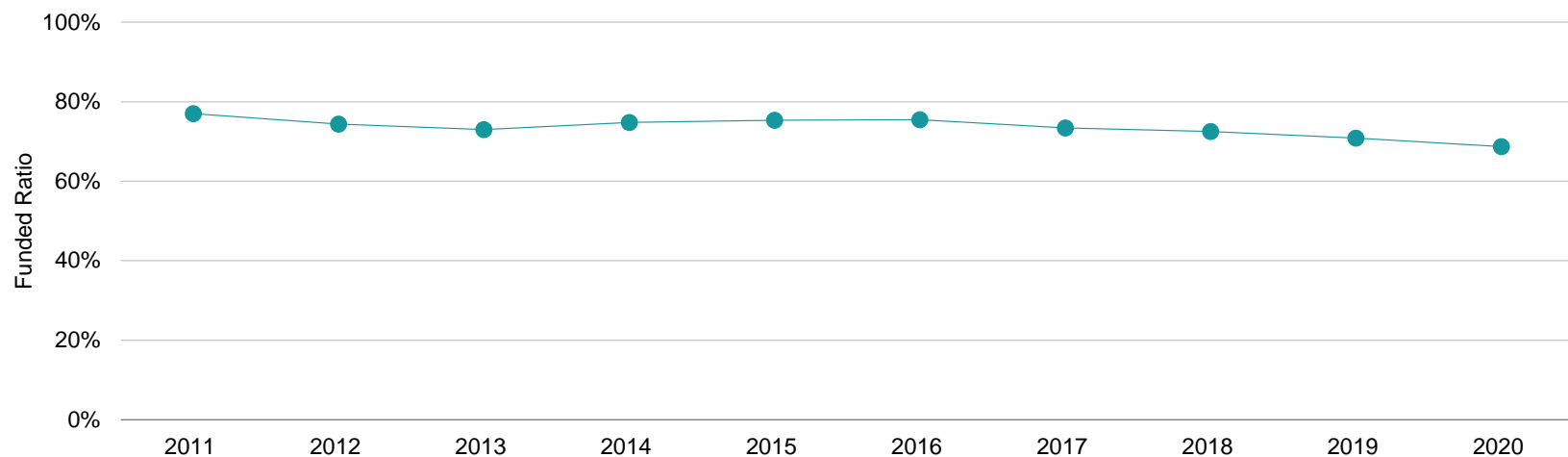
Reconciliation of Actuarially Determined Contribution from July 1, 2019 to July 1, 2020

	Amount	% of Payroll
Actuarially Determined Contribution as of July 1, 2019	\$32,166,230	16.06%
• Effect of expected change in amortization payment due to payroll growth	695,587	0.35%
• Effect of employee contributions from retirees who returned to work	-311,716	-0.16%
• Effect of change in administrative expense assumption	25,000	0.01%
• Effect of maintaining a rolling 30-year amortization period	-478,249	-0.24%
• Effect of contributions less than actuarially determined contribution	274,691	0.14%
• Effect of investment loss	1,763,117	0.88%
• Effect of other gains and losses on accrued liability	559,998	0.28%
• Net effect of other changes, including composition and number of participants	-1,372,396	-0.68%
Total change	\$1,156,032	0.58%
Total change in percentage due to compensation change		-0.15%
Actuarially Determined Contribution as of July 1, 2020	\$33,322,262	16.49%

Section 2: Actuarial Valuation Results

Schedule of funding progress through June 30, 2020

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
07/01/2011	\$892,096,375	\$1,158,070,396	\$265,974,021	77.03%	\$177,977,161	149.44%
07/01/2012	878,048,507	1,181,090,260	303,041,753	74.34%	181,406,586	167.05%
07/01/2013	888,209,730	1,216,684,458	328,474,728	73.00%	182,634,179	179.85%
07/01/2014	945,245,264	1,263,665,128	318,419,864	74.80%	191,299,778	166.45%
07/01/2015	993,856,763	1,319,287,541	325,430,778	75.33%	196,808,411	165.35%
07/01/2016	1,016,437,956	1,346,038,138	329,600,182	75.51%	200,205,482	164.63%
07/01/2017	1,044,789,100	1,422,976,476	378,187,376	73.42%	203,984,897	185.40%
07/01/2018	1,066,035,625	1,470,251,127	404,215,502	72.51%	208,175,344	194.17%
07/01/2019	1,063,878,399	1,501,381,496	437,503,097	70.86%	200,234,161	218.50%
07/01/2020	1,057,532,966	1,539,302,030	481,769,064	68.70%	202,026,478	238.47%



Section 2: Actuarial Valuation Results

History of employer contributions

A history of the most recent years of contributions is shown below.

History of Employer Contributions: 2012 – 2021

Fiscal Year Ended June 30	Actuarially Determined Employer Contribution (ADEC)¹	Actual Employer Contribution	Percent Contributed
2012	\$18,904,668	\$13,676,554	72.34%
2013	20,516,938	13,591,846	66.25%
2014	30,553,712	14,039,103	45.95%
2015	30,398,187	14,464,552	47.58%
2016	29,898,918	13,837,061	46.28%
2017	30,564,212	14,040,165	45.94%
2018	30,063,990	14,724,092	48.98%
2019	31,146,931	16,939,246	54.38%
2020	32,166,230	24,216,649	75.29%
2021	33,322,262	--	--

¹Prior to July 1, 2013, this amount was the Annual Required Contribution (ARC) and was calculated presuming that the employees would be responsible for an equal share of the cost of the System. However, if employee contribution rates were insufficient to cover half of the cost, the City was ultimately responsible for the funding of the System. Beginning July 1, 2013, the Actuarially Determined Employer Contribution (ADEC) is equal to the total calculated contribution in the most recent actuarial valuation, minus the portion expected to be covered by employee contributions.

Section 2: Actuarial Valuation Results

Risk

Since the actuarial valuation results are dependent on a given set of assumptions and data as of a specific date, there is a risk that emerging results may differ significantly as actual experience differs from the assumptions.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a brief discussion of some risks that may affect the Plan. A more detailed assessment would provide the Board with a better understanding of the risks inherent in the Plan. This assessment may include scenario testing, sensitivity testing, stress testing and stochastic modeling.

- Investment Risk (the risk that returns will be different than expected)

The market value rate of return over the last 20 years has ranged from a low of -11.09% to a high of 18.06%.

- Contribution Risk (the risk that actual contributions will be different from actuarially determined contribution)

Plan contributions are set by statute, but the City can budget more than the statutory rate. When the City and employee contribution rates are insufficient to amortize the unfunded liabilities over a reasonable period, the long-term health of the System will suffer. Periodic projections comparing expected contributions with the projected actuarially determined contributions should be developed to determine if the contributions are sufficient to fund the System and to ensure the payment of promised benefits. Deterministic projections will be provided to the Board separately.

- Longevity Risk (the risk that mortality experience will be different than expected)

The actuarial valuation includes an expectation of future improvement in life expectancy. Emerging plan experience that does not match these expectations will result in either an increase or decrease in the actuarially determined contribution. It is not yet known what short-term or long-term impact the COVID-19 pandemic may have on the System's mortality experience.

- Demographic Risk (the risk that participant experience will be different than assumed)

Examples of this risk include:

- Actual retirements occurring earlier or later than assumed. The value of retirement plan benefits is sensitive to the rate of benefit accruals and any early retirement subsidies that apply.
- More or less active participant turnover than assumed.

- Actual Experience Over the Last Ten years and Implications for the Future

Past experience can help demonstrate the sensitivity of key results to the System's actual experience. Over the past ten years:

The investment gain/loss for a year has ranged from a loss of \$68,254,708 to a gain of \$43,484,694.

The non-investment gain/loss for a year has ranged from a loss of \$23,002,953 to a gain of \$14,066,195.

Section 2: Actuarial Valuation Results

The funded percentage on the actuarial value of assets has ranged from a low of 68.7% to a high of 77.0% since 2011.

- Maturity Measures

As pension plans mature, the cash need to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the System's asset allocation is aligned to meet emerging pension liabilities.

Currently the System has a non-active to active participant ratio of 1.06. For the prior year benefits paid were \$56,712,046 more than contributions received. As the System matures, more cash will be needed from the investment portfolio to meet benefit payments.

Section 3: Supplemental Information

Exhibit A: Table of Plan Demographics

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
Active participants in valuation:			
• Number	3,624	3,659	-1.0%
• Average age	45.0	45.4	-0.4
• Average years of credited service	11.2	11.5	-0.3
• Total payroll ¹	\$202,026,478	\$200,234,161	0.9%
• Average payroll ¹	54,720	54,059	1.2%
• Account balances	122,072,045	118,930,326	2.6%
• Total active vested participants	2,402	2,504	-4.1%
Inactive vested participants²	413	378	9.3%
Inactive nonvested participants due a refund	299	246	21.5%
Retired participants:			
• Number in pay status	2,379	2,313	2.8%
• Average age	70.1	69.8	0.3
• Average monthly benefit	\$2,710	\$2,669	1.5%
Disabled participants:			
• Number in pay status ³	455	457	-0.4%
• Average age	63.5	63.0	0.5
• Average monthly benefit	\$1,694	\$1,695	-0.1%
Beneficiaries:			
• Number in pay status	592	585	1.2%
• Average age	75.7	75.6	0.1
• Average monthly benefit	\$1,083	\$1,049	3.2%

¹The total and average payroll includes \$4,282,943 in salaries as of June 30, 2020 for 68 Police and Fire retirees and \$2,847,692 in salaries as of June 30, 2019 for 45 Police and Fire retirees who have returned to work with the City under the provisions of H.B.397. However, these individuals are counted as inactive vested or retired participants elsewhere in this exhibit, depending on whether they are receiving benefits from the Supplemental System or the Retirement and Relief System.

²Includes future pensioners currently receiving benefits from the Supplemental System.

³Includes one disabled participant whose benefit currently paid from the Retirement and Relief System is zero due to worker's compensation benefits in excess of the benefit payable under the System.

Section 3: Supplemental Information

Exhibit B: Participants in Active Service as of June 30, 2020 by Age, Years of Credited Service, and Average Payroll

B-1 All Participants

Age	Years of Credited Service									
	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	108	108	--	--	--	--	--	--	--	--
	\$40,411	\$40,411	--	--	--	--	--	--	--	--
25 - 29	320	267	52	--	1	--	--	--	--	--
	42,621	40,863	\$51,910	--	\$28,891	--	--	--	--	--
30 - 34	444	236	142	66	--	--	--	--	--	--
	48,298	42,339	53,658	\$58,078	--	--	--	--	--	--
35 - 39	435	153	99	148	35	--	--	--	--	--
	54,609	44,648	56,033	61,181	66,342	--	--	--	--	--
40 - 44	474	121	96	126	107	22	2	--	--	--
	55,700	44,829	54,123	60,085	63,253	\$61,212	\$48,023	--	--	--
45 - 49	489	114	69	94	109	76	26	1	--	--
	59,000	45,434	54,052	61,096	66,713	68,321	64,874	\$47,970	--	--
50 - 54	487	107	61	79	70	95	66	9	--	--
	59,477	53,014	56,916	55,762	58,082	63,423	73,174	55,024	--	--
55 - 59	478	83	64	77	63	76	68	44	3	--
	58,359	55,822	60,245	57,205	58,521	58,603	60,865	56,807	\$74,417	--
60 - 64	295	49	39	40	44	40	48	25	6	4
	56,952	51,712	56,547	54,819	59,589	56,667	59,156	56,429	74,203	\$71,220
65 - 69	74	6	13	17	13	11	7	3	--	4
	60,839	59,690	53,640	58,543	62,531	66,719	56,816	54,793	--	85,629
70 & over	20	5	2	7	1	2	1	--	--	2
	56,225	65,435	60,863	50,968	29,907	58,585	43,602	--	--	64,070
Total	3,624	1,249	637	654	443	322	218	82	9	10
	\$54,565	\$45,017	\$55,170	\$58,955	\$62,320	\$62,534	\$64,366	\$56,314	\$74,274	\$75,554

Note: This chart excludes 68 retirees who have been reemployed by the City under the provisions of H.B.397.

Section 3: Supplemental Information

Exhibit B: Participants in Active Service as of June 30, 2020 by Age, Years of Credited Service, and Average Payroll

B-2 General Employees

Age	Years of Credited Service									
	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	25	25	--	--	--	--	--	--	--	--
	\$31,934	\$31,934	--	--	--	--	--	--	--	--
25 - 29	114	100	13	--	1	--	--	--	--	--
	33,521	33,032	\$37,631	--	\$28,891	--	--	--	--	--
30 - 34	201	137	48	16	--	--	--	--	--	--
	40,220	39,109	43,726	\$39,213	--	--	--	--	--	--
35 - 39	194	100	48	40	6	--	--	--	--	--
	46,612	43,102	51,000	49,740	\$49,158	--	--	--	--	--
40 - 44	276	99	67	50	45	13	2	--	--	--
	48,233	43,560	51,485	50,568	51,600	\$46,468	\$48,023	--	--	--
45 - 49	310	100	56	59	45	36	13	1	--	--
	52,619	43,801	52,133	57,721	62,499	56,678	54,314	\$47,970	--	--
50 - 54	356	93	54	57	47	61	35	9	--	--
	54,099	49,558	55,511	52,177	54,611	56,740	61,591	55,024	--	--
55 - 59	416	71	64	65	52	64	53	44	3	--
	55,865	48,224	60,245	56,083	57,504	56,557	56,270	56,807	\$74,417	--
60 - 64	268	36	39	37	43	37	41	25	6	4
	55,325	40,759	56,547	54,009	59,563	55,341	58,696	56,429	74,203	\$71,220
65 - 69	67	5	13	15	12	9	6	3	--	4
	60,046	53,693	53,640	57,846	62,684	66,657	55,094	54,793	--	85,629
70 & over	20	5	2	7	1	2	1	--	--	2
	56,225	65,435	60,863	50,968	29,907	58,585	43,602	--	--	64,070
Total	2,247	771	404	346	252	222	151	82	9	10
	\$50,665	\$42,228	\$52,680	\$53,160	\$56,978	\$56,261	\$57,754	\$56,314	\$74,274	\$75,554

Section 3: Supplemental Information

Exhibit B: Participants in Active Service as of June 30, 2020 by Age, Years of Credited Service, and Average Payroll

B-3 Fire

Age	Years of Credited Service								
	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39
Under 25	33	33	--	--	--	--	--	--	--
	\$44,210	\$44,210	--	--	--	--	--	--	--
25 - 29	64	49	15	--	--	--	--	--	--
	50,232	47,643	\$58,692	--	--	--	--	--	--
30 - 34	97	39	37	21	--	--	--	--	--
	55,147	47,335	58,042	\$64,555	--	--	--	--	--
35 - 39	107	24	27	39	17	--	--	--	--
	61,139	48,052	60,530	65,137	\$71,409	--	--	--	--
40 - 44	100	14	16	26	38	6	--	--	--
	67,658	51,733	59,725	67,079	74,514	\$85,068	--	--	--
45 - 49	94	10	8	15	35	25	1	--	--
	71,326	60,792	62,150	67,737	71,875	79,757	\$73,929	--	--
50 - 54	64	5	4	10	10	19	12	4	--
	75,971	62,903	67,902	66,670	66,275	78,987	86,085	\$103,195	--
55 - 59	29	1	--	2	6	7	10	3	--
	76,630	66,248	--	65,117	65,423	68,084	82,203	111,545	--
60 - 64	10	--	--	2	1	2	2	2	1
	74,503	--	--	66,860	60,691	77,548	62,489	101,697	\$67,148
Total	598	175	107	115	107	59	25	9	1
	\$63,319	\$48,604	\$59,688	\$65,972	\$71,748	\$78,589	\$82,158	\$105,645	\$67,148

Note: This chart excludes one retired firefighter who has been reemployed by the City under the provisions of H.B.397

Section 3: Supplemental Information

Exhibit B: Participants in Active Service as of June 30, 2020 by Age, Years of Credited Service, and Average Payroll

B-4 Police

Age	Years of Credited Service								
	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39
Under 25	50	50	--	--	--	--	--	--	--
	\$42,142	\$42,142	--	--	--	--	--	--	--
25 - 29	142	118	24	--	--	--	--	--	--
	46,496	44,684	\$55,405	--	--	--	--	--	--
30 - 34	146	60	57	29	--	--	--	--	--
	54,870	46,466	59,176	\$63,796	--	--	--	--	--
35 - 39	134	29	24	69	12	--	--	--	--
	60,974	47,160	61,041	65,577	\$67,755	--	--	--	--
40 - 44	98	8	13	50	24	3	--	--	--
	64,523	48,451	60,823	65,966	67,272	\$77,387	--	--	--
45 - 49	85	4	5	20	29	15	12	--	--
	68,637	47,865	62,583	66,070	67,021	77,206	\$75,558	--	--
50 - 54	67	4	3	12	13	15	19	1	--
	72,294	60,549	67,558	63,705	64,331	70,882	86,355	\$94,105	--
55 - 59	33	--	--	10	5	5	5	7	1
	73,747	--	--	62,911	60,811	71,520	66,898	101,375	\$98,764
60 - 64	17	2	--	1	--	1	5	3	5
	72,273	49,660	--	60,691	--	63,986	61,590	78,338	92,337
65 - 69	7	--	--	2	1	2	1	--	1
	68,435	--	--	63,770	60,691	66,998	67,148	--	89,674
Total	779	275	126	193	84	41	42	11	7
	\$59,093	\$45,295	\$59,318	\$65,163	\$66,336	\$73,392	\$77,548	\$94,431	\$92,875

Note: This chart excludes 67 retired police officers who have been reemployed by the City under the provisions of H.B.397.

Section 3: Supplemental Information

Exhibit C: Reconciliation of Participant Data

	Active Participants	Inactive Vested Participants	Fire and Police Retirees	Disableds	Retired Participants	Beneficiaries	Total
Number as of July 1, 2019	3,659	55	323	457	2,313	585	7,392
• New participants	316	N/A	0	N/A	N/A	N/A	316
• Terminations – with vested rights	-5	5	0	0	0	0	0
• Terminations – without vested rights	-91	N/A	0	N/A	N/A	N/A	-91
• Retirements	-167	0	66	N/A	101	N/A	0
• New disabilities	-10	0	0	10	N/A	N/A	0
• Return to work	0	0	0	0	0	N/A	0
• Died with beneficiary	0	0	-1	-12	-68	-35	-116
• Died without beneficiary	0	0	0	0	0	43	43
• Lump sum cash-outs	-98	-1	0	0	0	0	-99
• Rehire	21	-1	0	N/A	-1	N/A	19
• Certain period expired	N/A	N/A	0	0	0	-1	-1
• Data adjustments	-1	-2	0	0	3	0	0
• Active participants no longer accruing benefits	0	0	0	N/A	N/A	N/A	0
• Retirees transferring from supplemental plan	0	0	-31	0	31	0	0
Number as of July 1, 2020	3,624	56	357	455	2,379	592	7,463

Section 3: Supplemental Information

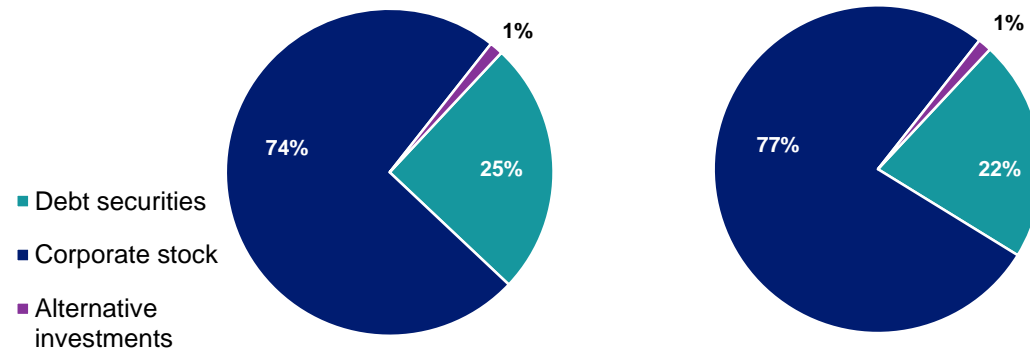
Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended June 30, 2020	Year Ended June 30, 2019
Net assets at market value at the beginning of the year	\$1,042,877,491	\$1,055,421,690
Contribution income:		
• Employer contributions	\$24,216,649	\$16,939,246
• Employee contributions	14,065,497	13,859,226
• F&P Supplemental contributions	4,325,433	2,713,405
• Less administrative expenses	<u>-356,552</u>	<u>-280,245</u>
<i>Net contribution income</i>	<i>\$42,251,027</i>	<i>\$33,231,632</i>
Investment income:		
• Interest, dividends and other income	\$37,352,363	\$26,340,660
• Asset appreciation	-26,222,627	27,214,905
• Less investment fees	<u>-3,289,334</u>	<u>-4,565,932</u>
<i>Net investment income</i>	<i>\$7,834,402</i>	<i>\$48,989,633</i>
Total income available for benefits	\$50,085,429	\$82,221,265
Less benefit payments:		
• Benefits	-\$92,031,155	-\$86,698,843
• Refunds	-2,472,521	-1,990,308
• DROP Payments	<u>-4,459,397</u>	<u>-6,076,313</u>
<i>Net benefit payments</i>	<i>-\$98,963,073</i>	<i>-\$94,765,464</i>
Change in market value of assets	-\$48,877,644	-\$12,544,199
Net assets at market value at the end of the year	\$993,999,847	\$1,042,877,491

Section 3: Supplemental Information

Exhibit E: Summary Statement of Plan Assets

	June 30, 2020	June 30, 2019
Cash equivalents	\$42,673,109	\$74,891,254
Total accounts receivable	11,831,904	12,816,799
Investments:		
• Corporate stock	\$691,734,682	\$734,286,632
• Debt securities	236,022,951	208,908,193
• Alternative investments	<u>12,516,623</u>	<u>12,800,872</u>
Total investments at market value	\$940,274,256	\$955,995,697
Total assets	\$994,779,269	\$1,043,703,750
Total accounts payable	-779,422	-826,259
Net assets at market value	\$993,999,847	\$1,042,877,491
Net assets at actuarial value	\$1,057,532,966	\$1,063,878,399



Section 3: Supplemental Information

Exhibit F: Development of the Fund through June 30, 2020

Year Ended June 30	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return ¹	Admin. Expenses	Benefit Payments	Market Value of Assets at Year-End	Actuarial Value of Assets at Year-End	Actuarial Value as a Percent of Market Value
2011	\$13,772,490	\$11,881,396	\$8,000	\$142,064,641	\$273,817	\$79,179,627	\$899,471,222	\$892,096,375	99.2%
2012	13,676,554	12,027,821	12,000	29,540,542	145,619	67,679,529	886,902,991	878,048,507	99.0%
2013	13,591,846	11,786,408	888,918	91,188,014	138,933	69,109,986	935,111,258	888,209,730	95.0%
2014	14,039,103	11,984,752	-888,918 ²	144,761,454	122,916	72,124,342	1,032,760,391	945,245,264	91.5%
2015	14,464,552	12,227,545	0	43,686,697	178,807	76,439,094	1,026,521,284	993,856,763	96.8%
2016	13,837,061	13,843,088	2,533,039 ³	4,081,529	266,304	78,753,617	981,796,080	1,016,437,956	103.5%
2017	14,040,165	14,030,922	2,514,643	109,852,441	284,778	83,864,528	1,038,084,945	1,044,789,100	100.6%
2018	14,724,092	14,152,427	2,551,981	76,008,815	260,079	89,840,491	1,055,421,690	1,066,035,625	101.0%
2019	16,939,246	13,859,226	2,713,405	48,989,633	280,245	94,765,464	1,042,877,491	1,063,878,399	102.0%
2020	24,216,649	14,065,497	4,325,433	7,834,402	356,552	98,963,073	993,999,847	1,057,532,966	106.4%

¹On a market basis, net of investment fees

²As of June 30, 2013, there was a contribution balance of \$888,918 for active fire and police employees with more than 30 years of service, which was understood to be a pending transfer from the Supplemental System. Segal adjusted the market value of assets to account for this pending transfer. This adjustment was reversed as of June 30, 2014, as the transfer was within the Supplemental System accounts, and not to the Retirement and Relief System.

³Prior to 2016, contributions received from the Fire and Police Supplemental Plan on behalf of retired police officers and firefighters were included with employer contributions; they are now shown as other income.

Section 3: Supplemental Information

Exhibit G: Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of \$160,000 indexed for inflation. That limit is \$230,000 for 2020. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as form of benefits chosen and after tax contributions.

Benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Section 3: Supplemental Information

Exhibit H: Definition of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Actuarial Accrued Liability for Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability for Retirees and Beneficiaries:	Actuarial Present Value of lifetime benefits to existing retirees and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the actuarially determined contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially Equivalent:	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Section 3: Supplemental Information

Actuarial Present Value of Future Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan, as well as Actuarially Determined Contributions.
Actuarial Value of Assets (AVA):	The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the Plan.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the Plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is intended to pay off the Unfunded Actuarial Accrued Liability.

Section 3: Supplemental Information

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Plan is calculated, including: <u>Investment return</u> - the rate of investment yield that the Plan will earn over the long-term future; <u>Mortality rates</u> - the rate or probability of death at a given age for employees and retirees; <u>Retirement rates</u> - the rate or probability of retirement at a given age or service; <u>Disability rates</u> - the rate or probability of disability retirement at a given age; <u>Withdrawal rates</u> - the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; <u>Salary increase rates</u> - the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded Ratio:	The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the AVA.

Section 3: Supplemental Information

GASB 67 and GASB 68:	Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.
Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Net Pension Liability (NPL):	The Net Pension Liability is equal to the Total Pension Liability minus the Plan Fiduciary Net Position.
Normal Cost:	The portion of the Actuarial Present Value of Future Benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.
Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.
Plan Fiduciary Net Position:	Market value of assets.
Total Pension Liability (TPL):	The actuarial accrued liability under the entry age normal cost method and based on the blended discount rate as described in GASB 67 and 68.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

Section 4: Actuarial Valuation Basis

Exhibit I: Actuarial Assumptions, Actuarial Cost Method and Models

Rationale for Assumptions:	The information and analysis used in selecting each demographic assumption that has a significant effect on this actuarial valuation is shown in the Experience Study Report for the five-year period ended June 30, 2015. Based on the results of that study as well as professional judgment, no additional demographic assumption changes are warranted at this time and will be assessed again in the next five-year review.			
Net Investment Return:	7.50% The net investment return assumption was chosen by the Retirement and Relief System's Board of Trustees, with input from the actuary. The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as well as the System's target asset allocation.			
Salary Increases:	General		Fire and Police	
	Age	Rate (%)	Years of Service	Rate (%)
	20	7.00	Less than 1	6.75
	25	6.25	1-2	6.50
	30	5.50	2-3	6.25
	35	4.75	3-4	6.00
	40	4.00	4-5	5.75
	45	3.50	5-6	5.50
	50	3.00	6-7	5.25
	55	2.75	7-8	5.00
	60 & over	2.50	8-9	4.75
			9-10	4.50
			10-15	4.00
			15-20	3.50
			20-25	3.00
			25-29	2.75
	<i>Note: The salary increase rates for all groups include 2.50% inflation.</i>			

Section 4: Actuarial Valuation Basis

Payroll Growth:	2.50%, used to amortize the unfunded actuarial accrued liability as a level percentage of payroll.																																																									
Administrative Expenses:	\$300,000 per year, payable monthly, equivalent to \$288,538 at the beginning of the year. The annual administrative expenses were based on historical and current data and adjusted to reflect estimated future experience and professional judgment.																																																									
Mortality Rates:	<p><i>Pre-retirement:</i> RP-2014 Blue Collar Employee Mortality Table, set forward two years for males and four years for females, projected generationally using Scale MP-2015</p> <p><i>Healthy annuitants:</i> RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for males and four years for females, projected generationally using Scale MP-2015</p> <p><i>Disabled annuitants:</i> RP-2014 Disabled Retiree Mortality Table, projected generationally using Scale MP-2015</p> <p>The tables above, with adjustments as shown, reasonably reflect the mortality experience of the System as of the measurement date. The mortality tables were then generationally projected using Scale MP-2015 to reflect future mortality improvement.</p>																																																									
Annuitant Mortality Rates:	<table border="1"> <thead> <tr> <th rowspan="3">Age</th> <th colspan="4">Rate (%)</th> </tr> <tr> <th colspan="2">Healthy¹</th> <th colspan="2">Disabled¹</th> </tr> <tr> <th>Male</th> <th>Female</th> <th>Male</th> <th>Female</th> </tr> </thead> <tbody> <tr> <td>55</td> <td>0.69</td> <td>0.53</td> <td>2.34</td> <td>1.45</td> </tr> <tr> <td>60</td> <td>0.98</td> <td>0.80</td> <td>2.66</td> <td>1.70</td> </tr> <tr> <td>65</td> <td>1.50</td> <td>1.27</td> <td>3.17</td> <td>2.09</td> </tr> <tr> <td>70</td> <td>2.37</td> <td>2.08</td> <td>4.03</td> <td>2.82</td> </tr> <tr> <td>75</td> <td>3.83</td> <td>3.44</td> <td>5.43</td> <td>4.10</td> </tr> <tr> <td>80</td> <td>6.36</td> <td>5.83</td> <td>7.66</td> <td>6.10</td> </tr> <tr> <td>85</td> <td>10.70</td> <td>10.04</td> <td>11.33</td> <td>9.04</td> </tr> <tr> <td>90</td> <td>17.77</td> <td>16.63</td> <td>17.30</td> <td>13.27</td> </tr> </tbody> </table>					Age	Rate (%)				Healthy ¹		Disabled ¹		Male	Female	Male	Female	55	0.69	0.53	2.34	1.45	60	0.98	0.80	2.66	1.70	65	1.50	1.27	3.17	2.09	70	2.37	2.08	4.03	2.82	75	3.83	3.44	5.43	4.10	80	6.36	5.83	7.66	6.10	85	10.70	10.04	11.33	9.04	90	17.77	16.63	17.30	13.27
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	¹ Rates shown do not include generational projection.																																																									

Section 4: Actuarial Valuation Basis

Mortality and Disability Rates Before Retirement:	Rate (%)					
	Age	Mortality ¹		Disability		
		Male	Female	General	Fire	Police
	20	0.06	0.02	0.40	0.15	0.15
	25	0.06	0.02	0.40	0.15	0.15
	30	0.06	0.03	0.40	0.15	0.15
	35	0.07	0.04	0.40	0.95	0.15
	40	0.09	0.07	0.40	0.95	0.50
	45	0.16	0.11	0.40	0.95	0.50
	50	0.27	0.17	0.95	0.95	0.50
	55	0.44	0.25	0.95	0.95	0.50
	60	0.76	0.38	0.95	0.95	0.50

¹Rates shown do not include generational projection.

On the Job Disability:	
<i>General</i>	50%
<i>Fire</i>	80%
<i>Police</i>	100%
On the Job Death:	
<i>General</i>	5%
<i>Fire and Police</i>	15%

Section 4: Actuarial Valuation Basis

Termination Rates Before Retirement:	Rate (%)	
	Withdrawal	
	Years of Service	General
1	10.00	5.00
2	9.00	4.50
3	8.00	4.25
4	7.50	4.00
5	7.00	3.75
6	6.50	3.50
7	6.00	3.25
8	5.50	3.00
9	5.00	2.50
10	4.50	2.00
11	4.00	1.75
12	3.50	1.50
13	3.00	1.25
14	2.50	1.00
15	2.00	1.00
16	1.50	1.00
17-20	1.00	0.50
20-30	1.00	0.00

Section 4: Actuarial Valuation Basis

Retirement Rates:

Fire		Police	
Years of Service ¹	Rate (%)	Years of Service ¹	Rate (%)
20	15.0	20	30.0
21	10.0	21	15.0
22-25	5.0	22	7.5
26-27	20.0	23-25	2.5
28	10.0	26	20.0
29	50.0	27-28	10.0
30-32	0.0	29	40.0
33	50.0	30-32	0.0
34	20.0	33	100.0
35	100.0		

¹Retirement is assumed to occur no later than age 65

Note: Benefits are payable from the F&P Supplemental Pension System until the participant reaches 30 years of service under the R&R System.

General Employees Hired Prior to July 1, 2017		General Employees Hired On or after July 1, 2017	
Age	Rate (%)	Age	Rate (%)
Under 50	0.0	Under 50	0.0
50-54	35.0	50-54	35.0
55-60	20.0	55-60	20.0
61	25.0	61	25.0
62	40.0	62	50.0
63-64	25.0	63-64	25.0
65	35.0	65	60.0
66-73	35.0	66-73	35.0
74 & over	100.0	74 & over	100.0

Section 4: Actuarial Valuation Basis

Description of Weighted Retirement Age	Age 59.6, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the July 1, 2019 actuarial valuation.
Retirement Rates for Inactive Vested Participants:	60
Interest on DROP Accounts:	5.00%
Utilization of BackDROP:	40% of retiring General Employees are assumed to elect a three-year BackDROP. General Employees who retire prior to 33 years of service are not assumed to utilize the BackDROP provisions of the plan. 90% of retiring Firefighters are assumed to elect a three-year BackDROP. Firefighters who retire prior to 23 years of service are not assumed to utilize the BackDROP provisions of the plan. 70% of retiring Police Officers are assumed to elect a three-year BackDROP. Police Officers who retire prior to 23 years of service are not assumed to utilize the BackDROP provisions of the plan.
Unknown Data for Participants:	Same as those exhibited by Participants with similar known characteristics. If not specified, participants are assumed to be male.
Percent Married:	75%
Age of Spouse:	Females three years younger than males
Actuarial Value of Assets:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis, with Normal Cost determined as if the current benefit accrual rate had always been in effect. Actuarial Liability is allocated by salary.
Models:	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.
Justification for Change in Actuarial Assumptions:	Based on past experience and future expectations, the administrative expense assumption was increased from \$275,000 to \$300,000.

Section 4: Actuarial Valuation Basis

Exhibit II: Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year:	July 1 through June 30
Plan Status:	Ongoing
Normal Retirement:	
<u>Members whose participation began before July 1, 2017</u>	
<i>Eligibility</i>	A participant may retire at (a) age 60 if he has completed 5 years of credited service, or (b) any age if he has completed 30 years of credited service.
<i>Amount</i>	2.50% of final average salary for each year of credited service. This amount cannot be greater than 75.0% of the final average salary nor less than \$400 per month.
<u>Members whose participation began on or after July 1, 2017</u>	
<i>Eligibility</i>	A participant may retire at (a) age 62 if he has completed 10 years of credited service, or (b) any age if he has completed 30 years of credited service.
<i>Amount</i>	2.25% of final average salary for each year of credited service. This amount cannot be greater than 67.5% of the final average salary nor less than \$400 per month. Service credit used to determine the benefit amount may be increased by credit granted for unused sick leave (on a percent of possible total basis). Final average salary is defined as the highest average compensation over any 36-month period of the employee's last ten years of participation.
Early Retirement:	
<i>Eligibility</i>	A City participant may retire at age 55 if he has completed 25 years of credited service.
<i>Amount</i>	1.85% of final average salary for each year of credited service.
Ordinary Disability:	
<i>Service Requirement</i>	5 years of credited service.
<i>Amount</i>	2.00% of final average salary at disability for each year of credited service, payable immediately. This amount cannot be greater than 60% of final average salary nor less than \$400.

Section 4: Actuarial Valuation Basis

Extraordinary Disability:	None			
<i>Service Requirement</i>	70% of final monthly salary at disability offset by the maximum Worker's Compensation benefit, payable immediately			
<i>Amount</i>				
Vesting Period:	5 years of credited service for participants hired prior to July 1, 2017 10 years of credited service for participants hired on or after July 1, 2017			
Termination:	To a participant terminating before becoming eligible for a vested deferred pension from the plan, a lump sum of his or her own contributions without interest is payable. Participants terminating after achieving vested status who leave their contributions in the System have a non-forfeitable right to a monthly pension beginning at age 60. The form and amount of the pension are the same as the normal pension.			
Death Benefits:	If a participant dies prior to his or her attainment of eligibility for retirement, a lump sum of his or her own contributions without interest is payable to his or her beneficiary. If an active participant who is eligible to retire or a retired participant dies, 60% of the accrued pension benefit is payable to the surviving spouse, if any, during his or her remaining lifetime. If an active participant (other than a participant of the Firemen and Policemen Supplemental System) who is not eligible to retire, but who is vested dies, a portion of 60% of the accrued pension benefit is payable to the spouse during her remaining lifetime. This portion is defined as follows:			
	Hired Prior to July 1, 2017		Hired On or After July 1, 2017	
	Number of Years of Service	Portion of Entitled Benefit	Number of Years of Service	Portion of Entitled Benefit
	5	50%	10	50%
	6	60	11	60
	7	70	12	70
	8	80	13	80
	9	90	14	90
	10 or more	100	15 or more	100
	This benefit is payable at the earlier of (a) the date that the deceased participant would have attained age 60 or (b) the date the deceased participant would have completed 20 years of service. In lieu of the above, for all participants, an annuity of 60% of salary is payable to the surviving spouse and 10% is payable to a minor child if death is service connected; the maximum for spouse and children is 75% and the maximum for children if no spouse is 60%. The minimum spouse benefit is \$320 per month.			

Section 4: Actuarial Valuation Basis

BackDROP:	An employee with 33 years of service or who is at least age 63 with 23 years of service may elect up to a 36-month BackDROP. The employee's monthly benefit will be calculated using service and final average salary as of the BackDROP date and the employee will receive a lump sum equal to the number of months dropped back times the retirement benefit, accumulated with interest.
Participation:	All qualified employees of the Retirement and Relief System are required to participate.
Contribution Rates:	
<i>Employees</i>	7.00% of compensation
<i>City</i>	14.50% of compensation effective July 1, 2020
<i>Other agencies</i>	9.00% of compensation effective July 1, 2020
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.