

City of Philadelphia Municipal Retirement System

**Actuarial Valuation Report
as of July 1, 2020**

Produced by Cheiron

April 2021

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LETTER OF TRANSMITTAL

April 13, 2021

City of Philadelphia Municipal Retirement System
Two Penn Center Plaza – 16th Floor
Philadelphia, Pennsylvania 19102-1721

Dear Board Members:

At your request, we have performed the July 1, 2020 Actuarial Valuation of the City of Philadelphia Municipal Retirement System (the System).

In preparing our report, we relied on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. The results of this report are only applicable to the System's contribution for Fiscal Year Ending 2022. Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

This report has been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries we meet the Qualification Standards, as defined by the American Academy of Actuaries, to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This actuarial valuation report was prepared exclusively for the City of Philadelphia Municipal Retirement System for the purposes described herein and for the Plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Finally, in preparation of this report, we have accepted the assumptions and methodologies as adopted by the Board of Pensions and Retirement for the City of Philadelphia Municipal Retirement System.

Sincerely,
Cheiron



Anu Patel, FSA, EA
Principal Consulting Actuary



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**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

SECTION I – BOARD SUMMARY

The primary purpose of the actuarial valuation and this report is to disclose the following as of the valuation date:

- The financial condition of the City of Philadelphia Municipal Retirement System (the System),
- Past and expected future trends and risks to the Retirement System’s financial condition,
- The City’s Minimum Municipal Obligation (MMO) representing the required contribution in accordance with Act 205 of Pennsylvania Law for Fiscal Year End (FYE) 2022,
- The Revenue Recognition Policy (RRP) contribution amount requested by the City, and
- The Retirement Board’s Funding Policy recommended City contribution.

Cheiron has issued a separate report containing the information required by the Governmental Accounting Standards Board (GASB) and therefore that accounting information is not included in this valuation report.

In this Section, we present a summary of the principal valuation results. This includes the basis upon which the July 1, 2020 valuation was completed and an examination of the current financial condition of the System. In addition, we present a review of the key historical trends followed by the System’s projected financial outlook.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

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A. Valuation Basis

The July 1, 2020 valuation results are based on the same actuarial methods and assumptions as used in the July 1, 2019 valuation except for the decrease in the interest rate assumption from 7.55% to 7.50% as of July 1, 2020 as adopted by the Board. For a detailed description of the methods and assumptions, refer to Appendix C of this report.

This report was prepared using census data and financial information as of July 1, 2020 and does not reflect any subsequent changes in the membership or the assets.

Whereas there remains a lot of uncertainty during the COVID-19 pandemic, we continue to monitor developments and the impact it may have on the System. Actual experience, both demographic and economic, will be reflected in subsequent valuations as experience emerges.

This valuation is based on plan provisions in effect as of July 1, 2020 and does not reflect the impact of any changes in benefits effective after the valuation date.

Since FYE 2018, the City started making contributions based on an alternate funding policy known as the Revenue Recognition Policy (RRP), which calls for contributions in excess of the Minimum Municipal Obligation (MMO). Each year, there are three sources of anticipated *additional revenue* that are received by the System:

- A portion of the sales tax revenue according to the State Legislation,
- Additional tiered member contributions based on salary level for current and future Municipal members, and
- Additional member contributions for current and future members in Plan 87 Police and Fire.

Typically, as additional contributions are received, the following years' MMOs are reduced as a function of the additional assets. However, it is our understanding the objective of the RRP for these additional revenue sources is to dedicate them toward paying down the unfunded liability and not to reduce future City costs. The RRP contributions are similar to the MMO except that the *additional revenue* coming into the System is tracked and accumulated in a notional account which is then deducted from the Actuarial Asset Value to determine the City's contribution. So, under the RRP, the City's contributions do not reflect the additional cash flow into the fund from the sales tax or additional tier/member contributions.

The MMO is calculated using all assets including *additional revenue* sources for state reporting purposes under Act 205 and represents the Actuarially Determined Contribution (ADC) under Governmental Accounting Standards.

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Below we highlight significant results of this valuation:

- **Financial Performance:** The return on market value of assets at 1.53% for the year ending June 30, 2020, was lower than the expected 7.55% assumed rate of return. For funding purposes, the System applies an asset smoothing method to determine the Actuarial Value of Assets which phases in actuarial investment gains and losses over ten years. On an actuarial asset value basis the return as of June 30, 2020 was 6.54% resulting in a net asset loss of \$50.7 million when compared to the 7.55% assumption.
 - The smoothing method also limits the actuarial asset method to not be greater than 120% nor less than 80% of the underlying market value of assets. The ratio of actuarial assets to market assets increased from 102.9% in the prior year to 108.0% for the current year.
- **Pension Adjustment Fund (PAF):** As defined in the Philadelphia Code the PAF provides for additional benefits to current retirees through the use of excess earnings. Excess earnings are defined as returns in excess of the assumed return rate plus 1.00%. The asset return for the adjusted market value which is based on five-year smoothing of asset gains and losses (instead of the 10 years for funding) was 5.29%. Because the return is below 8.55% (the assumed prior year rate of return of 7.55% plus 1.00%), there are no additional amounts transferred into the PAF as of June 30, 2020.
- **Unfunded Actuarial Liability (UAL):** The UAL is the excess of the System's actuarial liability (AL) over the actuarial value of assets (AVA). The UAL decreased by \$135.3 million from \$5,930.6 million as of July 1, 2019 to **\$5,795.3 million as of July 1, 2020**. The UAL decreased because the City and member contributions received during the year were higher than the normal cost plus interest on the UAL.
 - The UAL increased by \$8.9 million due to liability losses resulting from higher than expected salary increases offset by participants in transition from active to non-active status on retirees and increased by \$50.7 million due to asset return losses. The UAL increased by \$57.1 million due to the decrease in discount rate. These values are offset by contributions towards paying down the unfunded, differences in benefit accrual rates and interest on payment timing of \$251.9 million.
- **Funding Ratio:** This is the ratio of the System's AVA to AL. The funding ratio increased from 49.7% as of July 1, 2019 to **51.9% as of July 1, 2020**, mainly due to underlying growth in assets resulting from increased contributions. The funding ratio on market assets to liability basis slightly decreased from 48.3% to 48.0%.
- **Plan Changes:** There were no changes in plan provisions since the July 1, 2019 valuation.
- **Assumption Changes:** The interest rate was decreased from 7.55% to 7.50% resulting in an increase in Actuarial Liability of \$50.7 million.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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- **Minimum Municipal Obligation (MMO):** The MMO is the required minimum amount the City must contribute under Pennsylvania State Law. The MMO increased from \$673.9 million for FYE 2021 to **\$678.2 million for FYE 2022**. The expected City contributions based on the RRP are higher than the MMO and each year that the City continues to contribute in excess of the MMO, the MMO is expected to decrease assuming the actuarial assumptions are met each year. However, there was an increase this year due to the actuarial losses and change in discount rate.
- **Revenue Recognition Policy (RRP):** The contribution based on the RRP increased from \$713.0 million for FYE 2021 to **\$727.4 million for FYE 2022**. The balance of the notional account, which is removed from the assets in calculating this contribution, increased from \$143.6 million as of July 1, 2019 to \$213.9 million as of July 1, 2020.
- **Contribution under the City’s Funding Policy:** The beginning-of-year contribution under the City’s Funding Policy decreased from \$815.2 million for FYE 2021 based upon actual FYE 2020 payroll to an estimated **\$784.1 million for FYE 2022**.

Table I-1 summarizes the comparative UAL and fiscal year funding amounts discussed above.

Table I-1 Key Results (\$ thousands)					
Valuation Date	7/1/2020		7/1/2019		
Actuarial Liability	\$	12,038,051	\$	11,783,085	
Actuarial Value of Assets	\$	6,242,696	\$	5,852,473	
Unfunded Actuarial Liability/(Surplus)	\$	5,795,355	\$	5,930,612	
Funding Ratio		51.9%		49.7%	
		Fiscal Year 2022		Fiscal Year 2021	
Minimum Municipal Obligation	\$	678,192	\$	673,884	
Revenue Recognition Policy Contribution	\$	727,430	\$	712,978	
City's Funding Policy Contribution*	\$	784,124	\$	815,214	

*The City’s funding policy contribution for FYE 2021 was updated based upon the actual payroll of \$1,921.2 million (provided as pay rates in the data) as of July 1, 2020. In the July 1, 2019 actuarial valuation report, the estimated FYE 2021 payroll was \$1,903.4 million based on July 1, 2019 pay rates and increased with the payroll assumption.

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B. Current Financial Condition

On the following pages, we summarize the key results of the July 1, 2020 valuation and how they compare to the results from the July 1, 2019 valuation.

1. City Membership:

As shown in Table I-2 below, total membership in the Retirement System decreased by 0.5% from 2019 to 2020.

Table I-2 Membership Total				
	July 1, 2020	July 1, 2019	% Change	
Actives	28,892	28,596	1.0%	
Terminated Vesteds	929	965	-3.7%	
Disabled	3,833	3,883	-1.3%	
Retirees	22,249	22,241	0.0%	
Beneficiaries	8,471	8,574	-1.2%	
DROP	1,642	2,069	-20.6%	
Total City Members	66,016	66,328	-0.5%	
Annual Salaries	\$ 1,921,217,453	\$ 1,842,554,883	4.3%	
Average Salary per Active Member	\$ 66,497	\$ 64,434	3.2%	
Annual Retirement Allowances	\$ 789,023,043	\$ 774,067,324	1.9%	
Average Retirement Allowance	\$ 22,835	\$ 22,309	2.4%	

The active participant population increased by 1.0% during the 2019-2020 plan year. Deferred Retirement Option Plan (DRO) participants decreased 20.6% from 2019 to 2020 as more members retired from DRO than enrolled in DRO. The average salary per active member increased by 3.2% during the plan year. The result of increased active membership paired with the salary growth produced a total payroll growth of 4.3% versus the expected 3.3% payroll growth assumption.

Annual retirement allowances increased by 1.9% in aggregate with the average benefits also increasing 2.4%. The total number of participants in pay status decreased 0.4%.

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SECTION I – BOARD SUMMARY

2. City Assets and Liabilities:

Table I-3 presents a comparison between the July 1, 2020 and July 1, 2019 system assets, liabilities, UAL, and funding ratios. The AVA Funding Ratio increased from 49.7% as of July 1, 2019 to **51.9%** as of July 1, 2020 despite the liability and asset losses and decrease in the interest rate assumption. Prior to the change in the interest rate assumption, the funded ratio would have been 52.1%.

Table I-3 Assets and Liabilities (\$ thousands)					
Actuarial Liabilities by Membership:					
Actives	\$	4,331,823	\$	4,032,506	7.4%
Terminated Vesteds		94,667		94,670	0.0%
Disabled		814,359		802,333	1.5%
Retirees		5,242,456		5,156,344	1.7%
Beneficiaries		698,160		687,522	1.5%
DROP		847,371		1,000,293	-15.3%
Non-Vested Refunds		9,215		9,417	-2.1%
Total Actuarial Liability (AL)	\$	12,038,051	\$	11,783,085	2.2%
Market Value of Assets (MVA net of PAF)*	\$	5,781,647	\$	5,687,158	1.7%
Actuarial Value of Assets (AVA net of PAF)*	\$	6,242,696	\$	5,852,473	6.7%
Ratio of Actuarial Assets to Market Assets		108.0%		102.9%	5.1%
Unfunded Actuarial Liability	\$	5,795,355	\$	5,930,612	-2.3%
Funding Ratio (AVA ÷ AL)		51.9%		49.7%	2.2%
Funding Ratio (MVA ÷ AL)		48.0%		48.3%	-0.3%

*The PAF is available for distribution under title §22-311 of the Philadelphia Code. In general, the PAF provides for enhanced benefit distribution to retirees and beneficiaries through the use of excess earnings. For more details on the PAF, see Section II – E

The market asset value average return is 1.53% compared to the 7.55% assumption for the previous year. For the actuarial value of assets, the investment gains and losses are smoothed over future years, which yielded a rate of return of 6.54%.

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SECTION I – BOARD SUMMARY

3. Components of UAL Change between July 1, 2019 and July 1, 2020:

The Retirement System’s unfunded actuarial liability decreased by \$135.3 million from the prior year. Table I-4 presents the specific components of this change in the UAL.

The System experienced a \$50.7 million asset loss based on the actuarial value of assets and a \$8.9 million liability loss which is attributable to demographic experience. There was also an additional liability of \$57.1 million due to the change in interest rate. Actual FYE 2020 contributions when compared to the expected RRP created a net loss of \$7.7 million due to timing of contributions. **The higher employer contributions under RRP in comparison to MMO resulted in a gain of \$71.6 million.** There was a \$3.2 million gain due to the one year deferral of gains and losses under the MMO funding requirements. When these changes are compared to the expected pay down of the UAL as part of the MMO there is a net decrease in the UAL of \$135.3 million over what is expected as of July 1, 2020.

Table I-4	
Change in Unfunded Actuarial Liability (UAL)	
(\$ thousands)	
Unfunded Actuarial Liability	
1. UAL as of July 1, 2019	\$ 5,930,612.8
2. UAL as of July 1, 2020	\$ 5,795,355.3
3. Net increase/(decrease) in UAL: 2 - 1	\$ (135,257.5)
Changes in Unfunded Actuarial Liability	
Experience	
4. UAL change due to asset (gain)/loss*	\$ 50,724.9
5. UAL change due to overall liability (gain)/loss	\$ 8,864.8
Contributions	
6. UAL change due to difference in benefit accruals, actual contributions and timing	\$ 7,761.3
7. UAL change due to one-year delay in MMO contributions	\$ (3,176.9)
8. UAL change due to RRP contributions in excess of the MMO contributions	\$ (71,569.9)
Total (Gain)/Loss Amortization Base	
9. Total UAL change due to gains and losses: sum 4 through 8	\$ (7,395.8)
Plan Changes	
10. UAL change due to plan changes	\$ 0
Assumption Changes	
11. UAL change due to assumption changes	\$ 57,076.5
Total Changes	
12. Total net overall change: 9 + 10 + 11	\$ 49,680.7
13. UAL change due to benefit accruals and payments, contributions, and interest	(184,938.2)
14. Net increase/(decrease) in UAL: 12 + 13	\$ (135,257.5)

* Includes loss due to PAF transfer, if applicable

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

SECTION I – BOARD SUMMARY

4. Contributions:

Table I-5 below summarizes the City contribution amounts.

Table I-5 Contributions (\$ thousands)				
Minimum Municipal Obligation ¹				
Estimated FY Payroll ²	\$ 1,984,618		\$ 1,903,359	
Normal Cost (with Expenses)	\$ 203,078	10.23%	\$ 195,225	10.26%
Regular Employee Contributions	(87,679)	4.42%	(83,902)	4.41%
Extra Employee Contributions for Funding ³	<u>(29,169)</u>	1.47%	<u>(25,724)</u>	1.35%
City Normal Cost	\$ 86,230	4.34%	\$ 85,600	4.50%
Amortization Payment	<u>591,962</u>	29.83%	<u>588,284</u>	30.91%
Minimum Municipal Obligation	\$ 678,192	34.17%	\$ 673,884	35.40%
Revenue Recognition Policy ⁴				
Estimated FY Payroll ²	\$ 1,984,618		\$ 1,903,359	
Normal Cost (with Expenses)	\$ 203,078	10.23%	\$ 195,225	10.26%
Regular Employee Contributions	(87,679)	4.42%	(83,902)	4.41%
Extra Employee Contributions for Funding ³	<u>(0)</u>	0.00%	<u>(0)</u>	0.00%
City Normal Cost	\$ 115,399	5.81%	\$ 111,323	5.85%
Amortization Payment	<u>612,031</u>	30.84%	<u>601,655</u>	31.61%
Revenue Recognition Policy	\$ 727,430	36.65%	\$ 712,978	37.46%
City's Funding Policy ⁵				
Estimated FY Payroll ²	\$ 1,984,618		\$ 1,921,217 ⁶	
Normal Cost (with Expenses)	\$ 203,078	10.23%	\$ 196,366	10.22%
Regular Employee Contributions	(87,679)	4.42%	(83,265)	4.33%
Extra Employee Contributions for Funding ³	<u>(29,169)</u>	1.47%	<u>(25,724)</u>	1.34%
City Normal Cost	\$ 86,230	4.34%	\$ 87,378	4.55%
Amortization Payment	<u>697,894</u>	35.17%	<u>727,836</u>	37.88%
City's Funding Policy	\$ 784,124	39.51%	\$ 815,214	42.43%

¹ The MMO does not include Quasi-Agency contributions.

² The estimated payroll is based on total uncapped payroll.

³ Additional tier member contributions under Municipal Plans 67, 87, 10, and 16 and extra member contributions for Police and Fire Plans 87 are specifically dedicated to paying down the unfunded liability and are recognized as employee contributions under MMO and Funding Policy but not under the RRP contribution.

⁴ Revenue Recognition Policy (RRP) is based on the calculation of MMO without including accumulated sales tax revenue and additional member contribution amounts.

⁵ Assuming beginning-of-year payment.

⁶ FY 2022 Payroll for the City's Funding Policy is based upon the 7/1/2021 pay rates and will be finalized when the FYE 2022 payroll is available. All other payroll is estimated based upon the prior year's data used for the actuarial valuation.

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The **Minimum Municipal Obligation** for FYE 2022 measured as of the beginning of the year decreased by 1.23% of payroll, from 35.40% to 34.17%. In dollars, the required beginning of year contribution increased from \$673.9 million to \$678.2 million, a \$4.3 million increase. The increase in the MMO is primarily attributable to the actuarial losses and change in discount rate this year.

The contribution under the **Revenue Recognition Policy** decreased by 0.81% as a percent of payroll, from 37.46% to 36.65% for FYE 2022. The contribution in dollars increased \$14.4 million from \$713.0 million in the prior year to \$727.4 million for FYE 2022. Though the RRP contribution increased in dollars, it decreased as a percent of pay because total payroll increased more than the increase in RRP over the last year. The RRP contribution is higher than the MMO because accumulated sales tax revenue and additional member contributions received are excluded from the assets when determining the RRP contributions.

For Fiscal Year 2022, the **City Funding Policy** contributions decreased by 2.92% of payroll, from 42.43% to 39.51%. In dollars, the contributions under the City's Funding Policy decreased from \$815.2 million to \$784.1 million, a \$31.1 million decrease. Along with changes in assumptions and experience, the decrease in the funding policy is attributable to the expected payment in full of the July 1, 2005 loss base which was amortized over 15 years ending FYE 2021. All contributions for the City's Funding Policy are provided as of the beginning of the year.

In Section IV of this report, we provide more detail on the development of these contributions.

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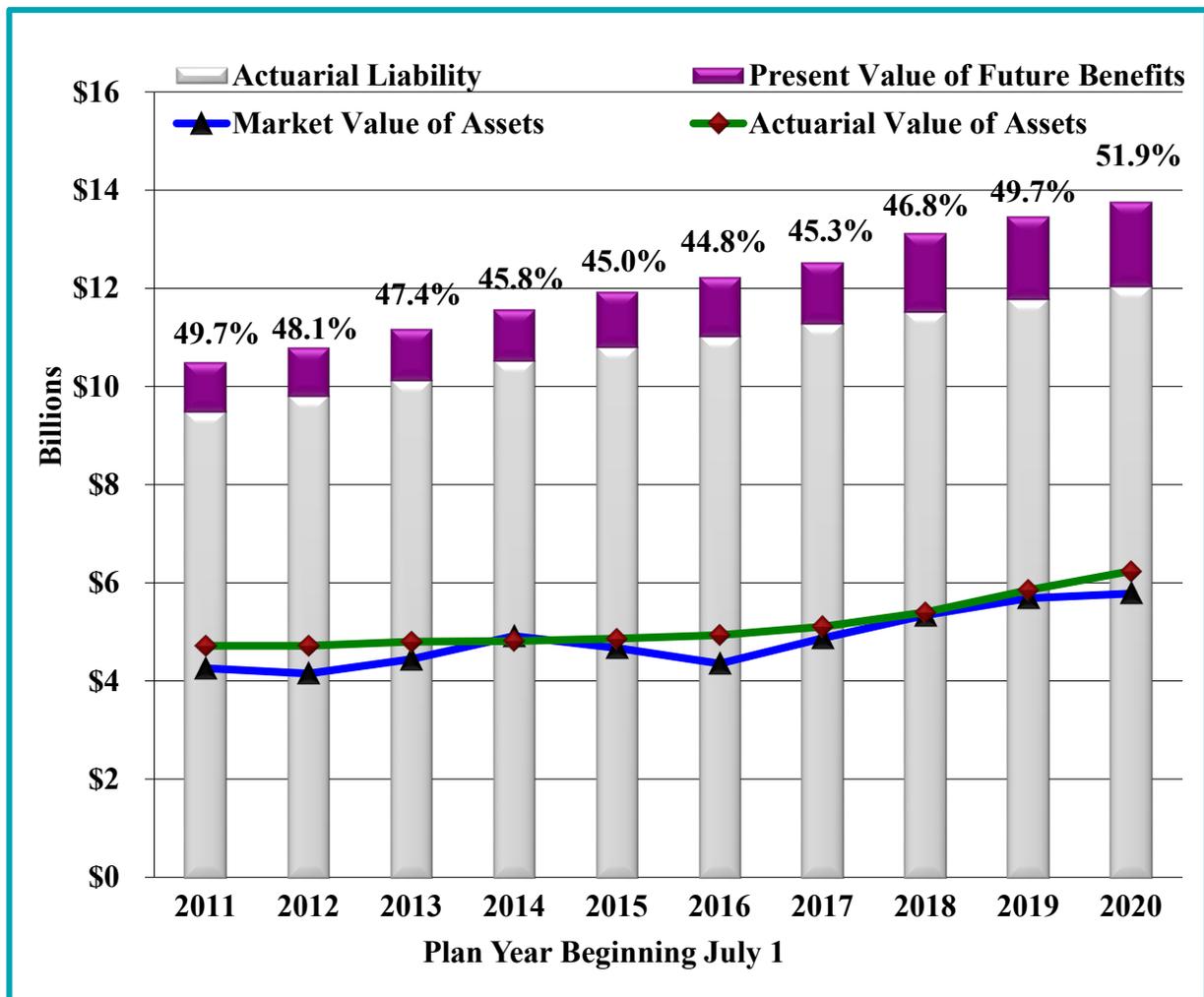
SECTION I – BOARD SUMMARY

C. Historical Trends

Although most of the attention given to the valuation reflects the most recently computed unfunded actuarial liability, funding ratio, and contribution amounts, each valuation is merely a snapshot of the long-term progress of a pension fund. It is important to take a step back from these latest results and view them in the context of the System’s recent history and trends expected into the future. Below, we present a series of graphs which display historical trends for key factors in the valuations of the last 10 years.

Here we present the historical trends for the market and actuarial value of assets compared to the actuarial liabilities and present value of future benefits; we also show the progress of the Retirement System’s funding ratios on an actuarial value of asset basis (provided above each bar) since 2011.

City of Philadelphia Assets* and Liabilities – 2011 to 2020



* Market value of assets includes the PAF, which is not available for funding purposes.

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The System’s funding ratio has remained relatively stable since 2011. It is important to note that the assumed interest rate assumption has been decreased during this period from 8.10% to 7.50% which has lowered the funding ratio but has improved the System’s risk profile. Besides the regular reductions of the interest rate assumption during this period the changes in the ratio are also due to the volatility of the markets. In 2020, the funding ratio increased by 2.2%.

This historic trend emphasizing the relatively low funding status highlights the potential risk of running out of assets to pay benefits. However, as long as the City adheres to the continued policy of contributing at least the Minimum Municipal Obligation this risk will be avoided.

Another observation is that assets have remained relatively flat through 2016. This is a function of the negative cash flow as contributions and investment income have to keep pace with benefit payouts and expenses before the absolute value of assets can grow. However, the steps taken by the City and participants in providing additional contributions to the System has reduced this cash flow risk significantly resulting in a positive net cash flow over the past three years and an increase in assets over the last four years.

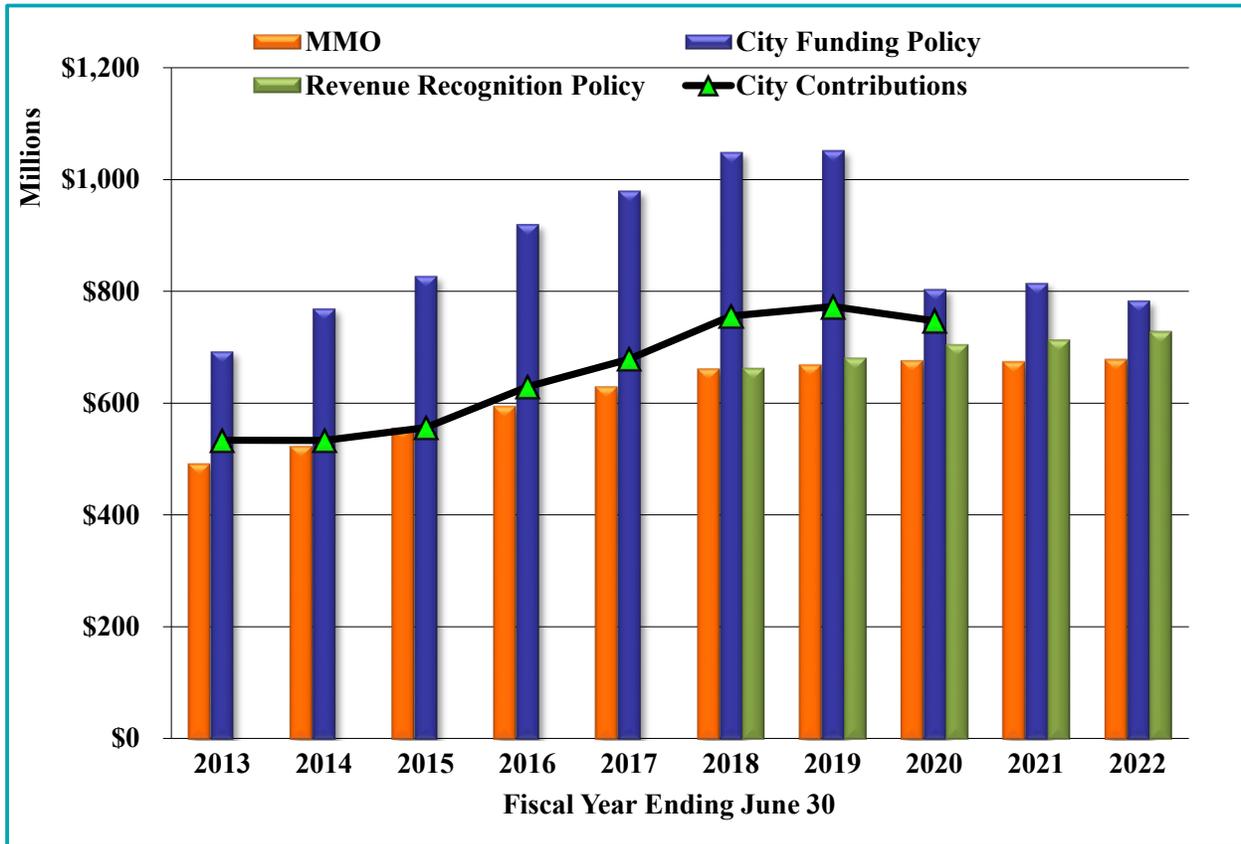
In the chart on the next page, we present historical trends for the Minimum Municipal Obligation (MMO), the contributions under the City’s Funding Policy, the Revenue Recognition Policy (RRP) beginning in 2018, and the actual City contributions made for fiscal years since 2013. Because there is a two-year lag in the determination of the City Funding Policy, RRP and MMO requirements, we show the contributions to date and the estimated amounts for fiscal years 2021 and 2022. City contributions in the amount of \$80 million that were deferred in FYE 2011 were fully paid during FYE 2013. The deferred contributions received during FYE 2013 were included in the asset value as if they were made when due in accordance with special funding provisions under Act 205, and treated as if they are short-term investments and therefore not reflected in the actual City contributions. The City contributions shown in the black line have been higher than the amounts required under the MMO and the RRP (orange and green bars) starting FYE 2016. The City contributions include sales tax revenue amounts which began in FYE 2016, in the amounts of \$52.1 million in FYE 2019 and \$42.7 million in FYE 2020. The City contributions also reflect additional contributions made by the City over the RRP in the amounts of \$39.7 million in FYE 2019 and \$0 in FYE 2020.

The Funding Policy amounts were higher than the MMO because of the City’s decision to fund based on the MMO for a number of years which slowed the funding progress in maintaining the funding policy and resulted in losses under the funding policy due to contribution amounts being lower than what the policy called for. These losses resulted in the increasing gap between the funding policy amount and the MMO. However, with the full payment of the initial funding policy base in FYE 2019, the funding policy has decreased significantly and is closer to the MMO in subsequent years.

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City of Philadelphia Contributions for Fiscal Years 2013-2022



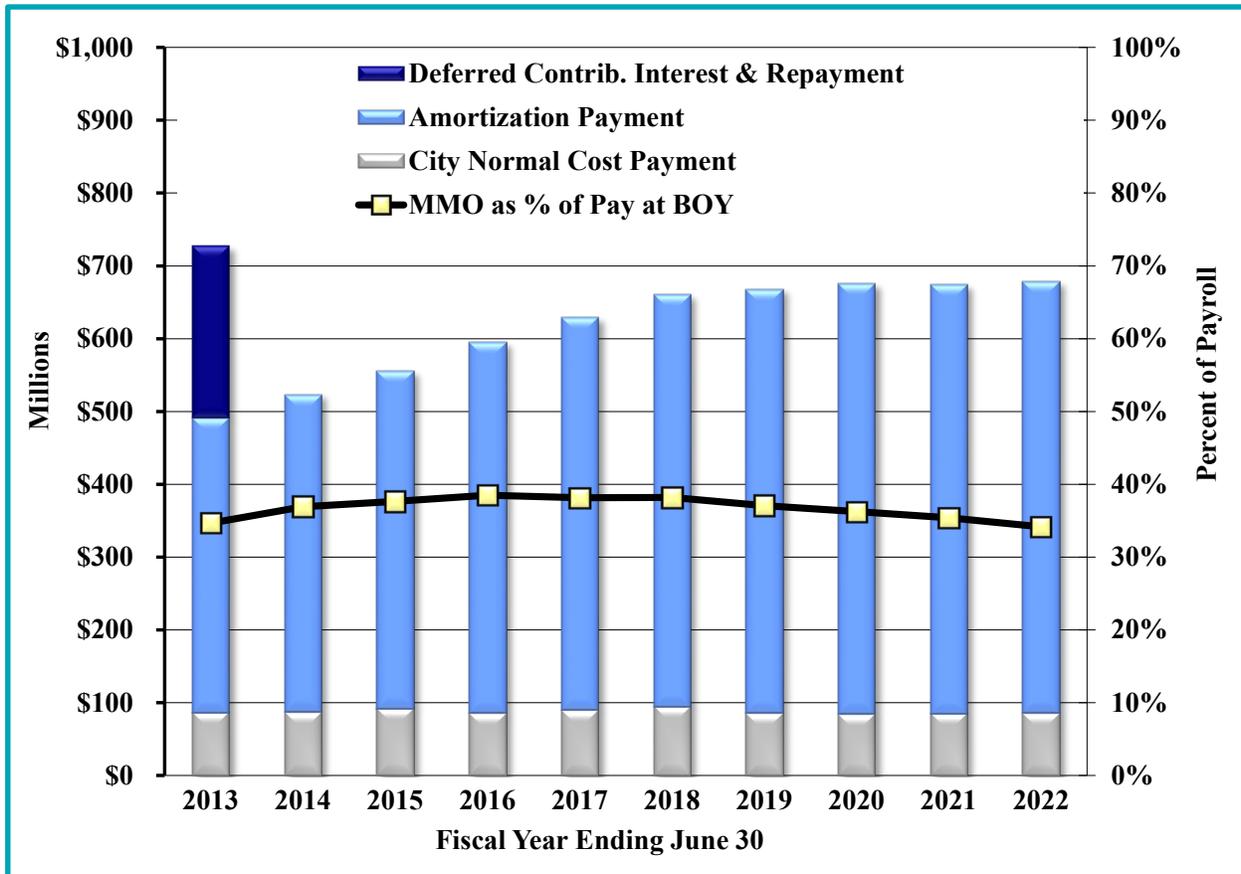
The key trend illustrated in this chart is from FYE 2013 through FYE 2017 all measures of contributions were increasing due in part to ten-year smoothing of historical investment losses and assumption changes that resulted in increases in UAL. Starting with FYE 2018 the MMO has remained relatively flat. The RRP is approximately \$49.2 million higher than the MMO in FYE 2022. In future years, as the City continues to pay the RRP, and as tax revenue and tiered and additional member contributions paid in excess of the MMO accumulate, the gap between the MMO and the RRP will continue to grow.

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The chart below shows the historical amortization payments under the MMO, City normal cost payments, and the deferred contribution interest and principal repayment. The City normal cost payments include an explicit administrative expense assumption. The black line which goes with the axis on the right shows the beginning-of-year MMO (normal cost plus amortization payments) as a percentage of payroll.

MMO Contributions by Source for Fiscal Years 2013-2022



The amortization payment to pay off the unfunded actuarial liability has increased from \$405 million for FYE 2013 to \$592 million for FYE 2022. Up until FYE 2020, the amortization amounts have increased steadily due to the changes in assumptions that have had a net result of increasing liabilities and continued recognition of the 2008 investment losses. The amortization amount has remained relatively flat since FYE 2020 primarily due to the 2008 investment losses being fully recognized and the actual City contributions recently being higher than the MMO.

The total MMO as a percentage of payroll (as shown by the line and on the right hand axis) was about 34.7% in FYE 2013, then increased gradually as the investment losses of FYE 2008 and 2009 were still being recognized until FYE 2021. It has been decreasing over the last four years to the current level of approximately 34.2% in FYE 2022 reflecting the additional contributions by the City.

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D. Projected Financial Trends

Our analysis of the City of Philadelphia Municipal Retirement System’s projected financial trends is an important part of this valuation. In this section, we present our assessment of the implications of the July 1, 2020 valuation results on the future outlook in terms of benefit security (assets over liabilities) and the City’s expected cost progression.

In the charts that follow, we project the Retirement System’s assets and liabilities, and the City’s contributions. Our illustrations assume the provisions of Act 205 as amended by Act 44 remain in force during the projection period. The projections are based on the assumptions of the July 1, 2020 valuation.

All projections also reflect future new hires in all Municipal groups will participate in the Stacked Hybrid Plan - Plan 16. Stacked plan benefits and contributions are based on pay up to a cap of \$65,000 resulting in lower future costs for this group.

All projections include expected additional funds from sales tax revenue and additional member contributions for current and future Municipal members and members of 1987 Plans Police and Fire. The amounts of expected sales tax were provided to us by the City (as shown in the table below).

The treatment of the sales tax and tiered/additional member contributions varies based on whether or not these amounts are used to reduce future City costs or are dedicated to pay down the unfunded liability. Typically, as additional contributions are received, the following years MMOs are reduced as a function of the additional assets. However, under the RRP, the sales tax revenue and additional member contributions are dedicated to fund the unfunded liability without reducing the City’s contribution obligation. Tier and additional member contributions do not offset the City’s portion of the normal cost under RRP. The additional revenue is contributed in addition to the City contributions based on adjusted assets under the RRP. Charts shown based on the RRP funding methodology set these assets aside in a notional account which is deducted from actuarial asset value in determining the contributions under the RRP. We show three sets of projections for contributions based on MMO calculated in accordance with Act 205 compared to RRP and finally the Funding Policy.

The following chart reflects the expected projected sales tax revenue provided to us by the City for our analysis.

Fiscal Year Ending	2021	2022	2023	2024	2025
Expected Sales Tax	\$ 42,165,674	\$ 48,765,816	\$ 55,448,943	\$ 62,519,535	\$ 70,057,592
Fiscal Year Ending	2026	2027	2028	2029	2030
Expected Sales Tax	\$ 72,053,197	\$ 76,854,527	\$ 81,775,890	\$ 86,820,287	\$ 91,990,795
Fiscal Year Ending	2031	2032	2033	2034	2035
Expected Sales Tax	\$ 97,290,564	\$ 102,722,829	\$ 108,290,899	\$ 113,998,172	\$ 119,848,126
Fiscal Year Ending	2036	2037	2038	2039	2040
Expected Sales Tax	\$ 125,844,329	\$ 131,990,437	\$ 138,290,198	\$ 144,747,453	\$ 151,366,140

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SECTION I – BOARD SUMMARY

The following baseline projections assume all actuarial assumptions are met. We show three sets of projections for each of the three funding policies. For each set of projections, we show two graphs covering the historical period from 2010 to 2020 and the projected period from 2021 to 2040 assuming all assumptions are met.

The top graph shows asset measures (green and blue lines) compared to liabilities (gray bars). At the top of the graph is the progression of the System’s funding ratio which compares the actuarial value of assets (blue lines) to the actuarial liability (gray bars). The bars for the historical period are lighter shaded.

The bottom graph shows the MMO (red bars), expected sales tax revenue (blue bars) and expected tiered and member contributions (black bars). The blue line shows the Funding Policy and the green line shows the expected City contributions under the RRP excluding the sales tax revenue which is shown separately. In comparing the RRP to MMO, the green line should be compared to the top of the red bars. Prior to 2016, the RRP is equal to the MMO. The impact of the additional revenue and member contributions is that MMO decreases each year as actual contributions are in excess of the MMO.

We show stress testing to illustrate the impact of varying returns on the System in Section II –Assessment and Disclosure of Risk of this report. We do this because the System’s asset return will never be level from year to year and the System must anticipate the implications of asset return volatility to the funded status and contribution requirements.

In reviewing each of these projections, it is the future trends, not necessarily the actual values that are important to observe in consideration of the risks of the System and the potential volatility of future funding ratios and City contribution levels.

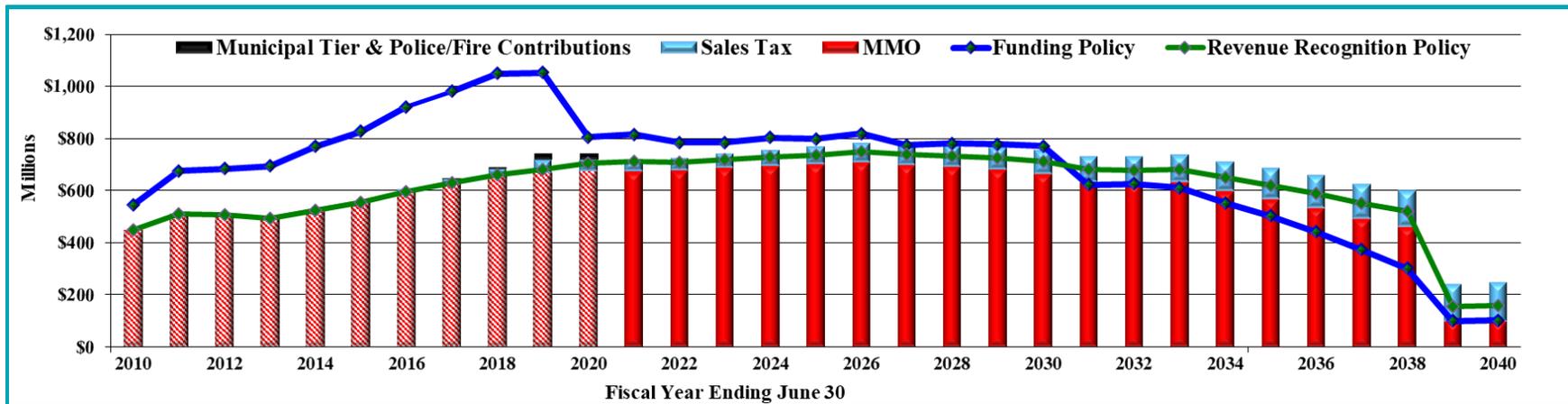
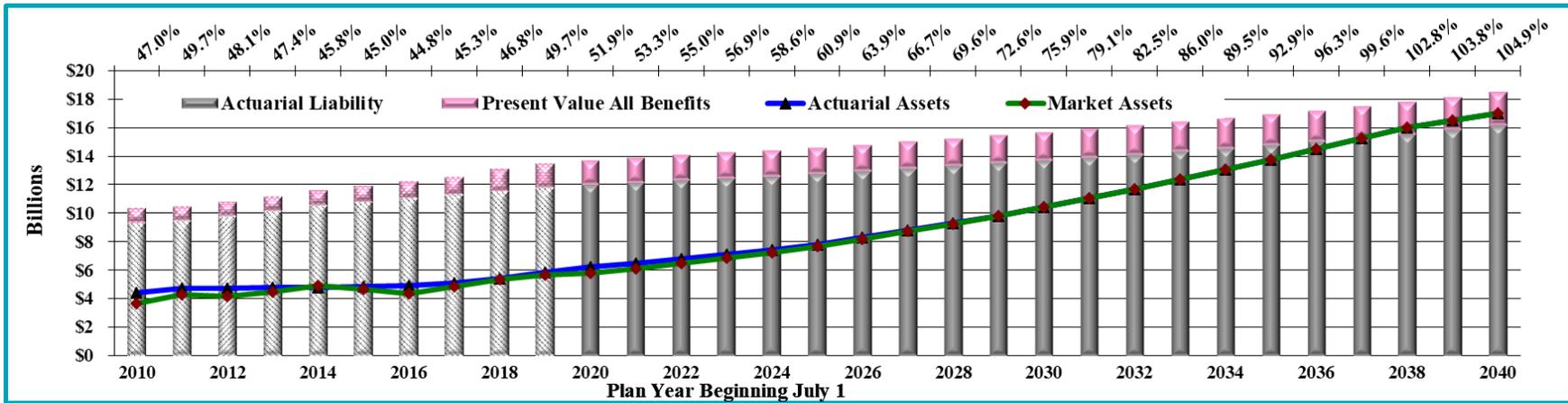
We note that when the System becomes 70% funded or greater, the unfunded liability may be amortized on a rolling 10-year basis. We have not shown the implications of this alternative funding method provided for in Act 205.

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SECTION I – BOARD SUMMARY

Baseline Projection Set 1: City Makes Contributions based on MMO

If the City was to contribute based on the MMO the System is expected to reach 80% in 2032 and 100% funded by 2038. Funding at the MMO level with the current ten-year asset smoothing method and the 2009, 30-year fresh start amortization method on a level-dollar basis, would result in a relatively slow improvement of funding.



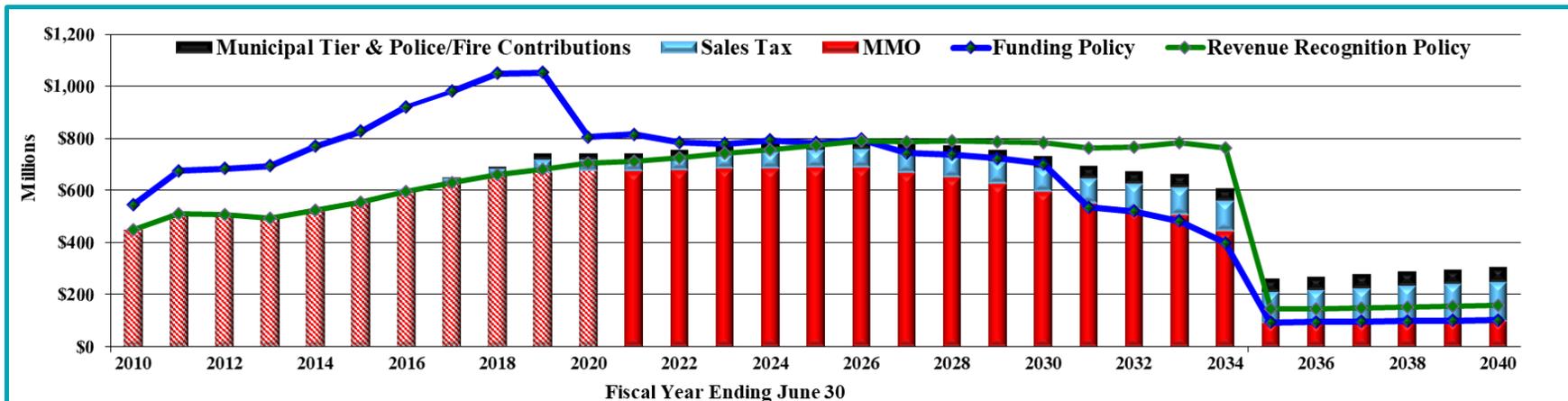
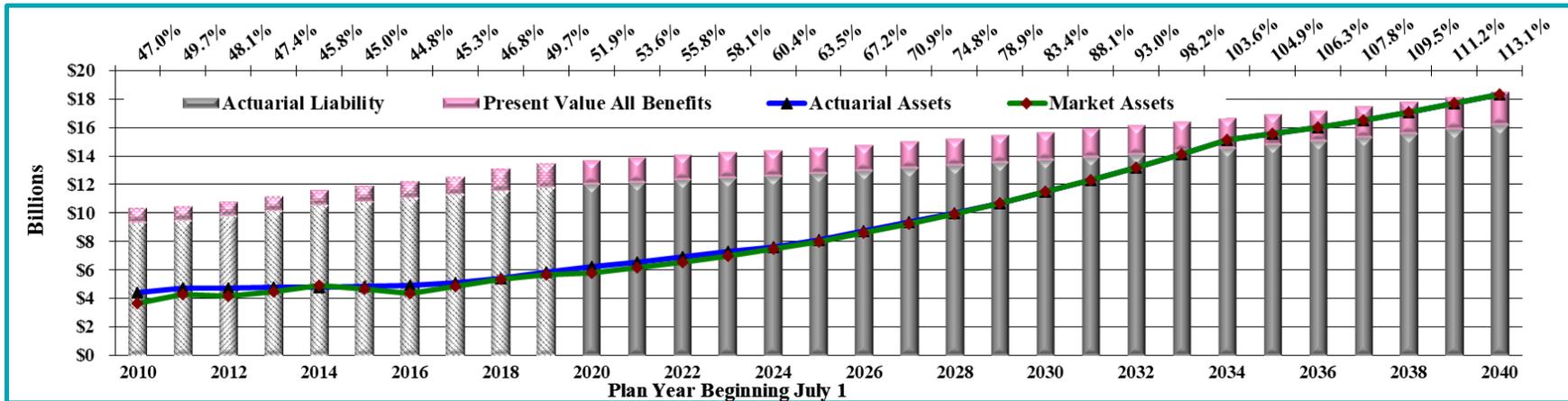
The decrease in FYE 2020 for the City’s Funding Policy (blue line) is due to the expected payment in full of the initial unfunded liability.

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Baseline Projection Set 2: City Makes Contributions based on RRP

This chart illustrates the impact on the funded status when the additional revenue sources are used to pay down the UAL under the RRP as opposed to reducing future costs. The System is projected to be 80% funded by 2030 and 100% funded by 2034, four years earlier than under the MMO projections. By the end of the projection period, the System is expected to be funded at 113.1% compared to 104.9% when MMO contributions are made.



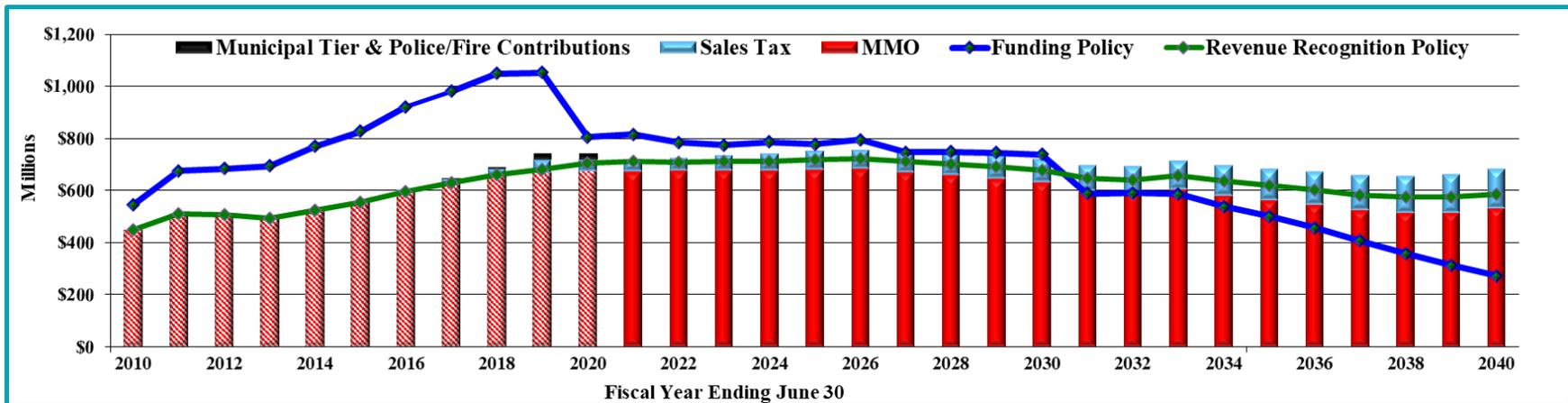
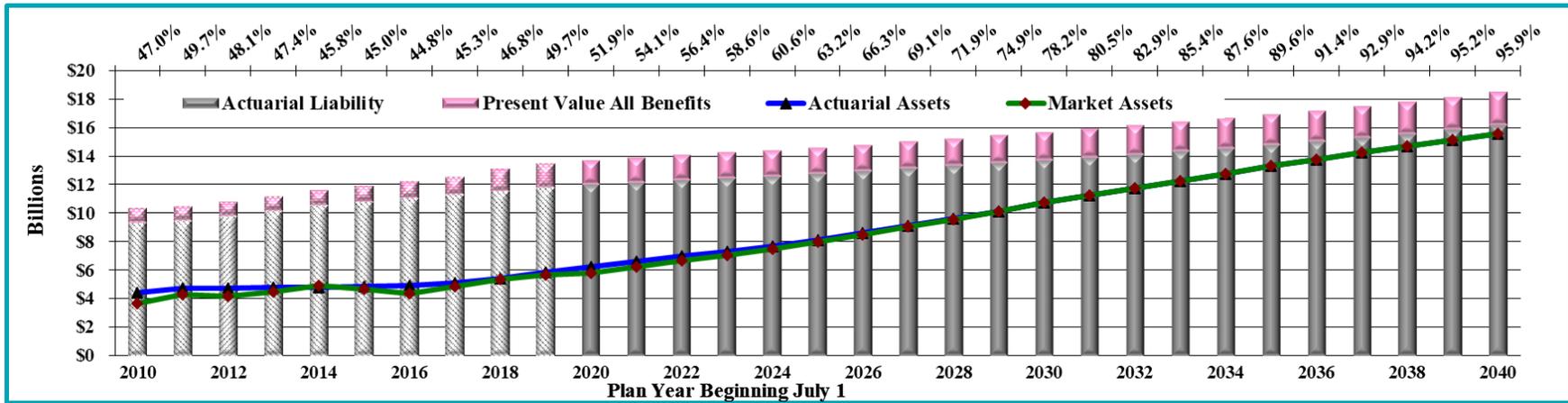
Sales tax revenue and additional member contributions are not included in the green line which shows the RRP contributions. The RRP contribution is higher than the MMO until the System reaches 100% funded in FYE 2035 at which time it drops to the normal cost rate.

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Baseline Projection Set 3: City Makes Contributions based on the Funding Policy

If the City’s Funding Policy is contributed every year going forward. The System is projected to be 80% funded by 2031 but does not attain the 100% funded ratio over protection period, only achieving 95.9% funded ratio by 2040. In this projection, we have assumed that the City may use sales tax revenue and additional member contributions to meet the requirements of the Funding Policy. Over time the contributions under the Funding Policy are lower than the RRP, resulting in a lower funded ratio by the end of the projection period.



The funding policy contributions were significantly larger through FYE 2019, and declined more rapidly after the initial funded base was fully amortized in FYE 2020.

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SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may be significantly different. This section of the report is intended to identify the primary risks to the plan, provide some background information about those risks, and provide an assessment of those risks.

Identification of Risks

The fundamental risk to the System is that the contributions needed to pay the benefits become unaffordable. While there are a number of factors that could lead to contribution amounts becoming unaffordable, we believe the primary risks are:

- Investment risk,
- Longevity and other demographic risks, and
- Assumption change risk.

Investment Risk is the potential for investment returns to be different than expected. Lower investment returns than anticipated will increase the unfunded actuarial liability necessitating higher contributions in the future unless there are other gains that offset these investment losses. The potential volatility of future investment returns is determined by the System's asset allocation and the affordability of the investment risk is determined by the amount of assets invested relative to the size of the plan sponsor or other contribution base.

Longevity and other demographic risks are the potential for mortality or other demographic experience to be different than expected. Our mortality assumption has consistently used a mortality improvement scale to project rates past the valuation date to reflect projected improvements in mortality over time. In addition, there is the requirement to measure actual experience against the assumptions every four years. Currently, the System pays out over \$800 million in benefit payments each year which is a cash flow risk as members continue to live longer. Generally, longevity and other demographic risks emerge slowly over time.

Assumption change risk is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. For example, declines in interest rates over the last three decades resulted recently in lower investment returns for fixed income investments, necessitating either a change in investment policy, a reduction in discount rate, or some combination of the two. Assumption change risk is an extension of the other risks identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in environment when the current assumption is no longer reasonable.

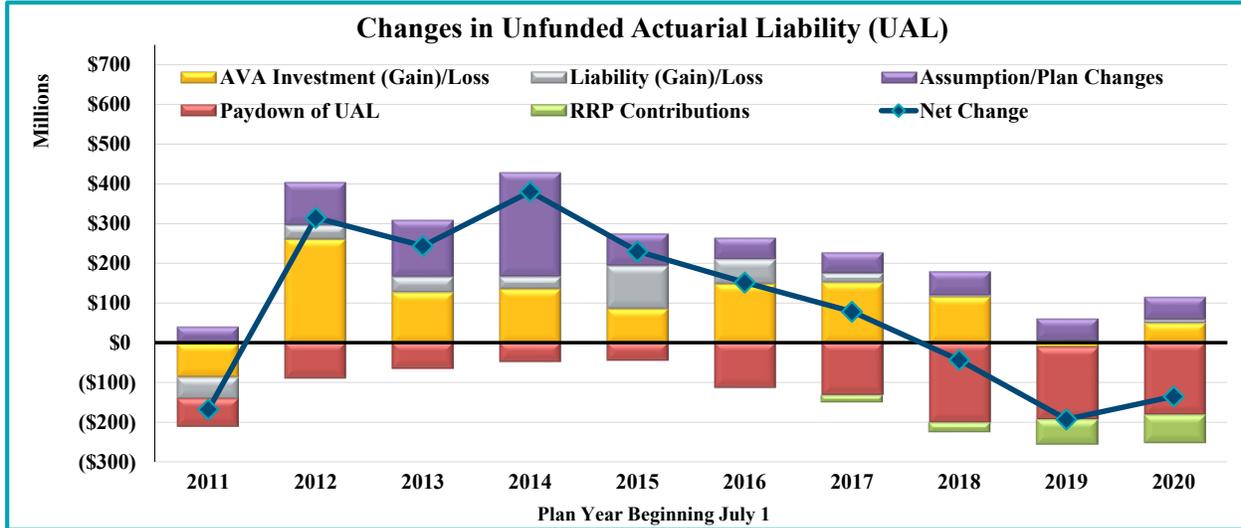
The chart below shows the components of changes in the Unfunded Actuarial Liability (UAL) for the System over the last 10 years, including investment gains and losses on the Actuarial Value of Assets, liability gains and losses, assumption and benefit changes, paying down of the UAL, and RRP contributions in excess of the MMO. The net UAL change is shown by the dark blue line. Table II-1 below the chart summarizes the changes in the UAL over the last 10 years.

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These totals support our identification of investment returns, longevity, and assumption changes as the primary risks to the System.

Historical Changes in UAL 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Discount Rate	8.10%	7.95%	7.85%	7.80%	7.75%	7.70%	7.65%	7.60%	7.55%	7.50%	
Source											
AVA Investment (G)/L	\$ (84.4)	\$ 260.7	\$ 127.7	\$ 136.5	\$ 87.0	\$ 148.8	\$ 152.0	\$ 117.0	\$ (10.9)	\$ 50.7	\$ 985.1
Liability (G)/L	(54.3)	35.9	39.3	31.0	107.9	62.1	23.9	3.6	6.4	8.9	264.7
Assumptions/Plan Changes ¹	42.3	108.5	143.1	262.2	81.0	54.7	52.4	60.3	56.7	57.1	918.3
Paydown of UAL ²	(71.4)	(90.4)	(66.3)	(49.5)	(45.8)	(113.8)	(130.9)	(199.4)	(180.5)	(180.3)	(1,128.3)
RRP Funding Policy ³	0.0	0.0	0.0	0.0	0.0	0.0	(19.2)	(25.1)	(64.6)	(71.6)	(180.5)
Total UAL Change	\$ (167.8)	\$ 314.7	\$ 243.8	\$ 380.2	\$ 230.1	\$ 151.8	\$ 78.2	\$ (43.6)	\$ (192.9)	\$ (135.2)	\$ 859.3

¹ Plan changes include \$3.5 million increase in 2016 and \$1.0 million increase in 2019.

² UAL change due to benefit accruals and payments, contributions, timing, and interest.

³ UAL change due to RRP contributions in excess of the MMO contributions and sales tax revenue.

On a smoothed asset basis, the investment gains and losses (gold bars) from 2011 to 2020 reflect material investment losses driven by the market decline of 2008 and 2009, which was spread over the ten successive years. Over the 10-year period, investment losses have added approximately \$985.1 million to the UAL.

On the liability side (gray bars), the System has experienced mostly losses, however smaller in magnitude compared to the assets, increasing the UAL by approximately \$264.7 million over the 10-year period.

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Assumption and plan changes (purple bars) over the last 10 years have increased the UAL by about \$918.3 million. As a note, the two plan changes during the period occurred in 2016 and 2019 which increased the UAL by about \$3.5 million and \$1.0 million, respectively. The significant assumption changes have included reductions in the discount rate beginning with 8.15% in 2010 decreased to 8.10% in 2011 included with the 2011 Assumption/Plan Changes, down to 7.50% in 2020, as well as experience studies in 2014 and 2018. Investment return changes reflect a downward revision to the estimate of future investment earnings and ultimately costs will be determined by actual investment earnings. With the continued low-interest rate environment, we are continuing to see investment consultants reduce their capital market and underlying inflation assumptions. As a result, future expectations of investment returns may continue to decline necessitating further reductions in the discount rate.

In addition, increases in UAL due to the experience studies have been driven by decreasing mortality rates and projecting mortality improvement. This accounts for members living longer and the longevity risk for the System.

Each year, the UAL is expected to decrease due to paying down of the UAL from the contributions coming into the System. Changes due to paying down the UAL (red bars), related to benefit accruals and payments, actual contributions including contributions in excess of RRP, and timing, have decreased the UAL by about \$1,128.3 million over the last 10 years.

Finally, starting in 2016, the City has started contributing sales tax and higher amounts under the RRP in comparison to MMO. In the last four years, RRP contributions (green bars) in excess of the MMO contributions have decreased the UAL by about \$180.5 million. In future years, as the tax revenue and tiered/additional member contributions paid in excess of the MMO accumulate, this amount will continue to increase.

Plan Maturity Measures

The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of the plan compared to other plans and how the maturity has changed over time.

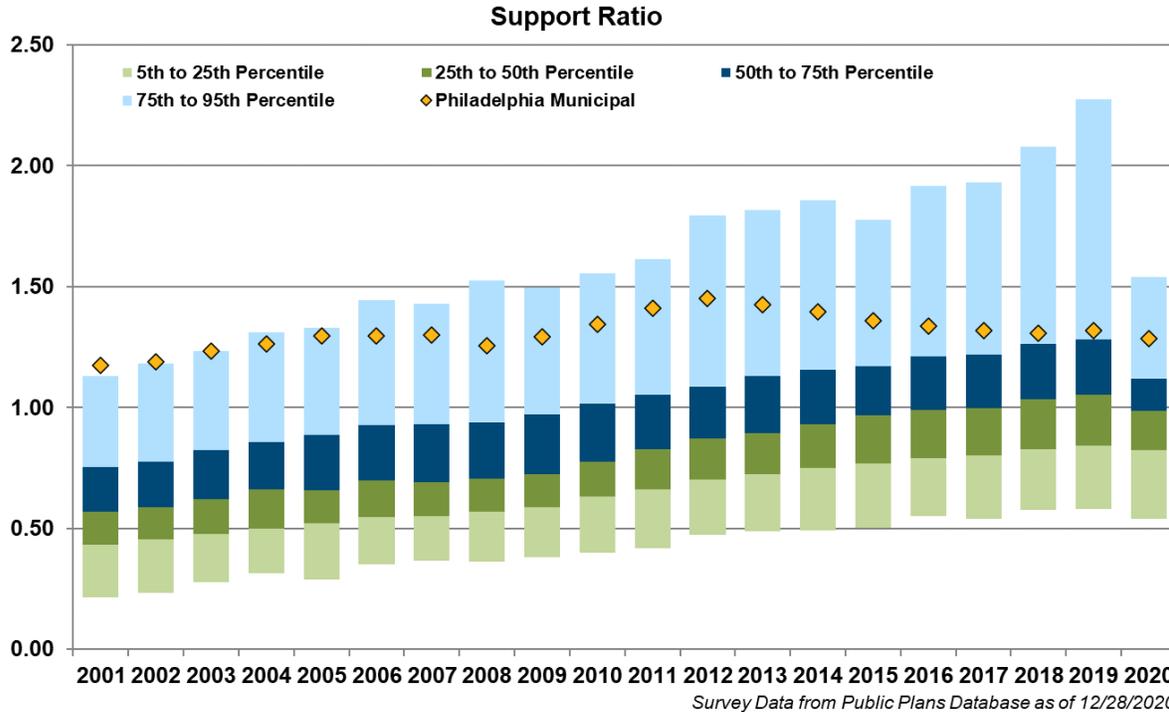
Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic - the larger the plan assets are compared to the contribution or revenue base that supports it; the more sensitive the System will be to risk. The measures below have been selected as the most important in understanding the primary risks identified for the System.

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Inactives per Active (Support Ratio)

One simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. We refer to this ratio as the *support ratio*. The revenue base supporting the System is usually proportional to the number of active members, so a relatively high number of inactives compared to actives indicate a larger plan relative to its revenue base as well.



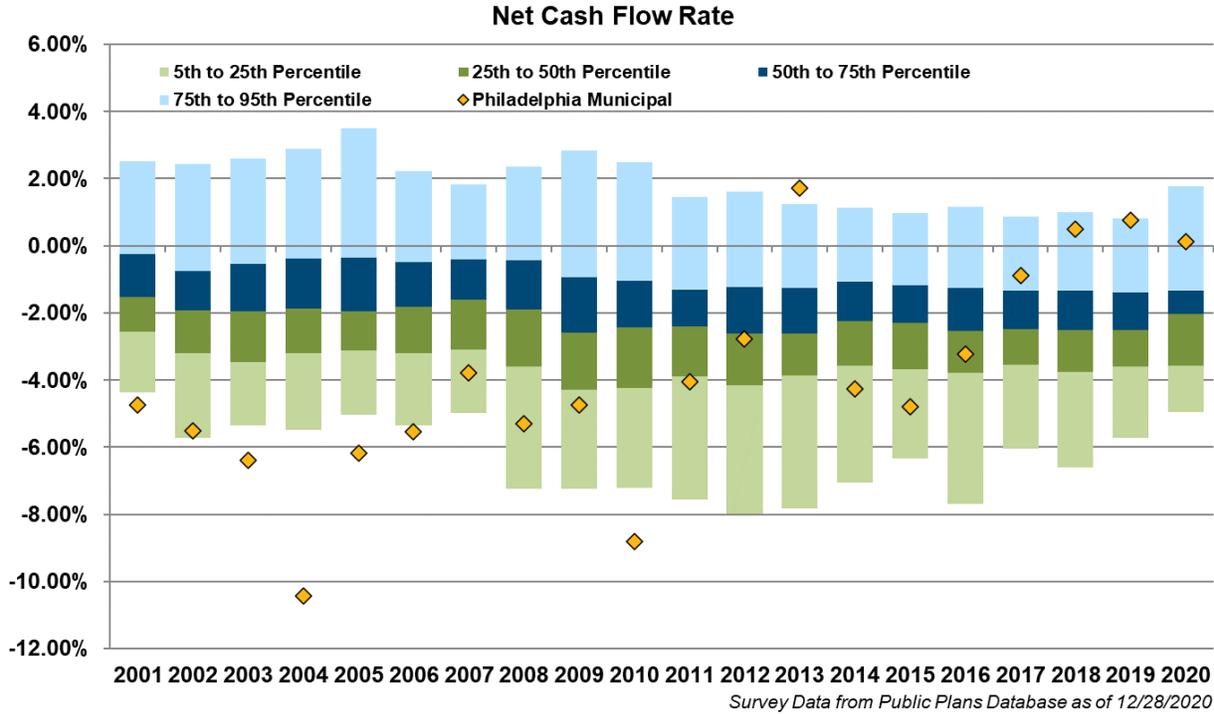
The chart above shows the distribution from the 5th to 95th percentile of support ratios for the plans in the Public Plans Database. The gold diamond shows how the System compares to other plans in the database. What this shows is that the System was already in a relatively mature status in 2001 while the other systems over this historic period grew more mature resulting in the System actually becoming more the norm. So as the average support ratio for other public plans has gradually increased over time, the support ratio for the System has been decreasing since 2012 and currently has a similar support ratio in 2020 as compared to 2001.

Net Cash Flow

The net cash flow of the System as a percentage of the beginning of year assets indicates the sensitivity of the plan to short-term investment returns. Net cash flow is equal to contributions less benefit payments and administrative expenses. Mature plans can have large amounts of benefit payments compared to contributions, particularly if they are well funded. Investment losses in the short-term are compounded by the net withdrawal from the plan leaving a smaller asset base to try to recover from the investment losses. Large negative cash flows can also create liquidity issues.

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The chart above shows the distribution from the 5th to 95th percentile of net cash flow for the plans in the Public Plans Database. The gold diamond shows how the System compares to other plans in the database. Up until 2006, the System was consistently below the 5th percentile compared to the database of other public plans in terms of negative cash flow as a percentage of assets. In 2004, the net cash flow decreased down to -10.2% due to a PAF distribution. The decrease in 2010 was a result of the deferred contributions which were subsequently repaid in 2013, causing a positive net cash flow for that year. The steps taken by the City and participants in providing additional contributions to the System has reduced this cash flow risk significantly. The net cash flow has been increasing since 2015 and since 2018 there has been positive net cash flow which would put the System on the other side of the spectrum in the top portion of the 75th to 95th percentile.

Assessing Costs and Risks

The fundamental risk to the System is that the contributions needed to fund the benefits become unaffordable. Assessing this risk, however, is complex because there is no bright line of what is unaffordable and the contribution amounts themselves are affected not just by the experience of the System, but also by the interaction of that experience and decisions by the Board related to assumptions, asset smoothing methods, and amortization periods.

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SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Investment Risk – Deterministic Scenarios for Stress Testing

This section illustrates stress testing of the investment return assumption and is an extension of the baseline results provided in the baseline projections in the Summary section. Under the baseline results, we assumed the 7.50% investment return assumption each year beginning July 1, 2020.

For stress testing purposes, we developed six hypothetical scenarios to illustrate the impact actual investment returns may have on future funded status and contribution rates. The scenarios are balanced between positive and negative scenarios and are based on a normal distribution of one and five year expected returns as shown in the table below using the 10-year capital market assumptions from the System’s investment consultant based on the September 30, 2020 analysis (geometric return of 7.21%, standard deviation of 10.69%). The 7.21% return is a result of the extremely low interest rates at the time. It is expected to rise as rates move higher (consistent with what has happened in 2021 to date). Going forward, the System’s investment consultant continues to believe that 7.50% is still appropriate for the long-term expected rate of return for the portfolio.

Distribution of Expected Average Annual Returns		
Percentile	1 Year	5 Year
5%	-10.4%	-0.7%
25%	0.0%	4.0%
50%	7.2%	7.2%
75%	14.4%	10.4%
95%	24.8%	15.1%

The scenarios include: a one-year shock using the 5th and 95th percentile returns for one year; a 5-year moderate scenario using the 25th and 75th percentile returns for five years; and a 5-year significant scenario using the 5th and 95th percentile returns for five years. A two-standard deviation event may seem like a very remote possibility, but the risk actually accumulates from year to year. The table below summarizes the theoretical scenarios.

FYE	Theoretical Scenarios					
	1-Yr Shock		5-Yr Moderate		5-Yr Significant	
	Neg	Pos	Neg	Pos	Neg	Pos
2020	-10.4%	24.8%	4.0%	10.4%	-0.7%	15.1%
2021	7.50%	7.50%	4.0%	10.4%	-0.7%	15.1%
2022	7.50%	7.50%	4.0%	10.4%	-0.7%	15.1%
2023	7.50%	7.50%	4.0%	10.4%	-0.7%	15.1%
2024	7.50%	7.50%	4.0%	10.4%	-0.7%	15.1%
2025+	7.50%	7.50%	7.50%	7.50%	7.50%	7.50%

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The charts on the following pages show the projections over the next 20 years under each of these theoretical scenarios assuming the **City makes contributions on the RRP basis**. We show the sales tax revenue and the City’s RRP contributions separately. For each scenario we show two charts.

The top chart shows asset measures (green and blue lines) compared to liabilities (gray bars). At the top of each chart is the progression of the System’s funding ratio which compares the actuarial value of assets (blue lines) to the actuarial liability (gray bars).

Under the baseline RRP scenario assuming a 7.50% return assumption each and every year from the prior section, the System achieved fully funded by 2034. The stress testing of investment return expectations reveals insight from these charts as to how varying investment returns impact the System’s funding ratio.

It is worth noting the 10-year asset valuation method has significant influence on the smoothing of assets against market value volatility as well as the funding progress. A single year or a couple of years of lower than expected returns can delay the System from becoming fully funded. While some of these losses are made up through required increased contribution payments, these scenarios also demonstrate the implications of negative cash flow.

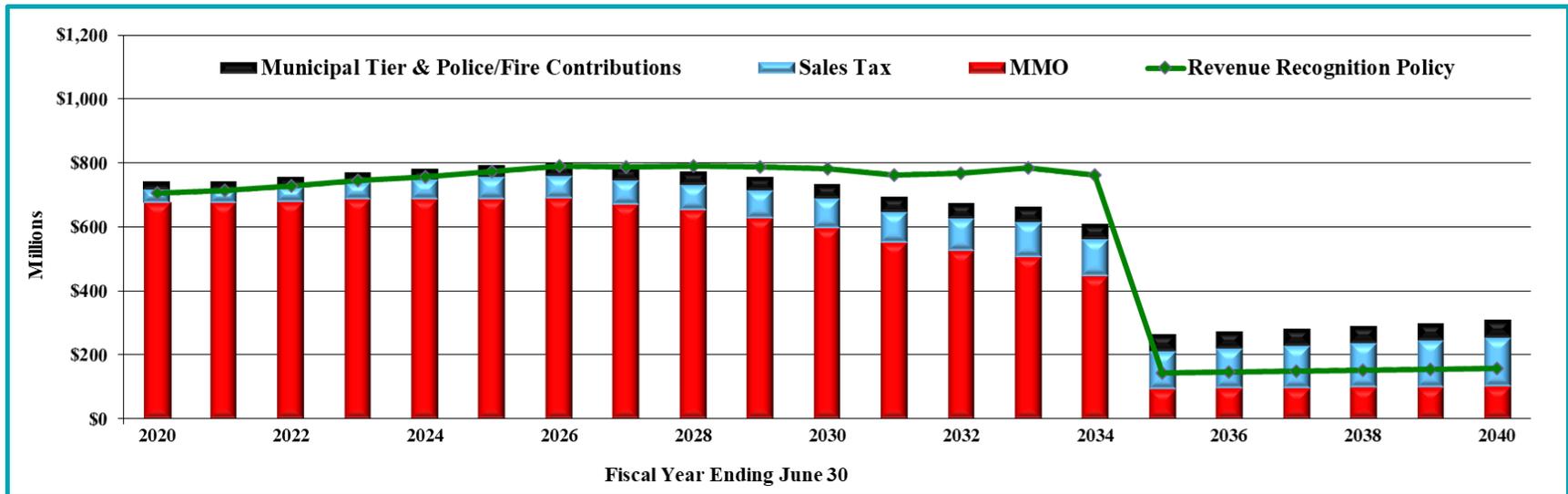
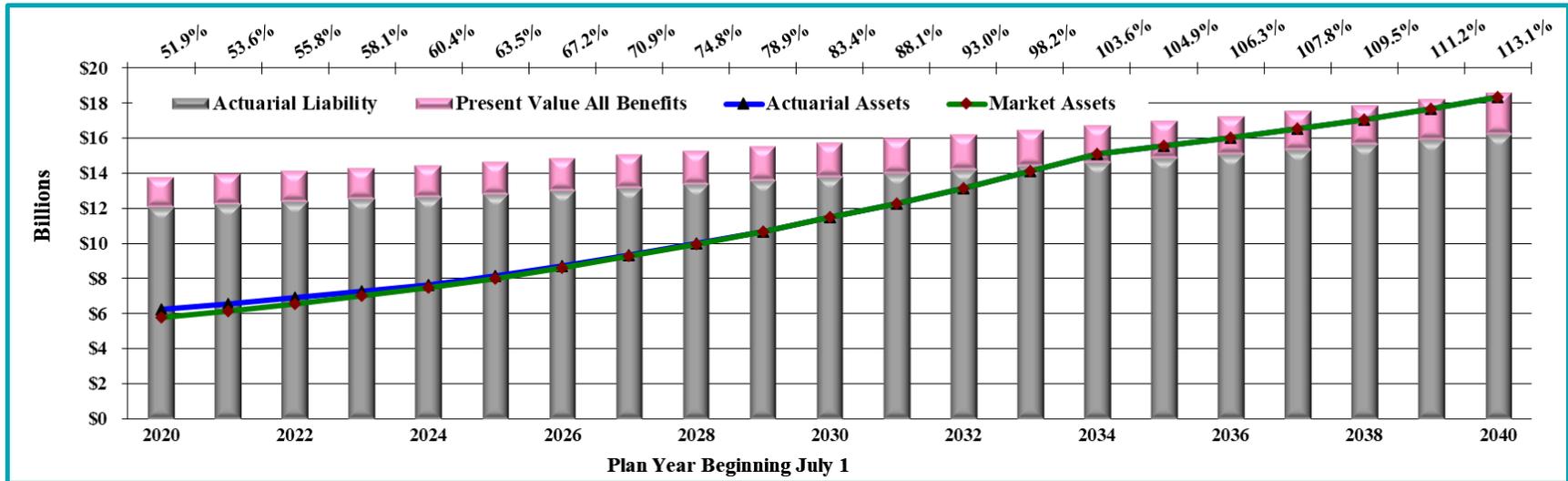
When a mature system pays out more than it receives in a year and returns are below the assumption, the assets that get paid out are no longer in the system during subsequent years of market recovery. So a system with significant negative cash flow coupled with investment return volatility will grow at a slower rate than the investment return assumption. While the net cash flow has been negative historically, it has been positive for three years now and expected to be around zero in the near future under baseline assumptions mitigating much of this risk.

The bottom chart shows the MMO (red bars), expected sales tax revenue (blue bars) and expected tiered and member contributions (black bars). The green line shows the expected City contributions under the RRP excluding the sales tax revenue so the sales tax revenue and additional member contributions are shown separately. The dashed green line represents the expected RRP under the baseline projections to facilitate the comparison between the particular scenario and the baseline projections assuming all assumptions are met.

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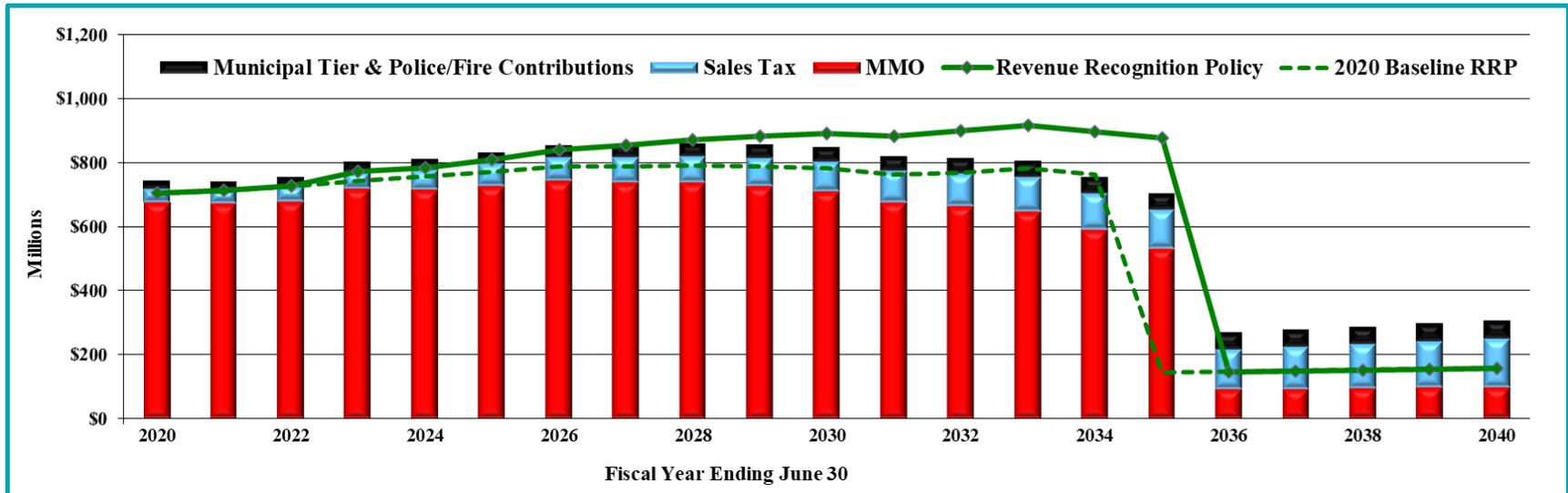
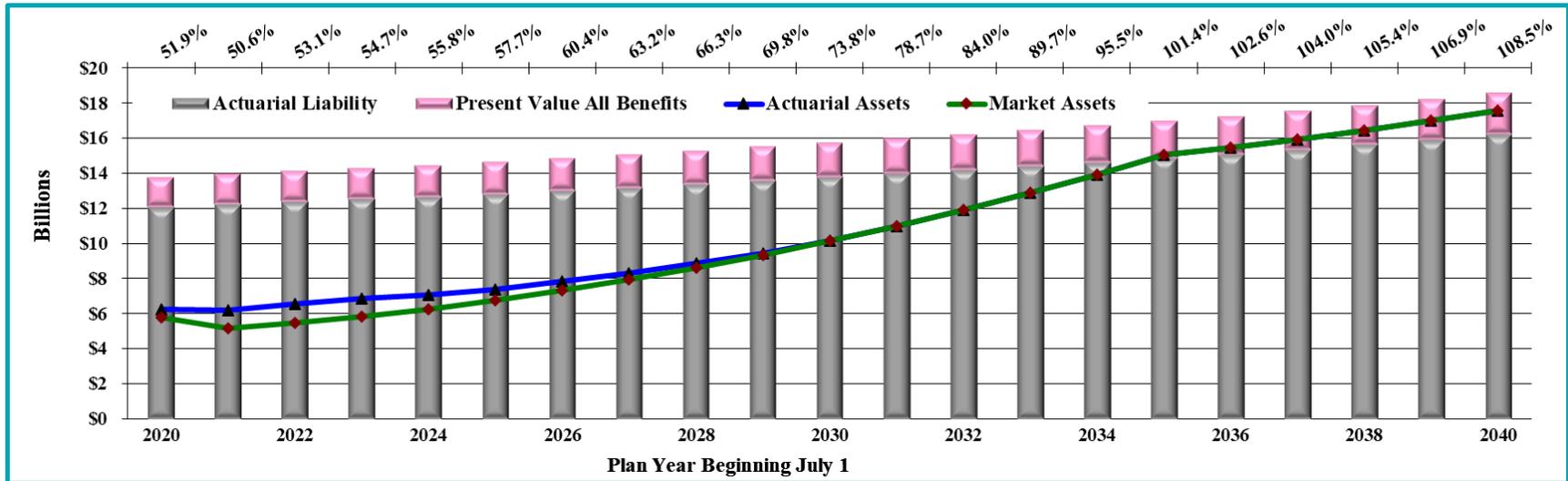
Baseline Scenario: 7.50% return for all years based on RRP contributions



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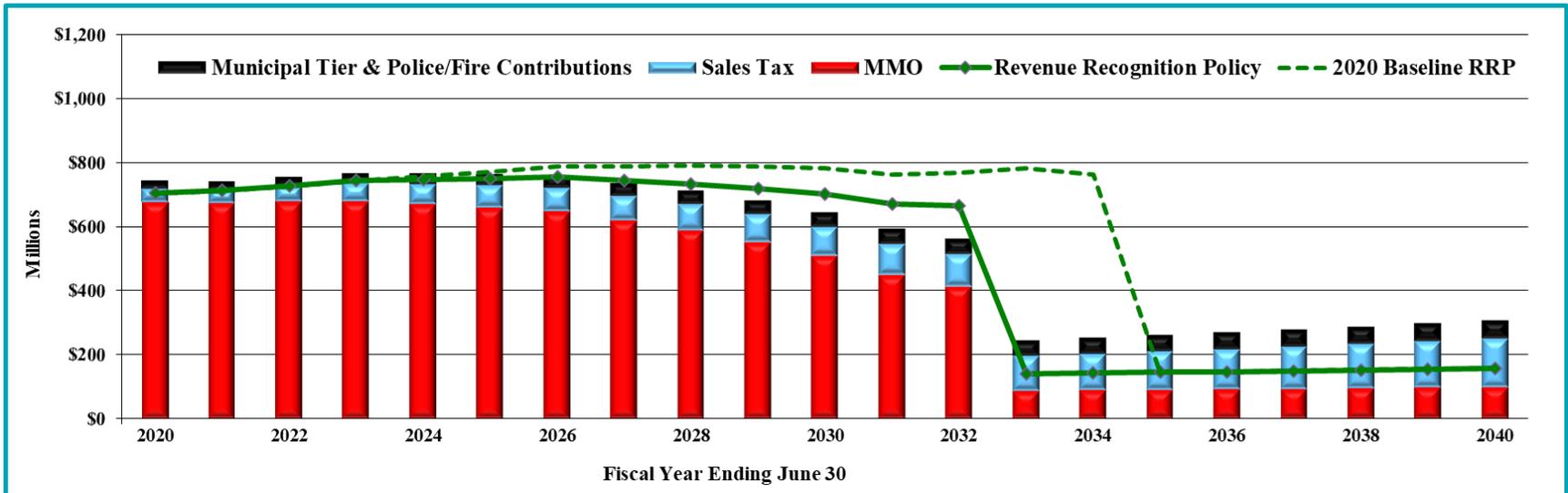
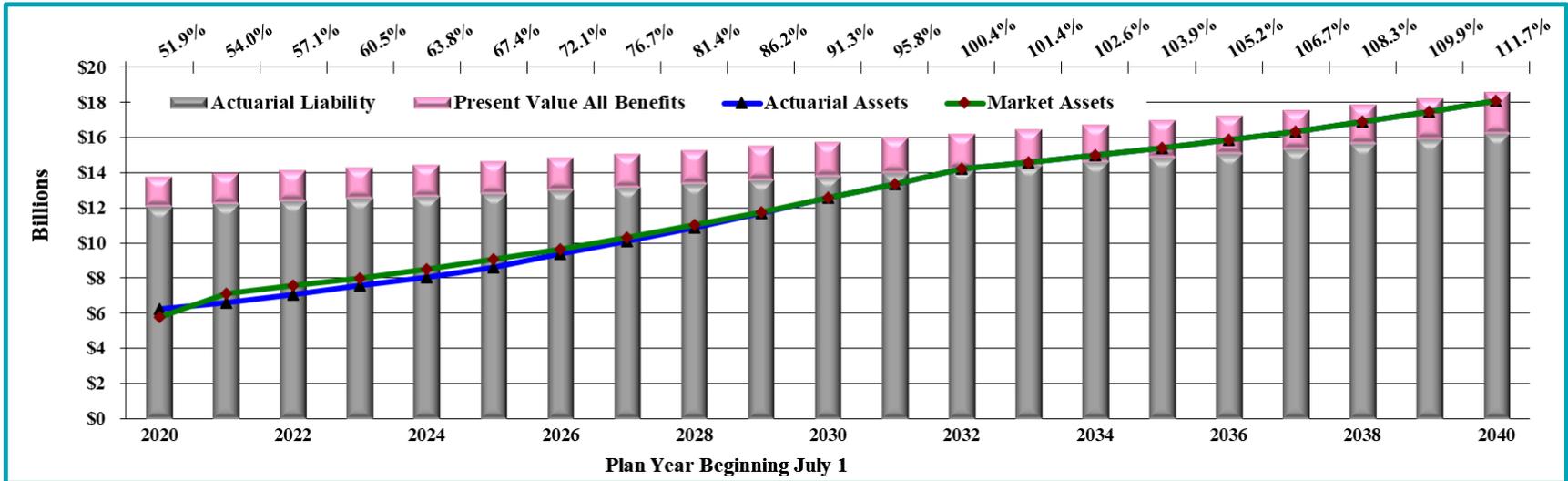
One-Year Negative Shock Scenario: -10.4% return FYE 2021, 7.50% after



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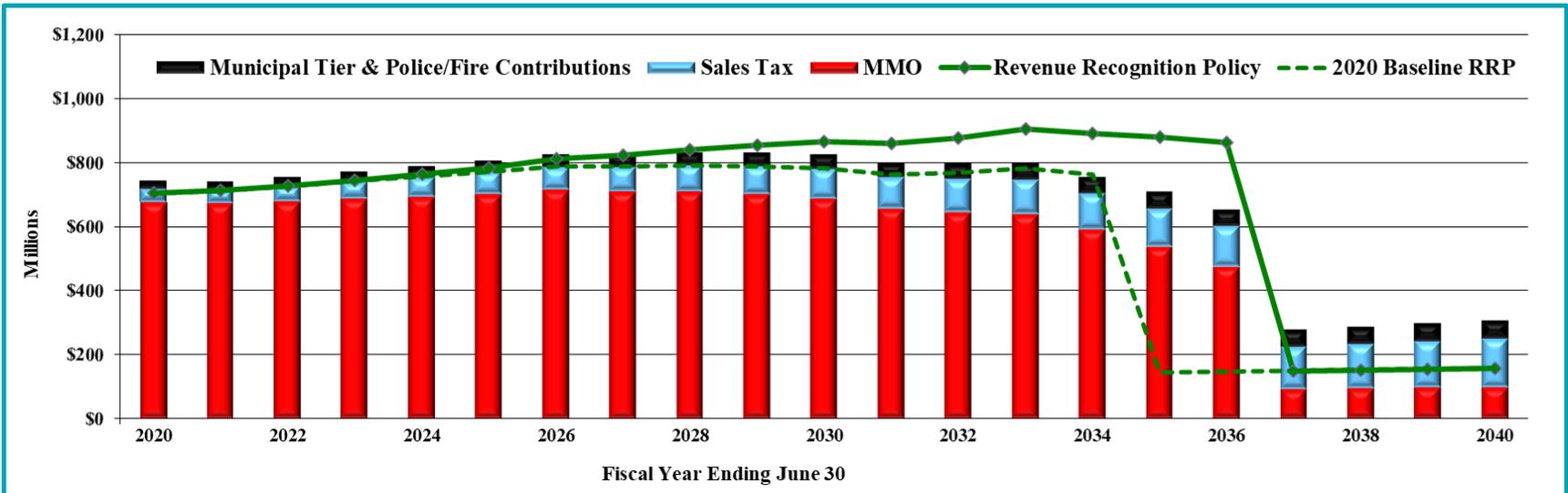
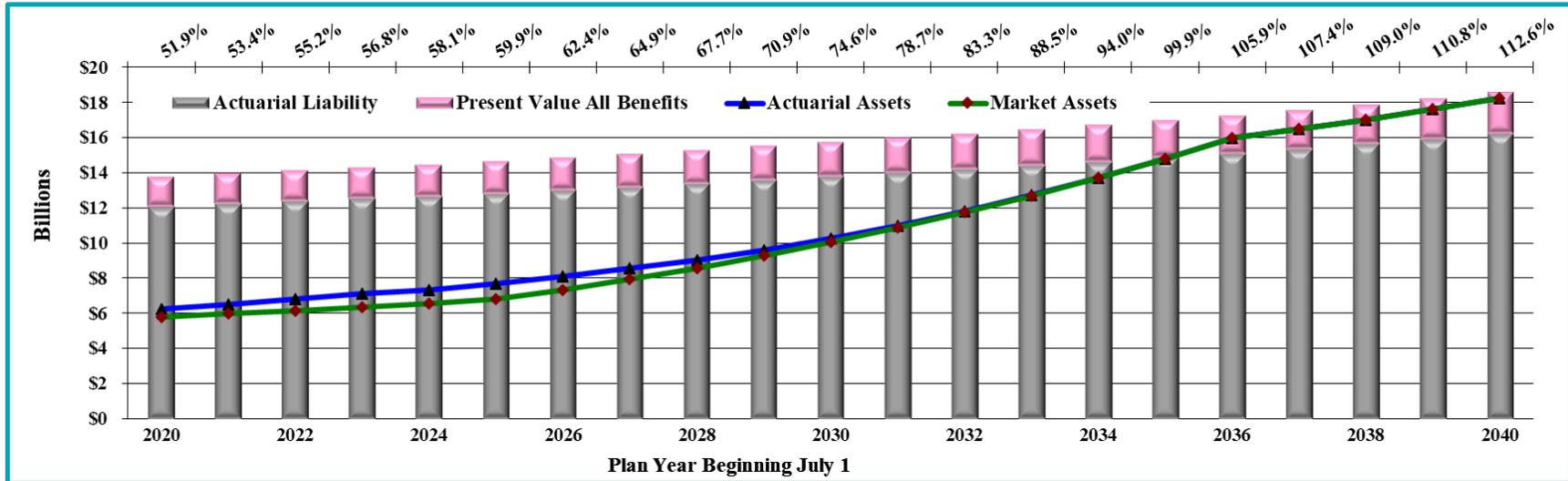
One-Year Positive Shock Scenario: 24.8% return FYE 2021, 7.50% after



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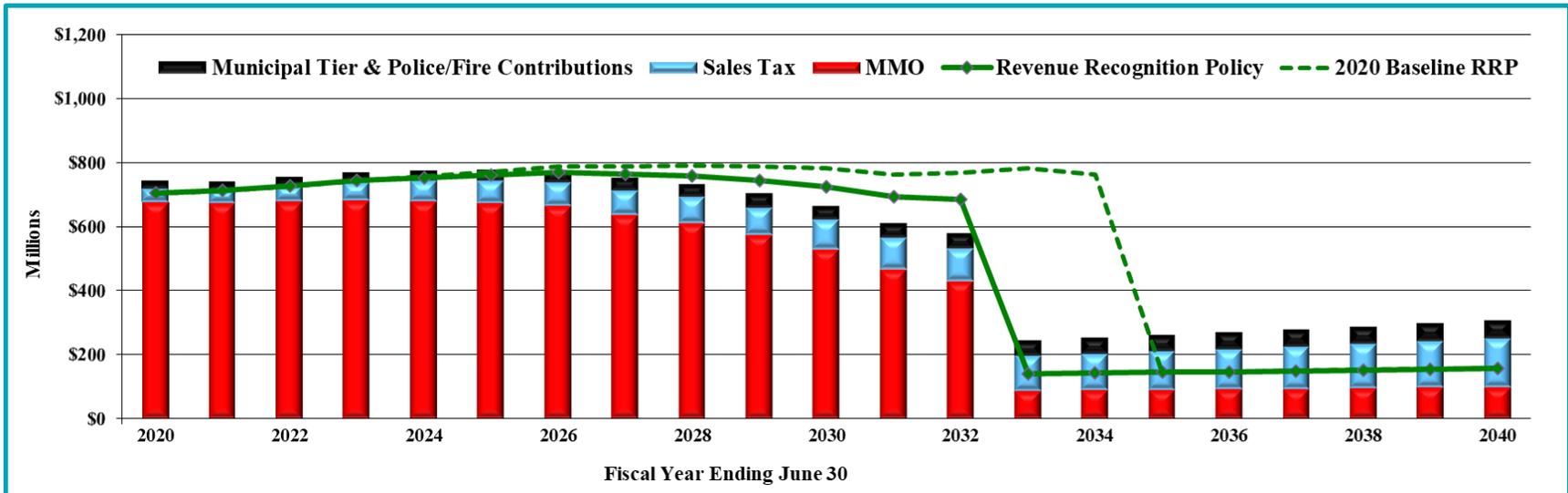
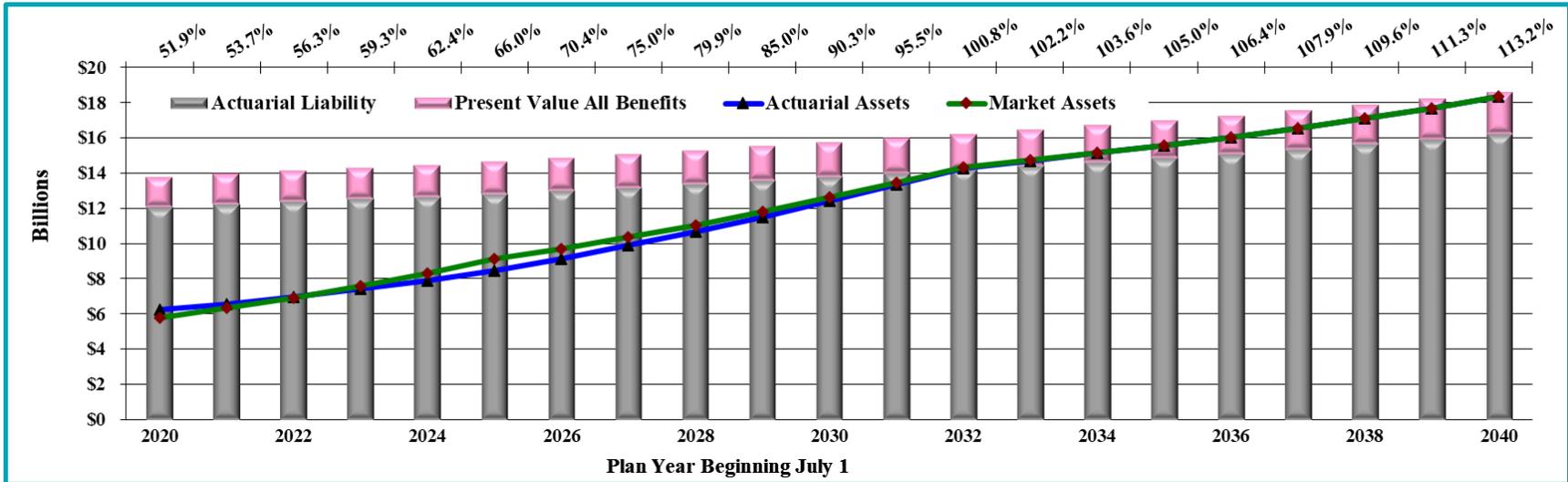
Five-Year Moderate Negative Scenario: 4.0% return FYE 2021-2025, 7.50% after



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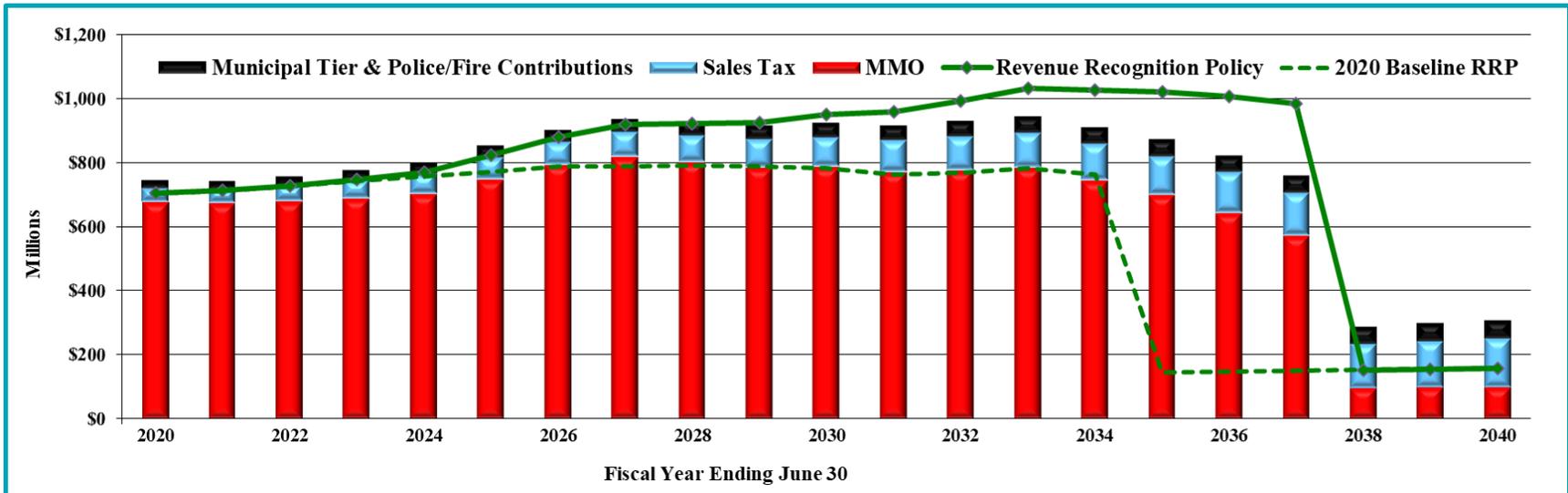
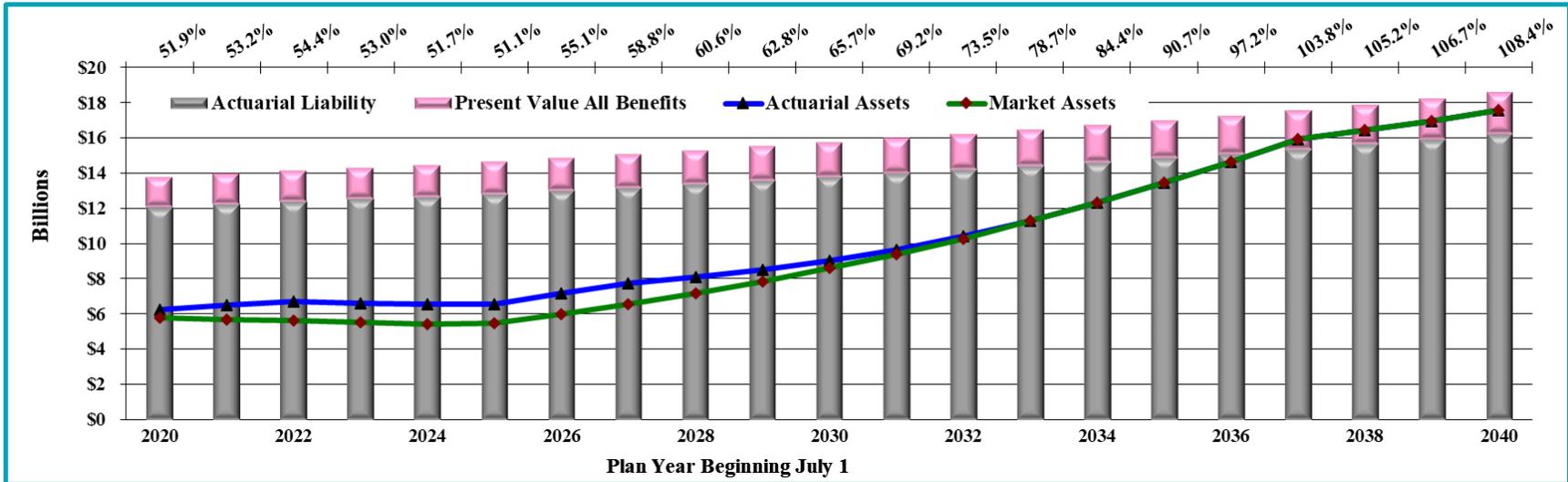
Five-Year Moderate Positive Scenario: 10.4% return FYE 2021-2025, 7.50% after



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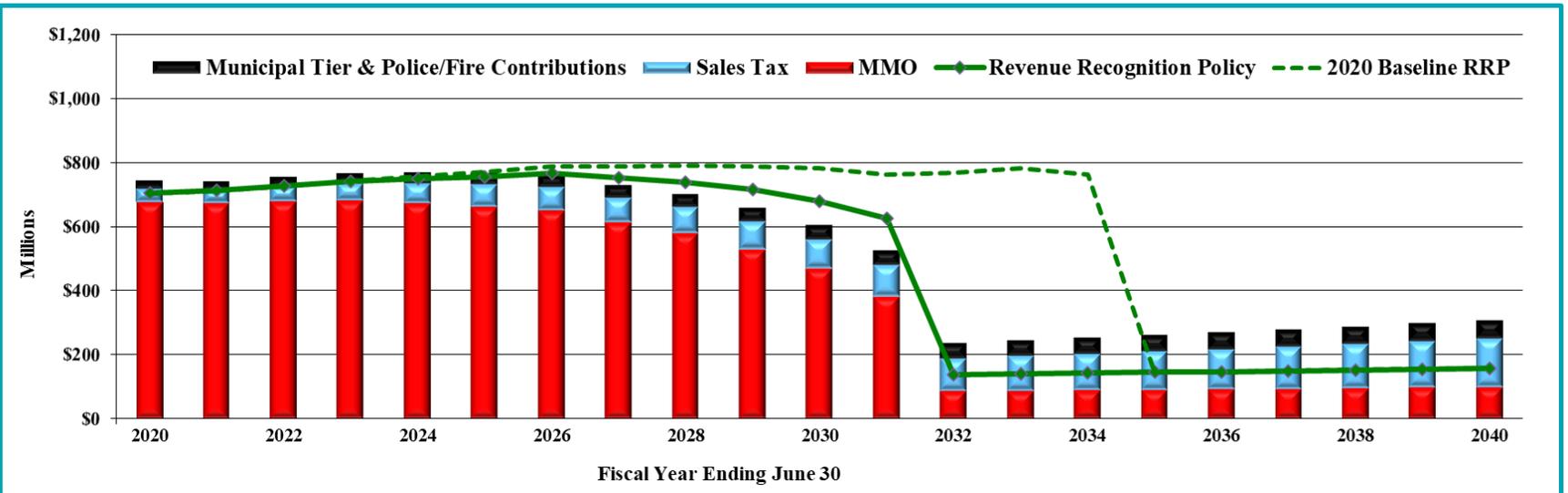
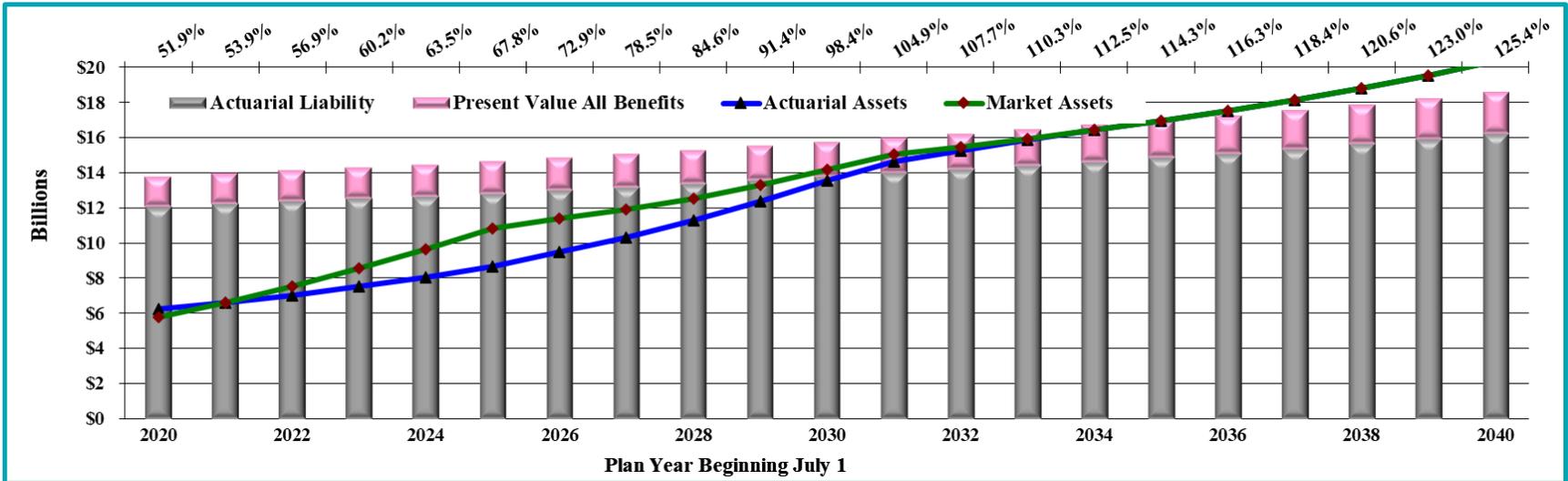
Five-Year Significant Negative Scenario: -0.7% return FYE 2021–2025, 7.50% after



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SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Five-Year Significant Positive Scenario: 15.1% return FYE 2021-2025, 7.50% after



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SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

As illustrated in the charts above, varying returns have an impact on the computed City contributions, especially in the later projection years when the System is fully funded. However, the volatility is mitigated for two reasons, the 10-year smoothing of assets and 20-year amortization of experience gains and losses. This illustrates that the future contributions should be anticipated to be higher to adjust for the market volatility. Thus, the market volatility can prolong the period of paying down the unfunded actuarial liability when coupled with the impact of negative cash flows in down markets.

The investment returns used in the projections above were selected solely to illustrate the impact of investment volatility on the pattern of funded status and City contributions. They are not intended to be predictive of actual future contributions or funded status or even to represent a realistic pattern of investment returns.

Stochastic Projections

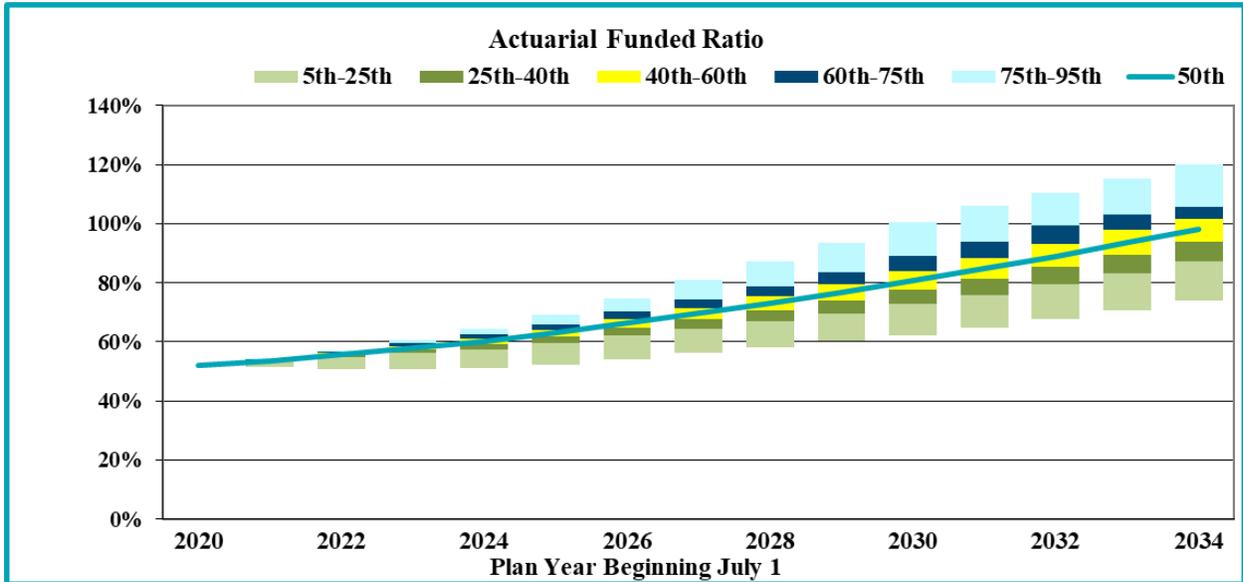
Stochastic Projections are used to provide an alternative view of what the likely future outcomes might be. Instead of a single projection, we use the expected long term average return allowing for the returns for each year to vary according to the expected volatility of asset returns based on the current asset allocation. The returns are determined randomly within anticipated ranges; we then perform 10,000 such projections over a 15 year period and accumulate the results. Accumulating this information allows us to present ranges of likely results.

The charts on the next page show the stochastic projection of the actuarial funded ratio and City contribution amounts under RRP. The blue line represents the most likely or average of the range of outcomes. The colored ranges represent potential results reflecting future asset return volatility (geometric return of 7.21%, standard deviation of 10.69%). The yellow bar around the blue line shows there is a 20% probability the actual ratio will fall within the range. The dark green and dark blue bars show that there is a 50% probability the actual results will fall within the ranges (25th-40th and 60th-75th). Finally, the light green and the light blue bars show that there is a 90% chance the actual results will fall within those ranges (5th-25th and 75th-95th). Another way to say this is there is a 10% chance the ratio could be above or below the projected range of ratios shown. There is increasing uncertainty in the actuarial funded ratio and level of City contributions depending on investment returns over time reflected in how broad the range gets.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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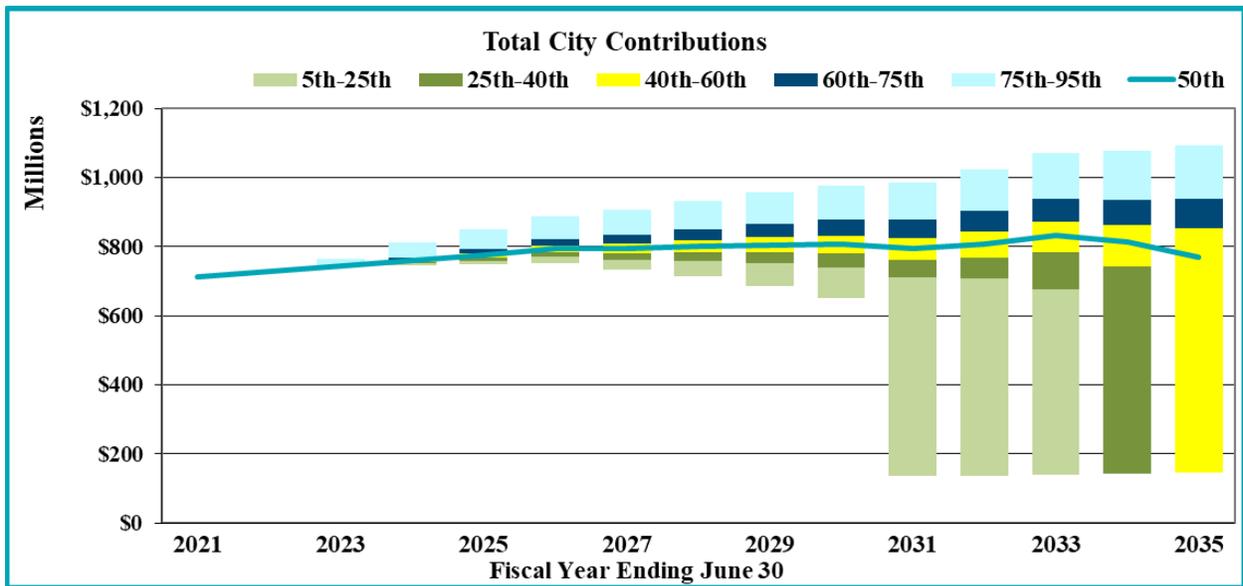
SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Stochastic Projection of Actuarial Funded Ratio and City Contributions



In the worst scenarios, the System’s actuarial funded ratio is just under 75% by plan year beginning 2034 based on poor investment returns. In the best scenarios, the System’s actuarial funded ratio reaches just over 120% by 2034.

In a similar process, we show the projected volatility of future City contributions.



In the worst scenarios, the City’s contribution amount could exceed \$1 billion by FYE 2035. In the best scenarios, the City’s contribution could drop below \$150 million as early as 2031 which represents the System reaching 100% funded or greater at which time it drops to the normal cost rate. The significant cost reduction shows the potential when there are no more payments to fund the unfunded liability.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION III – ASSETS

The Retirement System uses and discloses two different asset measurements for funding, which are presented in this section of the report: market value and actuarial value of assets. The market value represents the value of the assets if they were liquidated on the valuation date and, unless explicitly stated otherwise, this value includes the Pension Adjustment Fund (PAF) which is not available for funding purposes. The actuarial value of assets is a value that smooths annual investment returns over ten years to reduce annual investment volatility and is used in determining contribution levels. This smoothing method also requires that the actuarial value of assets may not be more than 120% or less than 80% of the market value of assets. By definition, the actuarial value of assets does not include the PAF.

On the following pages, we present detailed information on the Retirement System’s assets:

- Disclosure of assets at July 1, 2019 and July 1, 2020,
- Statement of cash flows during the year,
- Actual City and member contributions,
- Development of the actuarial value of assets,
- Apportionment of assets between plans for valuation purposes,
- Development of the Pension Adjustment Fund as of July 1, 2020,
- Development of the actuarial value of assets for Revenue Recognition Policy,
- Disclosure of investment performance for the year, and
- Determination of Asset gain/(loss).

A. Disclosure

The market value of assets represents a “snap-shot” value as of the last day of the fiscal year that provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the value of the investments. Because these fluctuations would cause volatility in employer contributions, an actuarial value of assets is developed. Table III-1 on the following page presents the market value by asset class as of July 1, 2019 and July 1, 2020. Table III-2 presents the System’s net cash flows for the plan year beginning July 1, 2019 and ending June 30, 2020. Table III-3 presents Fiscal 2020 contributions received from the City and members of the System.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION III – ASSETS

Table III-1		
Statement of Assets at Market Value*		
	7/1/2020	7/1/2019
<u>Assets</u>		
Cash	\$ 7,639,107	\$ 17,463,705
Investments	5,713,115,327	5,555,149,856
Securities Lending	391,236,983	381,507,629
Accrued Interest and Other Receivables	260,698,748	260,620,397
Due from Other Governmental Units	<u>9,943,408</u>	<u>7,815,928</u>
Total Assets	\$ 6,382,633,573	\$ 6,222,557,515
<u>Liabilities</u>		
Due on Securities Lending	\$ 391,234,427	\$ 381,430,628
Accrued Expenses and Other Liabilities	<u>208,508,180</u>	<u>152,743,536</u>
Total Liabilities	\$ 599,742,607	\$ 534,174,164
Net Assets	\$ 5,782,890,966	\$ 5,688,383,351

* Includes the PAF which is not available for funding purposes.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION III – ASSETS

B. System Cash Flows for the Year July 1, 2019 through July 1, 2020

Table III-2 Changes in Market Values¹		
Value of Assets – July 1, 2019		\$ 5,688,383,351
<u>Additions</u>		
Contributions:		
Employer Contributions	\$ 768,720,687	
Employee Contributions	111,824,994	
Total Contributions		\$ 880,545,681
Investment Income:		
Appreciation in FV of Investments	\$ (38,084,308)	
Interest and Dividends	129,982,011	
Total Investment Income	\$ 91,897,703	
Investment Activity Expenses:		
Investment Expenses	(6,670,310)	
Total Investment Activity Expenses	\$ (6,670,310)	
Securities Lending Activities:		
Securities Lending Income	\$ 2,069,230	
Securities Lending Expenses	(309,688)	
Net Income from Securities Lending Activities	\$ 1,759,542	
Miscellaneous Operating Revenues	\$ 163,761	
Net Investment Income		87,150,696
Total Additions		\$ 967,696,377
<u>Deductions</u>		
Administrative Expenses	\$ (10,991,102)	
Refunds of Member Contributions	(8,278,690)	
Benefit Payments	(853,918,970)	
PAF Distributions	0	
Total Deductions		(873,188,762)
<u>Total</u>		
Net Increase (Decrease)		94,507,615
Value of Assets – July 1, 2020		\$ 5,782,890,966

¹ Includes the PAF which is not available for funding purposes

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

SECTION III – ASSETS

Table III-3		
Contributions for the Plan Year Ending June 30, 2020		
City Contributions		
Cash Received from City during Fiscal Year 2020	\$	704,589,000
Sales Tax Revenue		42,731,949
Cash Received from Quasi-Agencies		<u>21,399,738</u>
Total Cash Received from City during Fiscal Year 2020	\$	768,720,687
Member Contributions		
Regular Member Contributions	\$	86,632,860
Tier Member Contributions (Municipal and Elected)		11,939,120
Additional Member Contributions (Police and Fire)		<u>13,253,014</u>
Total Member Contributions Received during Fiscal Year 2020	\$	111,824,994

The City’s actual contribution of \$704,589,000 equals the RRP contribution amount for FYE 2020.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

SECTION III – ASSETS

C. Actuarial Value of Assets

To determine on-going funding requirements, most pension systems utilize an actuarial value of assets that differs from the market value of assets. The actuarial value of assets represents an asset value based on averaging or smoothing year-to-year market value returns for purposes of reducing contribution volatility. For the City, gains and losses are recognized in equal amounts over a ten-year period. The resulting asset value may not be more or less than 20% of the MVA.

Table III-4 Development of Actuarial Value of Assets as of July 1, 2020					
1. Market Value of Assets as of July 1, 2020					\$ 5,782,890,966
2. Pension Adjustment Fund (PAF) as of July 1, 2020 Before Additional Transfers					\$ 1,243,871
3. Market Value of Assets Net of Original PAF*					\$ 5,781,647,095
4. Deferred Asset Gains/(Losses)					
Fiscal Year	Investment	Percent	Percent	Amount	
<u>Ending</u>	<u>Gains / (Losses)</u>	<u>Recognized</u>	<u>Deferred</u>	<u>Deferred</u>	
2011	\$ 414,187,915	100%	0%	\$ 0	
2012	(328,486,968)	90%	10%	(32,848,697)	
2013	127,718,278	80%	20%	25,543,656	
2014	347,082,935	70%	30%	104,124,881	
2015	(349,020,722)	60%	40%	(139,608,289)	
2016	(489,127,035)	50%	50%	(244,563,517)	
2017	242,673,428	40%	60%	145,604,057	
2018	79,312,820	30%	70%	55,518,974	
2019	(92,799,571)	20%	80%	(74,239,656)	
2020	(333,977,782)	10%	90%	(300,580,004)	
Total				\$ (461,048,595)	
5. Preliminary Actuarial Value as of July 1, 2020 (5 = 3 - 4)					\$ 6,242,695,690
6. Corridor for Actuarial Value					
a. 80% of Market Value Net of PAF					\$ 4,625,317,676
b. 120% of Market Value Net of PAF					\$ 6,937,976,514
7. Additional PAF Transfer as of July 1, 2020					\$ 0
8. Actuarial Value of Assets Net of Final PAF as of July 1, 2020 8 = max(min of 5 or 6b) and 6a), minus 7					\$ 6,242,695,690
9. As a percent of Market Value Net of Final PAF					108.0%
10. Market Value of Assets Net of Final PAF					\$ 5,781,647,095

* Market value of assets net of original PAF before the determination of the final PAF amount. See section III - E for more details on the development of the total PAF and the additional PAF transfer, if applicable.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

SECTION III – ASSETS

D. Apportionment of Actuarial Value of Assets

The asset allocation reflects the actual cash flows for each plan and proportional allocation of investment earnings.

Table III-5 Allocation of Assets for Valuation Purposes Between Plans as of July 1, 2020 (\$ thousands)										
	1967 Plan			1987 Plan				Plan '10	Plan '16	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	Municipal	
1. Actuarial Value of Assets as of July 1, 2019	\$ 1,474,334	\$ 519,523	\$ 174,362	\$ 1,658,418	\$ 15,191	\$ 1,529,120	\$ 459,444	\$ 11,537	\$ 10,543	\$ 5,852,473
2. Transactions During Plan Year July 1, 2019 to June 30, 2020										
a. Contributions										
City and Commonwealth Employees	\$ 321,830	\$ 159,826	\$ 68,280	\$ 112,750	\$ 1,808	\$ 56,602	\$ 20,915	\$ 1,730	\$ 3,580	\$ 747,321
Quasi-Public Agencies	4,169	1,007	432	44,348	411	36,406	15,298	2,624	7,130	111,825
	16,347	0	0	4,664	0	0	0	89	300	21,400
b. Benefit Payments	(426,764)	(205,106)	(88,731)	(73,115)	(2,175)	(46,122)	(11,905)	0	0	(853,919)
c. Withdrawals	(713)	(64)	(303)	(4,054)	(180)	(2,282)	(496)	0	(187)	(8,279)
d. Administrative Expenses	(3,285)	(1,445)	(493)	(3,391)	(8)	(1,236)	(456)	(240)	(437)	(10,991)
e. Net Transactions	\$ (88,416)	\$ (45,782)	\$ (20,815)	\$ 81,202	\$ (144)	\$ 43,368	\$ 23,356	\$ 4,203	\$ 10,386	\$ 7,357
3. Total Fund Balance Prior to Allocation of Investment Income [1. + 2e.]	\$ 1,385,918	\$ 473,741	\$ 153,547	\$ 1,739,620	\$ 15,047	\$ 1,572,488	\$ 482,800	\$ 15,740	\$ 20,929	\$ 5,859,830
4. Investment Income During Plan Year July 1, 2019 to June 30, 2020	\$ 90,552	\$ 30,953	\$ 10,032	\$ 113,662	\$ 983	\$ 102,742	\$ 31,545	\$ 1,028	\$ 1,367	\$ 382,864
5. Preliminary Actuarial Value of Assets as of July 1, 2020 [3. + 4.]	\$ 1,476,469	\$ 504,693	\$ 163,580	\$ 1,853,283	\$ 16,030	\$ 1,675,231	\$ 514,344	\$ 16,768	\$ 22,296	\$ 6,242,696
6. Allocation of PAF Transfer	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
7. Final Actuarial Value of Assets With Corridor as of July 1, 2020	\$ 1,476,469	\$ 504,693	\$ 163,580	\$ 1,853,283	\$ 16,030	\$ 1,675,231	\$ 514,344	\$ 16,768	\$ 22,296	\$ 6,242,696
8. Final Actuarial Value of Assets Less RRP Additional Revenue Account	\$ 1,425,882	\$ 487,402	\$ 157,975	\$ 1,789,786	\$ 15,481	\$ 1,617,834	\$ 496,722	\$ 16,194	\$ 21,532	\$ 6,028,809

Note: Numbers may not add due to rounding

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION III – ASSETS

E. Development of the Pension Adjustment Fund as of July 1, 2020

This table provides the funds available for distribution consideration under title §22-311 of the Philadelphia Code. In general, the Pension Adjustment Fund (PAF) provides for additional benefit distributions to retirees and beneficiaries through the use of excess earnings. This may include a lump-sum bonus payment, monthly pension increases, ad-hoc cost of living adjustments, or other increases determined by the Board. The adjusted market value of assets reflects a five-year smoothing of asset gains and losses, as described in the Philadelphia Code.

Table III-6 Development of the Pension Adjustment Fund as of July 1, 2020		
1.	PAF on July 1, 2019	\$ 1,225,114
2.	PAF Distribution	0
3.	Market Value Asset Return Through June 30, 2020 *	1.53%
4.	PAF on July 1, 2020 Before Additional Transfers** =(1) x [1 + (3)] + (2) x {[1+(3)]^.50}	\$ 1,243,871
5.	Adjusted Market Value of Assets Through June 30, 2020	\$ 6,024,249,249
6.	Adjusted Market Value of Assets Return Through June 30, 2020 ***	5.29%
7.	Return in Excess of Investment Assumption Plus 1.0%, Limited to 5.0% =(6) - [7.55% + 1.00%]	0.00%
8.	Additional Transfer as of July 1, 2020 =50% of (7) x (5)	\$ 0
9.	Total PAF as of July 1, 2020 = (4) + (8)	\$ 1,243,871

* Market Value Asset Return including the PAF

** Calculations are based upon the unrounded percents for items (3) and (7)

*** Asset Return based upon the Adjusted Market Value of Assets using a 5 year smoothing of the gains/losses as outlined in Title 22-311

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION III – ASSETS

F. Actuarial Value of Assets for Revenue Recognition Policy

The System is expected to receive additional revenue from sales tax, tier member contributions and additional Police and Fire member contributions, which is anticipated to be contributed over and above the City’s contribution of the MMO. These additional sources of revenue are tracked separately and accumulated in a notional account. For determining the actuarial value of assets for the RRP, the additional revenue account is excluded from the assets. Below is the development of the assets used for the RRP.

Table III-7 Actuarial Value of Assets for Revenue Recognition Policy as of July 1, 2020	
1. Additional Revenue Account on July 1, 2019	\$143,572,397
2. Sales Tax Revenue Received During FYE June 30, 2020	\$42,731,949
3. Tier and Additional Member Contributions Received During FYE June 30, 2020*	25,192,135
4. Market Value Asset Return Through June 30, 2020	1.53%
5. Interest Through June 30, 2020	2,390,350
6. Additional Revenue Account on July 1, 2020 =(1) + (2) + (3) + (5)	\$213,886,831
7. Actuarial Value of Assets on June 30, 2020	\$6,242,695,689
8. Actuarial Value of Assets Net of Additional Revenue on June 30, 2020** =(7) - (6)	\$6,028,808,859

* Tier and additional member contributions are assumed to be received mid-year.

Actual date of receipt is used for sales tax revenue contribution

** Actuarial Value of Assets used in calculation of the RRP contribution is net of accumulated sales tax revenue and tier and additional member contributions

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION III – ASSETS

G. Investment Performance

The market value of assets internal rate of return was 1.53% for the year ending June 30, 2020. This is compared to an assumed return of 7.55% for the same period. This return produced an overall investment loss of \$334.0 million for the year ending June 30, 2020. On an actuarial value of assets basis (net of PAF), the return for FYE 2020 was 6.54%. In the table below, we also provide returns from two broad asset classes for comparison.

Table III-8					
Annual Rates of Return					
Year Ending	Investment	Market	Actuarial	Total Return	Barclays
June 30,	Return	Value	Value *	Standard & Poor	Aggregate
	Assumption			500 Index	Bond Index**
1995	9.00%	11.70%	7.80%	26.10%	12.80%
1996	9.00%	15.10%	10.10%	26.00%	4.70%
1997	9.00%	18.30%	12.20%	34.60%	8.20%
1998	9.00%	14.30%	13.10%	30.20%	10.50%
1999	9.00%	10.00%	13.10%	22.70%	3.10%
2000	9.00%	9.60%	11.10%	7.30%	4.60%
2001	9.00%	-6.00%	8.30%	-14.80%	11.20%
2002	9.00%	-5.80%	3.40%	-18.00%	8.60%
2003	9.00%	1.80%	-2.20%	0.30%	10.40%
2004	9.00%	16.60%	4.60%	19.10%	0.30%
2005	8.75%	9.90%	1.80%	6.31%	6.81%
2006	8.75%	11.30%	6.10%	8.60%	-0.80%
2007	8.75%	16.98%	10.71%	20.60%	6.10%
2008	8.75%	-4.53%	10.13%	-13.10%	7.10%
2009	8.75%	-19.87%	-9.28%	-26.21%	5.98%
2010	8.25%	13.81%	12.89%	14.40%	9.19%
2011	8.15%	19.40%	9.90%	28.13%	3.56%
2012	8.10%	0.18%	2.42%	3.14%	7.30%
2013	7.95%	10.94%	5.08%	17.91%	-0.85%
2014	7.85%	15.70%	4.81%	22.04%	4.36%
2015	7.80%	0.29%	5.80%	5.25%	1.86%
2016	7.75%	-3.17%	4.45%	1.73%	6.00%
2017	7.70%	13.08%	4.40%	15.46%	-0.31%
2018	7.65%	9.01%	5.11%	12.17%	-0.39%
2019	7.60%	5.66%	7.60%	8.22%	7.82%
2020	7.55%	1.53%	6.54%	5.39%	8.65%

* Net of PAF

** Formerly Lehman Brothers Aggregate Bond Index

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SECTION III – ASSETS

H. Asset Gain/(Loss)

There was a \$334.0 million investment loss on market value of assets when compared to the expected as of July 1, 2020. Table III-9 reconciles the 2020 asset loss (expected versus actual) for the market value of assets both net of the PAF and in total. This investment loss is smoothed over a ten-year period to determine the actuarial value of assets (see Table III – 4). Also provided below is a reconciliation of the PAF.

Table III-9 Calculation of Asset Gain/(Loss)			
	Market Value (Net of PAF)	PAF	Total Market Value
1. Market Value of Assets as of July 1, 2019	\$ 5,687,158,237	\$ 1,225,114	\$ 5,688,383,351
2. Transactions During Plan Year July 1, 2019 to June 30, 2020			
a. Contributions			
City and Commonwealth	\$ 747,320,949	\$ 0	\$ 747,320,949
Employees	111,824,994	0	111,824,994
Quasi-Public Agencies	21,399,738	0	21,399,738
b. Benefit Payments	(853,918,970)	0	(853,918,970)
c. Withdrawals	(8,278,690)	0	(8,278,690)
d. Administrative Expenses	(10,991,102)	0	(10,991,102)
e. Net Transactions	\$ 7,356,919	\$ 0	\$ 7,356,919
3. Expected Investment Income from July 1, 2019 to June 30, 2020	\$ 421,109,719	\$ 18,757 *	\$ 421,128,476
4. PAF transfer at July 1, 2020	\$ 0	\$ 0	\$ 0
5. Expected Market Value of Assets as of July 1, 2020 [1. + 2.e. + 3. + 4]	\$ 6,115,624,875	\$ 1,243,871	\$ 6,116,868,746
6. Market Value of Assets as of July 1, 2020	\$ 5,781,647,095	\$ 1,243,871	\$ 5,782,890,966
7. Investment Gain/(Loss) [6. - 5.]	\$ (333,977,780)	\$ 0	\$ (333,977,780)

* The PAF is credited with investment income at the market rate of return earned by plan assets.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

SECTION IV – LIABILITIES

In this section, we present detailed information on liabilities for the City of Philadelphia Municipal Retirement System, including:

- Disclosure of liabilities at July 1, 2019 and July 1, 2020,
- Statement of changes in these liabilities and the unfunded liabilities during the year,
- Development of the normal cost rates by plan, and
- The reconciliation of the changes in the unfunded liability by plan as well as the expected unfunded liability as of July 1, 2021.

Disclosure

Two types of liabilities are calculated and presented in this report. Each type is distinguished by the purpose for which the figures are ultimately used.

- **Present Value of all Future Benefits:** Used for measuring all future obligations, this represents the amount of money needed today to fully fund all benefits both earned as of the valuation date and those to be earned in the future by current plan participants, under the current plan provisions and assumptions.
- **Actuarial Liability:** Used for determining employer contributions and GASB accounting disclosures. This liability is calculated by subtracting the present value of future member contributions and future employer normal cost contributions as determined under the Entry Age Normal Cost (EAN) actuarial funding method from the present value of all future benefits.

These liabilities are for funding purposes and are not appropriate for measuring the cost of settling plan liabilities by purchasing annuities or paying lump sums.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION IV – LIABILITIES

Table IV-1 shows the present value of future benefits, actuarial liability, and unfunded actuarial liability as of July 1, 2020, and July 1, 2019, for the Retirement System. The UAL shown in the table below is based on AVA including the additional revenue account balance which is different from the assets used in calculating the RRP contributions.

Table IV-1 Disclosure of Liabilities (\$ thousands)		
	July 1, 2020	July 1, 2019
Present Value of Future Benefits		
Actives	\$ 6,054,540	\$ 5,696,945
Terminated Vesteds	94,667	94,670
Disabled	814,359	802,333
Retirees	5,242,456	5,156,344
Beneficiaries	698,160	687,522
DROP Account plus Deferred Annuities	847,371	1,000,293
Non-Vested Refunds	<u>9,215</u>	<u>9,417</u>
Total City PVFB	\$ 13,760,768	\$ 13,447,524
Market Value of Assets (Net of PAF)	(5,781,647)	(5,687,158)
Present Value Future Member Contrib.	<u>(1,105,968)</u>	<u>(1,057,148)</u>
City's Unfunded Future Obligation	\$ 6,873,153	\$ 6,703,218
Actuarial Liability		
Actives	\$ 4,331,823	\$ 4,032,506
Terminated Vesteds	94,667	94,670
Disabled	814,359	802,333
Retirees	5,242,456	5,156,344
Beneficiaries	698,160	687,522
DROP	847,371	1,000,293
Non-Vested Refunds	<u>9,215</u>	<u>9,417</u>
Total City AL	\$ 12,038,051	\$ 11,783,085
Actuarial Value of Assets	<u>(6,242,696)</u>	<u>(5,852,473)</u>
Unfunded Actuarial Liability	\$ 5,795,355	\$ 5,930,612

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION IV – LIABILITIES

Table IV-2 shows the present value of future benefits, actuarial liability, and unfunded actuarial liability for each Plan in the Retirement System.

Table IV-2 Liabilities Detail as of July 1, 2020 (\$ thousands)										
	1967 Plan			1987 Plan				Plan '10	Plan '16	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	Municipal	
Present Value of Future Benefits										
Actives	\$ 500,461	\$ 137,309	\$ 51,915	\$ 2,397,714	\$ 15,457	\$ 2,033,052	\$ 761,775	\$ 43,693	\$ 113,166	\$ 6,054,540
Terminated Vesteds	23,019	0	0	59,297	0	10,912	1,402	0	37	94,667
Disabled	203,247	168,053	37,348	131,390	0	238,680	35,641	0	0	814,359
Retirees	2,725,158	1,247,998	546,094	436,261	14,829	211,815	60,301	0	0	5,242,456
Beneficiaries	340,218	179,230	80,600	50,663	574	33,426	13,450	0	0	698,160
DROP	344,610	144,608	34,081	145,288	0	146,169	32,615	0	0	847,371
Non-Vested Refunds	1,595	155	155	6,061	10	926	312	0	0	9,215
Total PVFB	\$ 4,138,308	\$ 1,877,353	\$ 750,193	\$ 3,226,674	\$ 30,870	\$ 2,674,980	\$ 905,495	\$ 43,693	\$ 113,203	\$ 13,760,768
Actuarial Liability										
Actives	\$ 474,864	\$ 127,755	\$ 48,618	\$ 1,840,379	\$ 11,508	\$ 1,339,314	\$ 454,321	\$ 14,293	\$ 20,770	\$ 4,331,823
Terminated Vesteds	23,019	0	0	59,297	0	10,912	1,402	0	37	94,667
Disabled	203,247	168,053	37,348	131,390	0	238,680	35,641	0	0	814,359
Retirees	2,725,158	1,247,998	546,094	436,261	14,829	211,815	60,301	0	0	5,242,456
Beneficiaries	340,218	179,230	80,600	50,663	574	33,426	13,450	0	0	698,160
DROP	344,610	144,608	34,081	145,288	0	146,169	32,615	0	0	847,371
Non-Vested Refunds	1,595	155	155	6,061	10	926	312	0	0	9,215
Total AL	\$ 4,112,711	\$ 1,867,799	\$ 746,896	\$ 2,669,339	\$ 26,921	\$ 1,981,243	\$ 598,041	\$ 14,293	\$ 20,807	\$ 12,038,051
Actuarial Value of Assets	(1,476,469)	(504,693)	(163,580)	(1,853,283)	(16,030)	(1,675,231)	(514,344)	(16,768)	(22,296)	(6,242,696)
Unfunded Actuarial Liability	\$ 2,636,242	\$ 1,363,106	\$ 583,316	\$ 816,056	\$ 10,891	\$ 306,012	\$ 83,696	\$ (2,475)	\$ (1,489)	\$ 5,795,355
Funding Percent	35.9%	27.0%	21.9%	69.4%	59.5%	84.6%	86.0%	117.3%	107.2%	51.9%

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION IV – LIABILITIES

Table IV-3 shows the derivation of the City normal cost as a percent of pay for each Plan in the System under the MMO basis. For MMO purposes expected employee contributions include tier and additional Police and Firefighter member contributions.

Table IV-3 Derivation of the Normal Cost as of July 1, 2020 on MMO Basis (\$ thousands)										
	1967 Plan			1987 Plan				Plan '10	Plan '16	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	Municipal	
Retirement	\$ 2,824	\$ 2,058	\$ 776	\$ 38,758	\$ 372	\$ 45,364	\$ 19,835	\$ 1,697	\$ 5,859	\$ 117,543
Death	137	69	28	2,567	20	2,305	1,063	137	449	6,775
Disability	377	365	135	6,504	35	11,316	4,874	460	1,227	25,293
Termination	3,150	210	72	23,085	142	4,912	1,872	947	3,598	37,988
Administrative Expenses	3,132	1,385	475	3,256	8	1,240	480	209	652	10,837
Total Normal Cost (with Expenses)	\$ 9,620	\$ 4,087	\$ 1,487	\$ 74,170	\$ 576	\$ 65,136	\$ 28,123	\$ 3,450	\$ 11,786	\$ 198,436
Expected Employee Contributions	\$ 4,581	\$ 1,005	\$ 383	\$ 44,090	\$ 469	\$ 35,807	\$ 15,168	\$ 2,461	\$ 7,548	\$ 111,512
City Normal Cost	\$ 5,039	\$ 3,083	\$ 1,104	\$ 30,080	\$ 107	\$ 29,329	\$ 12,955	\$ 989	\$ 4,238	\$ 86,924
Current Annual Payroll	\$ 73,256	\$ 16,746	\$ 6,378	\$ 873,144	\$ 3,272	\$ 498,128	\$ 206,876	\$ 71,364	\$ 172,054	\$ 1,921,217
City Normal Cost as % of Pay, Beginning of Year Payment	6.878%	18.407%	17.313%	3.445%	3.266%	5.888%	6.262%	1.386%	2.463%	4.524%
City Normal Cost as % of Pay, End of Year Payment	7.394%	19.788%	18.611%	3.703%	3.511%	6.330%	6.732%	1.490%	2.648%	4.864%

Note: Numbers may not add due to rounding.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION IV – LIABILITIES

Table IV-4 shows changes in the unfunded actuarial liability from July 1, 2019 to July 1, 2020 due to actuarial experience, assumption changes, and active plan changes. The table also shows the development of the expected unfunded actuarial liability from July 1, 2020 to July 1, 2021 based upon the City’s Funding Policy, which is used to develop the end of year amortization amounts for the City’s Funding Policy in Table V – 10 and in Appendix B. The actuarial experience of each of the plans is calculated based on the plans’ actual asset and liability values compared to the expected values.

Table IV-4 Expected Unfunded Actuarial Liability for the Plan Year Ending June 30, 2021 (\$ thousands)										
	1967 Plan			1987 Plan				Plan '10	Plan '16	Total
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	Municipal	
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation*	\$ 2,548,879	\$ 1,336,352	\$ 565,072	\$ 728,260	\$ 11,851	\$ 323,519	\$ 92,464	\$ (779)	\$ (339)	\$ 5,605,279
2. Changes in UAL due to										
a. Actuarial Experience	\$ 72,787	\$ 20,444	\$ 15,794	\$ 70,638	\$ (1,073)	\$ (29,827)	\$ (12,616)	\$ (1,821)	\$ (1,326)	\$ 133,000
b. Assumption Changes	14,577	6,309	2,451	17,158	112	12,321	3,848	125	176	57,077
c. Active Plan Changes	0	0	0	0	0	0	0	0	0	0
d. Inactive Plan Changes	0	0	0	0	0	0	0	0	0	0
e. Subtotal	\$ 87,364	\$ 26,753	\$ 18,245	\$ 87,796	\$ (961)	\$ (17,506)	\$ (8,768)	\$ (1,696)	\$ (1,150)	\$ 190,076
3. Actual UAL as of July 1, 2020 [1. + 2e.]	\$ 2,636,243	\$ 1,363,105	\$ 583,316	\$ 816,056	\$ 10,891	\$ 306,012	\$ 83,696	\$ (2,475)	\$ (1,489)	\$ 5,795,355
4. Expected Changes in UAL from July 1, 2020 to July 1, 2021 due to										
a. Interest on Changes in UAL	\$ 6,552	\$ 2,006	\$ 1,368	\$ 6,585	\$ (72)	\$ (1,313)	\$ (658)	\$ (127)	\$ (86)	\$ 14,256
b. FY 2021 Amortization Contribution	(179,614)	(84,469)	(38,142)	(38,299)	(895)	(14,454)	(4,509)	(0)	(42)	(360,425)
c. Subtotal	\$ (173,062)	\$ (82,463)	\$ (36,774)	\$ (31,714)	\$ (967)	\$ (15,767)	\$ (5,167)	\$ (127)	\$ (128)	\$ (346,169)
5. Expected UAL as of July 1, 2021 [3. + 4c.]	\$ 2,463,181	\$ 1,280,642	\$ 546,542	\$ 784,342	\$ 9,924	\$ 290,245	\$ 78,529	\$ (2,602)	\$ (1,617)	\$ 5,449,186

* Expected UAL is based upon the City's funding policy

Note: Numbers may not add due to rounding.

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

In the process of evaluating the financial condition of any pension system, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions are needed based on the funding methods either required by law or adopted by the plan sponsor. For an actuarial funding method to be effective, it should result in a pattern of contributions that are both stable and predictable as well as systematically fund the plan obligations.

The actuarial funding method used to determine the normal cost and the unfunded actuarial liability is the Entry Age Normal (EAN) cost method. The normal cost is based on taking the value, as of entry age into the plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of each member's expected future salary producing a normal cost rate as a percent of salary that should remain relatively constant over a participant's career. The normal cost rate is multiplied by current salary to determine each member's normal cost which is then all summed to get the total normal cost for all members. Finally, the total normal cost is reduced by the member contribution to produce the employer normal cost. The normal cost also includes an explicit administrative expense assumption to account for anticipated administrative expenses. The unfunded actuarial liability is the difference between the EAN actuarial liability and the actuarial value of assets.

Within this section of the report, three contribution amounts are calculated based on three different sets of funding policies for determining the way the unfunded actuarial liability is funded.

- The first policy is defined in accordance with Act 205 and defines the Minimum Municipal Obligation (MMO), which is the City's minimum required contribution under Pennsylvania State law.
- The second approach is the Revenue Recognition Policy (RRP), which is similar to the MMO calculations except the assets used for determining the contributions exclude the accumulated value of sales tax revenue and tier and additional member contributions received by the System.
- The third approach is in accordance with the City's Funding Policy implemented in 1984, which predates the Act 205 rules and calls for contributions based on a different amortization schedule for the unfunded actuarial liability.

Under all funding methods there are two components: the normal cost and the amortized unfunded actuarial liability. The amortized unfunded actuarial liability is the amount of the unfunded actuarial liability that is paid each year based upon the given or defined amortization periods. The amortization periods are different under the MMO/RRP and the City's Funding Policy. These amortization periods are outlined in more detail in Appendix C, Section B.

As of July 1, 2010, gains and losses are recognized annually to determine the amortization base used to calculate the MMO, as opposed to biennially. This change is implemented in accordance with section 1002 of Act 205 and has been continued since then to provide greater transparency in the determination of the period and amount of such amounts.

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

In addition, the MMO, excluding the Pension Obligation Bond (POB), is also provided in this section, as required for reporting purposes under Act 205.

In Table V-1 we provide the employee contribution rates as a percent of pay effective for the plan year starting July 1, 2021. The rates shown include the 1% increase in contributions for certain municipal employees and elected officials in Plan 67, 87 and 87 prime as required by legislation in 2015 as well as the additional 1% for new employees in these groups entering Plan 87 Municipal prime. The rates shown for Police Officers and Firefighters in Plan 87 and 87 Prime and Plan 10 include the increases effective July 1, 2017 resulting from the Pension Award.

Table V-1 Employee Contribution Rates for the Plan Year Beginning July 1, 2021				
	Municipal¹	Elected²	Police	Fire
Plan 67	7.00%	N/A	6.00%	6.00%
Plan 87	3.55%	11.56%	6.84%	6.84%
Plan 87- 50% of Aggregate NC ³	4.25%	N/A	N/A	N/A
Plan 87 - Accelerated Vesting ⁴	4.46%	12.59%	N/A	N/A
Plan 87 Prime ⁵	4.55%	12.56%	7.84%	7.84%
Plan '10	2.42%	N/A	7.34%	7.34%
Plan '10 - Accelerated Vesting	2.86%	N/A	N/A	N/A
Plan '16 ⁶	4.14%	N/A	N/A	N/A
Plan '16 - Accelerated Vesting ⁷	4.45%	N/A	N/A	N/A

¹ For Municipal Plan 67 members who participate in the Social Security System, employee contributions are 4.75% of compensation up to the social security wage base and 7% above it.

² The employee contribution rate is based upon the normal cost of \$575,921 under Plan 87 Elected, normal cost of \$329,131 under Plan 87 Municipal and current annual payroll of \$3,271,935.

³ This represents 50% of Aggregate Normal Cost for all members in Plan Y and applies to Deputy Sheriffs hired between 1/1/2012 and 6/20/2018.

⁴ Member rate for Municipal Plan 87 (Y5) members eligible to vest in 5 years, and Elected Officials (L8) eligible to be vested in 8 years, instead of 10 years.

⁵ Plan 87 Prime refers to new hires who have the option to elect Plan '10 but have elected to stay in Plan '87. New hires after 7/1/2017 in Police and Fire Plan 87 Prime pay 8.50% and are not reflected above.

⁶ All Municipal groups (except elected officials) hired after January 1, 2019 participate in Plan '16.

⁷ Member rate for Municipal Plan 16 members eligible to vest in 7 years instead of 10 years.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-2a and Table V-2b isolate the contribution requirements for the Quasi Agencies that participate in the System broken out for Municipal Plans 1967, 1987, 2010, and 2016 both under the Funding Policy and MMO.

Table V-2a		
Quasi Agency Funding Rate as a		
Percent of Payroll (Based on Funding Policy)		
Valuation Date	July 1, 2020	July 1, 2019
Fiscal Year Ending in Year	2022	2021
67 Municipal		
1. Normal Cost Rate	7.394%	7.646%
2. Amortization Rate under the City's Funding Policy	<u>479.858%</u>	<u>522.726%</u>
3. Total Year-End Rate [1. + 2.]	487.252%	530.372%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	474.118%	515.985%
87 Municipal		
1. Normal Cost Rate	3.703%	3.845%
2. Amortization Rate under the City's Funding Policy	<u>11.473%</u>	<u>10.632%</u>
3. Total Year-End Rate [1. + 2.]	15.177%	14.477%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	14.768%	14.084%
Plan 10 Municipal		
1. Normal Cost Rate	1.490%	1.601%
2. Amortization Rate under the City's Funding Policy	<u>-0.329%</u>	<u>-0.076%</u>
3. Total Year-End Rate [1. + 2.]	1.161%	1.525%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	1.130%	1.484%
Plan 16 Municipal		
1. Normal Cost Rate	2.648%	3.134%
2. Amortization Rate under the City's Funding Policy	<u>-0.059%</u>	<u>0.015%</u>
3. Total Year-End Rate [1. + 2.]	2.588%	3.149%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	2.519%	3.064%

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-2b Quasi Agency Funding Rate as a Percent of Payroll (Based on MMO)		
Valuation Date	July 1, 2020	July 1, 2019
Fiscal Year Ending in Year	2022	2021
67 Municipal		
1. Normal Cost Rate	7.394%	7.646%
2. Amortization Rate under MMO*	<u>400.001%</u>	<u>412.589%</u>
3. Total Year-End Rate [1. + 2.]	407.395%	420.235%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	396.414%	408.835%
87 Municipal		
1. Normal Cost Rate	3.703%	3.845%
2. Amortization Rate under MMO*	<u>10.388%</u>	<u>9.416%</u>
3. Total Year-End Rate [1. + 2.]	14.092%	13.261%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	13.712%	12.902%
Plan 10 Municipal		
1. Normal Cost Rate	1.490%	1.601%
2. Amortization Rate under MMO*	<u>-0.386%</u>	<u>-0.089%</u>
3. Total Year-End Rate [1. + 2.]	1.105%	1.513%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	1.075%	1.472%
Plan 16 Municipal		
1. Normal Cost Rate	2.648%	3.134%
2. Amortization Rate under MMO*	<u>-0.096%</u>	<u>-0.042%</u>
3. Total Year-End Rate [1. + 2.]	2.552%	3.092%
4. Quarterly adjustment factor	0.97305	0.97287
5. Total, adjusted for Quarterly Payments [3. x 4.]	2.483%	3.008%

* The amortization amounts were derived based on the proportional share of the Unfunded Actuarial Liability.

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-3a shows the development of the FYE 2022 Minimum Municipal Obligation (MMO) and Table V-3b shows the Revenue Recognition Policy (RRP) for each division. Table V-4 on the following page shows a schedule of amortization payments toward the MMO.

Table V-3a				
Development of the Minimum Municipal Obligation for Fiscal Year End 2022				
(\$ thousands)				
	Non-Uniformed	Police	Fire	Total
Estimated FY 2021-2022 Payroll	\$ 1,232,462	\$ 531,865	\$ 220,291	\$ 1,984,618
Normal Cost % without Expenses	7.599%	12.911%	13.417%	9.669%
Normal Cost without Expenses	\$ 93,659	\$ 68,667	\$ 29,556	\$ 191,883
Amortization Payment	357,675	166,488	67,799	591,962
Administrative Expenses	7,497	2,711	986	11,195
Subtotal	\$ 458,831	\$ 237,866	\$ 98,341	\$ 795,040
Expected Employee Contributions*	(62,268)	(38,376)	(16,204)	(116,848)
Minimum Municipal Obligation	\$ 396,563	\$ 199,491	\$ 82,138	\$ 678,192

* Includes additional expected member contributions from Police and Fire Plans 87 and Tier Contributions from Municipal Plans

Table V-3b				
Development of the Revenue Recognition Policy for Fiscal Year End 2022				
(\$ thousands)				
	Non-Uniformed	Police	Fire	Total
Estimated FY 2021-2022 Payroll	\$ 1,232,462	\$ 531,865	\$ 220,291	\$ 1,984,618
Normal Cost % without Expenses	7.599%	12.911%	13.417%	9.669%
Normal Cost without Expenses	\$ 93,659	\$ 68,667	\$ 29,556	\$ 191,883
Amortization Payment	368,557	173,496	69,978	612,031
Administrative Expenses	7,497	2,711	986	11,195
Subtotal	\$ 469,713	\$ 244,874	\$ 100,520	\$ 815,109
Expected Employee Contributions *	(47,276)	(28,381)	(12,021)	(87,679)
Revenue Recognition Policy	\$ 422,437	\$ 216,494	\$ 88,499	\$ 727,430

* Does not include additional expected member contributions from Police and Fire Plans 87 and Tier Contributions from Municipal Plans

Note: Numbers may not add due to rounding.

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-4 Unfunded Liability Payments toward the MMO for Fiscal Year 2022 (\$ thousands)												
Type of Base	Municipal			Police			Fire			Total		
	7/1/2020 Balance	Years Left	FY 2022 Payment									
Fresh Start Base est. July 1, 2009	\$ 2,353,081	19	\$ 219,791	\$ 1,324,513	19	\$ 123,717	\$ 513,274	19	\$ 47,943	\$ 4,190,868	19	\$ 391,450
Gain/Loss Base est. July 1, 2010	\$ (40,905)	10	\$ (5,544)	\$ (29,168)	10	\$ (3,953)	\$ (2,183)	10	\$ (296)	\$ (72,257)	10	\$ (9,792)
Assumption Change est. July 1, 2010	\$ 39,620	5	\$ 9,110	\$ 15,897	5	\$ 3,655	\$ 14,508	5	\$ 3,336	\$ 70,026	5	\$ 16,100
Gain/Loss est. July 1, 2011	\$ (82,999)	11	\$ (10,554)	\$ (16,818)	11	\$ (2,139)	\$ (16,539)	11	\$ (2,103)	\$ (116,357)	11	\$ (14,796)
Assumption Change est. July 1, 2011	\$ 12,561	6	\$ 2,489	\$ 7,552	6	\$ 1,497	\$ 2,547	6	\$ 505	\$ 22,660	6	\$ 4,491
Gain/Loss est. July 1, 2012	\$ 117,999	12	\$ 14,190	\$ 62,409	12	\$ 7,505	\$ 16,162	12	\$ 1,944	\$ 196,570	12	\$ 23,639
Assumption Change est. July 1, 2012	\$ 36,985	7	\$ 6,496	\$ 21,130	7	\$ 3,711	\$ 7,383	7	\$ 1,297	\$ 65,498	7	\$ 11,503
Gain/Loss est. July 1, 2013	\$ 107,182	13	\$ 12,270	\$ 31,221	13	\$ 3,574	\$ (4,406)	13	\$ (504)	\$ 133,997	13	\$ 15,340
Assumption Change est. July 1, 2013	\$ 52,987	8	\$ 8,415	\$ 31,774	8	\$ 5,046	\$ 10,598	8	\$ 1,683	\$ 95,359	8	\$ 15,145
Gain/Loss est. July 1, 2014	\$ 88,573	14	\$ 9,706	\$ 36,275	14	\$ 3,975	\$ 42,101	14	\$ 4,613	\$ 166,948	14	\$ 18,294
Assumption Change est. July 1, 2014	\$ 189,105	9	\$ 27,577	\$ (6,623)	9	\$ (966)	\$ 7,605	9	\$ 1,109	\$ 190,087	9	\$ 27,720
Gain/Loss est. July 1, 2015	\$ 151,434	15	\$ 15,959	\$ 34,384	15	\$ 3,624	\$ 33,132	15	\$ 3,492	\$ 218,950	15	\$ 23,074
Assumption Change est. July 1, 2015	\$ 21,724	10	\$ 2,944	\$ 31,396	10	\$ 4,255	\$ 10,024	10	\$ 1,359	\$ 63,144	10	\$ 8,557
Gain/Loss est. July 1, 2016	\$ 105,884	16	\$ 10,775	\$ 69,990	16	\$ 7,122	\$ 19,472	16	\$ 1,981	\$ 195,346	16	\$ 19,878
Assumption Change est. July 1, 2016	\$ 23,678	11	\$ 3,011	\$ 14,123	11	\$ 1,796	\$ 4,682	11	\$ 595	\$ 42,483	11	\$ 5,402
Gain/Loss est. July 1, 2017	\$ 77,346	17	\$ 7,627	\$ 62,329	17	\$ 6,146	\$ 15,196	17	\$ 1,498	\$ 154,872	17	\$ 15,271
Assumption Change est. July 1, 2017	\$ 25,518	12	\$ 3,069	\$ 15,377	12	\$ 1,849	\$ 5,096	12	\$ 613	\$ 45,991	12	\$ 5,531

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-4 (Continued)												
Unfunded Liability Payments toward the MMO for Fiscal Year 2022												
(\$ thousands)												
Type of Base	Municipal			Police			Fire			Total		
	7/1/2020 Balance	Years Left	FY 2022 Payment									
Gain/Loss												
est. July 1, 2018	\$ 15,434	18	\$ 1,479	\$ 24,373	18	\$ 2,336	\$ 8,669	18	\$ 831	\$ 48,476	18	\$ 4,646
Assumption Change												
est. July 1, 2018	\$ 129,907	13	\$ 14,872	\$ (55,553)	13	\$ (6,360)	\$ (18,806)	13	\$ (2,153)	\$ 55,548	13	\$ 6,359
Gain/Loss												
est. July 1, 2019	\$ (78,959)	19	\$ (7,375)	\$ 3,596	19	\$ 336	\$ (1,665)	19	\$ (156)	\$ (77,028)	19	\$ (7,195)
Assumption Change												
est. July 1, 2019	\$ 29,902	14	\$ 3,277	\$ 17,737	14	\$ 1,944	\$ 5,941	14	\$ 651	\$ 53,580	14	\$ 5,871
Plan Change												
est. July 1, 2019	\$ 911	9	\$ 133	\$ 0	9	\$ 0	\$ 0	9	\$ 0	\$ 911	9	\$ 133
Gain/Loss												
est. July 1, 2020	\$ 50,109	20	\$ 4,572	\$ (45,427)	20	\$ (4,145)	\$ (12,077)	20	\$ (1,102)	\$ (7,396)	20	\$ (675)
Assumption Change												
est. July 1, 2020	\$ 32,148	15	\$ 3,388	\$ 18,629	15	\$ 1,963	\$ 6,299	15	\$ 664	\$ 57,077	15	\$ 6,015
Total	\$ 3,459,226		\$ 357,675	\$ 1,669,117		\$ 166,488	\$ 667,013		\$ 67,799	\$ 5,795,356		\$ 591,962

Note: Numbers may not add due to rounding.

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-5 (a) – (d) provides more detail by plan on the expected and actual unfunded actuarial liability and the new amortization bases established as of July 1, 2020 for the MMO.

Table V-5a			
Development of the Fiscal Year 2022 Amortization Payment under MMO			
Municipal and Elected			
(\$ thousands)			
	7/1/2020	Remaining	FY 2022
	Outstanding Balance	Years	Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation	\$ 3,376,969		\$ 349,715
2. Changes in UAL due to			
a. Actuarial Experience	\$ 50,109	20	\$ 4,572
b. Assumption Changes	32,148	15	3,388
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	0	1	0
e. Subtotal	\$ 82,257		\$ 7,960
3. Total [1c. + 2e.]	\$ 3,459,226		\$ 357,675

Note: Numbers may not add due to rounding.

Table V-5b			
Development of the Fiscal Year 2022 Amortization Payment under MMO			
Police			
(\$ thousands)			
	7/1/2020	Remaining	FY 2022
	Outstanding Balance	Years	Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation	\$ 1,695,915		\$ 168,670
2. Changes in UAL due to			
a. Actuarial Experience	\$ (45,427)	20	\$ (4,145)
b. Assumption Changes	18,629	15	1,963
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	0	1	0
e. Subtotal	\$ (26,798)		\$ (2,182)
3. Total [1c. + 2e.]	\$ 1,669,117		\$ 166,488

Note: Numbers may not add due to rounding.

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Table V-5c			
Development of the Fiscal Year 2022 Amortization Payment under MMO			
Fire			
(\$ thousands)			
	7/1/2020 Outstanding Balance	Remaining Years	FY 2022 Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation	\$ 672,791		\$ 68,237
2. Changes in UAL due to			
a. Actuarial Experience	\$ (12,077)	20	\$ (1,102)
b. Assumption Changes	6,299	15	664
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	<u>0</u>	1	<u>0</u>
e. Subtotal	\$ (5,778)		\$ (438)
3. Total [1c. + 2e.]	\$ 667,013		\$ 67,799

Note: Numbers may not add due to rounding.

Table V-5d			
Development of the Fiscal Year 2022 Amortization Payment under MMO			
Total			
(\$ thousands)			
	7/1/2020 Outstanding Balance	Remaining Years	FY 2022 Payment
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation	\$ 5,745,675		\$ 586,622
2. Changes in UAL due to			
a. Actuarial Experience	\$ (7,396)	20	\$ (675)
b. Assumption Changes	57,077	15	6,015
c. Active Plan Changes	0	10	0
d. Inactive Plan Changes	<u>0</u>	1	<u>0</u>
e. Subtotal	\$ 49,681		\$ 5,340
3. Total [1c. + 2e.]	\$ 5,795,356		\$ 591,962

Note: Numbers may not add due to rounding.

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The tables on the following pages support Exhibit I of the Act 205 filings.

- Table V-6 is a summary of assets, liabilities, and amortization contributions under the assumption that the Pension Obligation Bond (POB) was never contributed.
- Table V-7 is a schedule of modified amortization payments under the assumption that the proceeds from the POB were never contributed.
- Table V-8a, V-8b, and V-8c are debt service schedules for the POB, allocated for the Municipal, Police, and Fire divisions.
- Tables V-9a and V-9b are statements of receipts and disbursements for each division excluding and including bond issue assets, respectively, excluding the PAF.

Table V-6					
Summary of Modified Actuarial Data					
(\$ thousands)					
	Municipal	Police	Fire	Total	
Actuarial Liability	\$ 6,844,073	\$ 3,849,041	\$ 1,344,937	\$ 12,038,051	
Market Value of Assets (less POB)	\$ 2,953,937	\$ 1,971,672	\$ 548,120	\$ 5,473,729	
Actuarial Value of Assets (less POB)	\$ 3,069,811	\$ 1,995,315	\$ 583,286	\$ 5,648,412	
Unfunded Actuarial Liability (AL - AVA)	\$ 3,774,262	\$ 1,853,726	\$ 761,651	\$ 6,389,639	
Amortization Contributions					
Total Amortization Amount	\$ 387,692	\$ 184,612	\$ 76,957	\$ 649,261	
Remaining Years	16	17	16	16	

Note: Numbers may not add due to rounding.

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Table V-7 Modified Unfunded Liability Payments toward the MMO for Fiscal Year 2022 (\$ thousands)												
Type of Base	Municipal			Police			Fire			Total		
	7/1/2020 Balance	Remaining Years	FY 2022 Payment									
Fresh Start UAL Base est. July 1, 2009	\$ 2,759,349	19	\$ 257,738	\$ 1,494,603	19	\$ 139,604	\$ 633,179	19	\$ 59,142	\$ 4,887,131	19	\$ 456,485
July 1, 2010 Charges												
Experience (Gain)/Loss	\$ (36,229)	10	\$ (4,910)	\$ (25,343)	10	\$ (3,435)	\$ 1,244	10	\$ 169	\$ (60,328)	10	\$ (8,176)
Assumption Change	39,620	5	9,110	15,897	5	3,655	14,508	5	3,336	70,026	5	16,100
July 1, 2011 Charges												
Experience (Gain)/Loss	\$ (64,936)	11	\$ (8,257)	\$ (6,546)	11	\$ (832)	\$ (8,766)	11	\$ (1,115)	\$ (80,248)	11	\$ (10,204)
Assumption Change	\$ 12,561	6	\$ 2,489	\$ 7,552	6	\$ 1,497	\$ 2,547	6	\$ 505	\$ 22,660	6	\$ 4,491
July 1, 2012 Charges												
Experience (Gain)/Loss	\$ 118,545	12	\$ 14,256	\$ 65,808	12	\$ 7,914	\$ 16,876	12	\$ 2,029	\$ 201,229	12	\$ 24,199
Assumption Change	\$ 36,985	7	\$ 6,496	\$ 21,130	7	\$ 3,711	\$ 7,383	7	\$ 1,297	\$ 65,498	7	\$ 11,503
July 1, 2013 Charges												
Experience (Gain)/Loss	\$ 114,932	13	\$ 13,157	\$ 38,935	13	\$ 4,457	\$ (2,659)	13	\$ (304)	\$ 151,208	13	\$ 17,310
Assumption Change	\$ 52,987	8	\$ 8,415	\$ 31,774	8	\$ 5,046	\$ 10,598	8	\$ 1,683	\$ 95,359	8	\$ 15,145
July 1, 2014 Charges												
Experience (Gain)/Loss	\$ 89,033	14	\$ 9,756	\$ 40,575	14	\$ 4,446	\$ 41,649	14	\$ 4,564	\$ 171,257	14	\$ 18,766
Assumption Change	\$ 189,105	9	\$ 27,577	\$ (6,623)	9	\$ (966)	\$ 7,605	9	\$ 1,109	\$ 190,087	9	\$ 27,720
July 1, 2015 Charges												
Experience (Gain)/Loss	\$ 147,627	15	\$ 15,557	\$ 37,812	15	\$ 3,985	\$ 32,145	15	\$ 3,388	\$ 217,584	15	\$ 22,930
Assumption Change	\$ 21,724	10	\$ 2,944	\$ 31,396	10	\$ 4,255	\$ 10,024	10	\$ 1,359	\$ 63,144	10	\$ 8,557
July 1, 2016 Charges												
Experience (Gain)/Loss	\$ 83,444	16	\$ 8,491	\$ 70,721	16	\$ 7,196	\$ 11,754	16	\$ 1,196	\$ 165,919	16	\$ 16,884
Assumption Change	\$ 23,678	11	\$ 3,011	\$ 14,123	11	\$ 1,796	\$ 4,682	11	\$ 595	\$ 42,483	11	\$ 5,402
July 1, 2017 Charges												
Experience (Gain)/Loss	\$ 49,768	17	\$ 4,907	\$ 60,226	17	\$ 5,939	\$ 5,868	17	\$ 579	\$ 115,862	17	\$ 11,425
Assumption Change	\$ 25,518	12	\$ 3,069	\$ 15,377	12	\$ 1,849	\$ 5,096	12	\$ 613	\$ 45,991	12	\$ 5,531

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Table V-7 (Continued)												
Modified Unfunded Liability Payments toward the MMO for Fiscal Year 2022												
(\$ thousands)												
Type of Base	Municipal			Police			Fire			Total		
	7/1/2020 Balance	Remaining Years	FY 2022 Payment									
July 1, 2018 Charges												
Experience (Gain)/Loss	\$ (11,860)	18	\$ (1,137)	\$ 21,674	18	\$ 2,077	\$ (283)	18	\$ (27)	\$ 9,531	18	\$ 913
Assumption Change	\$ 129,907	13	\$ 14,872	\$ (55,553)	13	\$ (6,360)	\$ (18,806)	13	\$ (2,153)	\$ 55,548	13	\$ 6,359
July 1, 2019 Charges												
Experience (Gain)/Loss	\$ (101,403)	19	\$ (9,472)	\$ (1,766)	19	\$ (165)	\$ (8,890)	19	\$ (830)	\$ (112,060)	19	\$ (10,467)
Assumption Change	\$ 29,902	14	\$ 3,277	\$ 17,737	14	\$ 1,944	\$ 5,941	14	\$ 651	\$ 53,580	14	\$ 5,871
Plan Change	\$ 911	9	\$ 133	\$ 0	9	\$ 0	\$ 0	9	\$ 0	\$ 911	9	\$ 133
July 1, 2020 Charges												
Experience (Gain)/Loss	\$ 30,946	20	\$ 2,824	\$ (54,412)	20	\$ (4,965)	\$ (16,343)	20	\$ (1,491)	\$ (39,810)	20	\$ (3,633)
Assumption Change	\$ 32,148	15	\$ 3,388	\$ 18,629	15	\$ 1,963	\$ 6,299	15	\$ 664	\$ 57,077	15	\$ 6,015
Total	\$ 3,774,262		\$ 387,692	\$ 1,853,726		\$ 184,612	\$ 761,651		\$ 76,957	\$ 6,389,639		\$ 649,260

Note: Numbers may not add due to rounding.

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Table V-8a				
TOTAL DEBT SERVICE REQUIREMENTS: MUNICIPAL				
Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1999	\$ 0	\$ 7,041,525.30	\$ 0	\$ 727,185,593.15
2000	9,917,857.50	29,825,175.27	0	717,267,735.65
2001	4,567,730.63	29,324,323.46	0	712,700,005.02
2002	0	29,087,715.02	0	712,700,005.02
2003	6,422,403.75	29,087,715.02	0	706,277,601.27
2004	8,884,981.88	28,728,336.25	0	697,392,619.39
2005	15,161,038.13	28,250,550.75	0	682,231,581.26
2006	18,743,737.50	27,403,048.72	0	663,487,843.76
2007	22,526,257.50	26,345,901.92	0	640,961,586.26
2008	26,486,083.13	25,064,157.87	0	614,475,503.13
2009	30,870,879.38	23,543,856.70	0	583,604,623.75
2010	40,000,711.88	21,756,432.78	0	543,603,911.87
2011	45,151,018.13	19,420,391.21	0	498,452,893.74
2012	22,154,721.72	45,234,066.39	0	476,298,172.02
2013	21,786,233.75	48,416,929.37	0	454,511,938.27
2014	20,545,516.84	50,378,126.28	0	433,966,421.43
2015	20,088,811.07	53,652,021.42	0	413,877,610.36
2016	19,364,886.72	56,464,212.02	0	394,512,723.64
2017	18,085,471.62	57,743,627.12	0	376,427,252.02
2018	16,915,332.51	58,913,766.23	0	359,511,919.51
2019	15,787,131.76	60,041,966.99	0	343,724,787.75
2020	14,758,165.41	61,070,933.33	0	328,966,622.34
2021	13,823,708.03	62,005,390.71	0	315,142,914.31
2022	12,919,375.38	62,909,723.36	0	302,223,538.93
2023	12,071,748.11	63,757,350.63	0	290,151,790.82
2024	11,250,110.80	64,578,987.94	0	278,901,680.02
2025	10,560,195.36	65,268,903.38	0	268,341,484.66
2026	17,271,090.90	58,558,007.84	0	251,070,393.76
2027	60,297,984.38	16,196,263.75	0	190,772,409.38
2028	64,125,534.38	12,367,341.75	0	126,646,875.00
2029	126,646,875.00	4,147,685.16	0	0

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Table V-8b					
TOTAL DEBT SERVICE REQUIREMENTS: POLICE					
Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized		Principal Balance at Valuation Date
1999	\$ 0	\$ 3,848,228.76	\$ 0	\$	397,410,560.15
2000	5,420,158.68	16,299,607.13	0		391,990,401.47
2001	2,496,287.61	16,025,889.30	0		389,494,113.86
2002	0	15,896,581.60	0		389,494,113.86
2003	3,509,875.74	15,896,581.60	0		385,984,238.12
2004	4,855,686.99	15,705,644.36	0		381,128,551.13
2005	8,285,583.09	15,439,067.14	0		372,842,968.04
2006	10,243,546.20	14,975,903.05	0		362,599,421.84
2007	12,310,712.28	14,398,167.04	0		350,288,709.56
2008	14,474,776.77	13,697,687.51	0		335,813,932.79
2009	16,871,089.83	12,866,835.33	0		318,942,842.96
2010	21,860,588.91	11,889,999.22	0		297,082,254.05
2011	24,675,257.01	10,613,340.83	0		272,406,997.04
2012	12,107,666.12	24,720,643.30	0		260,299,330.92
2013	11,906,285.60	26,460,093.82	0		248,393,045.32
2014	11,228,227.61	27,531,897.73	0		237,164,817.71
2015	10,978,635.63	29,321,097.79	0		226,186,182.08
2016	10,583,007.35	30,857,974.00	0		215,603,174.73
2017	9,883,800.61	31,557,180.75	0		205,719,374.12
2018	9,244,313.74	32,196,667.62	0		196,475,060.38
2019	8,627,746.39	32,813,234.97	0		187,847,313.99
2020	8,065,411.14	33,375,570.22	0		179,781,902.85
2021	7,554,725.51	33,886,255.84	0		172,227,177.34
2022	7,060,503.20	34,380,478.16	0		165,166,674.14
2023	6,597,270.66	34,843,710.70	0		158,569,403.48
2024	6,148,241.77	35,292,739.59	0		152,421,161.71
2025	5,771,199.53	35,669,781.82	0		146,649,962.18
2026	9,438,737.48	32,002,243.88	0		137,211,224.70
2027	32,953,149.75	8,851,339.07	0		104,258,074.95
2028	35,044,924.95	6,758,814.06	0		69,213,150.00
2029	69,213,150.00	2,266,730.66	0		0

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Table V-8c				
TOTAL DEBT SERVICE REQUIREMENTS: FIRE				
Plan Year	Required Principal Payment	Required Interest Payment	Premium or Discount Amortized	Principal Balance at Valuation Date
1999	\$ 0	\$ 1,620,185.70	\$ 0	\$ 167,318,251.01
2000	2,282,001.44	6,862,479.41	0	165,036,249.57
2001	1,050,989.88	6,747,238.34	0	163,985,259.69
2002	0	6,692,797.06	0	163,985,259.69
2003	1,477,731.92	6,692,797.06	0	162,507,527.77
2004	2,044,346.92	6,612,408.45	0	160,463,180.85
2005	3,488,405.72	6,500,173.80	0	156,974,775.13
2006	4,312,749.60	6,305,171.92	0	152,662,025.53
2007	5,183,070.24	6,061,932.84	0	147,478,955.29
2008	6,094,187.16	5,767,016.15	0	141,384,768.13
2009	7,103,085.64	5,417,209.80	0	134,281,682.49
2010	9,203,770.28	5,005,941.15	0	125,077,912.21
2011	10,388,805.08	4,468,440.96	0	114,689,107.13
2012	5,097,583.51	10,407,913.67	0	109,591,523.62
2013	5,012,798.05	11,140,259.13	0	104,578,725.57
2014	4,727,321.30	11,591,511.24	0	99,851,404.27
2015	4,622,237.80	12,344,802.31	0	95,229,166.47
2016	4,455,669.93	12,991,859.70	0	90,773,496.54
2017	4,161,289.10	13,286,240.52	0	86,612,207.44
2018	3,892,051.60	13,555,478.02	0	82,720,155.84
2019	3,632,463.70	13,815,065.92	0	79,087,692.14
2020	3,395,708.67	14,051,820.95	0	75,691,983.47
2021	3,180,699.22	14,266,830.40	0	72,511,284.25
2022	2,972,621.18	14,474,908.45	0	69,538,663.07
2023	2,777,590.48	14,669,939.14	0	66,761,072.59
2024	2,588,539.82	14,858,989.80	0	64,172,532.77
2025	2,429,797.06	15,017,732.56	0	61,742,735.71
2026	3,973,908.11	13,473,621.52	0	57,768,827.60
2027	13,873,973.00	3,726,600.95	0	43,894,854.60
2028	14,754,654.60	2,845,603.67	0	29,140,200.00
2029	29,140,200.00	954,341.55	0	0

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Table V- 9a provides the receipts and disbursements of assets *excluding* the Bond issue assets and excluding the PAF.

Table V-9a Receipts and Disbursements Excluding Bond Issue Assets				
	Municipal	Police	Fire	Total
Assets as of July 1, 2019	\$ 2,868,287,275	\$ 1,924,596,279	\$ 527,110,132	\$ 5,319,993,686
Receipts				
Employer Contributions	\$ 448,718,241	\$ 212,247,818	\$ 89,696,077	\$ 750,662,136
Employee Contributions	58,681,618	37,413,408	15,729,968	111,824,994
State Aid	48,458,136	23,744,040	9,785,522	81,987,698
Supplemental State Assistance	0	0	0	0
Investment Income (includes investment expenses)	44,340,822	29,925,769	8,182,506	82,449,097
Other Receipts	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Receipts	\$ 600,198,817	\$ 303,331,035	\$ 123,394,073	\$ 1,026,923,925
Disbursements				
Benefit Payments	\$ 502,054,427	\$ 251,228,177	\$ 100,636,366	\$ 853,918,970
Refund of Contributions	5,133,830	2,345,774	799,086	8,278,690
Administrative Expenses	7,360,764	2,681,161	949,177	10,991,102
PAF Transfer at Year End	0	0	0	0
Other Disbursements	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Disbursements	\$ 514,549,021	\$ 256,255,112	\$ 102,384,629	\$ 873,188,762
Assets as of July 1, 2020	\$ 2,953,937,072	\$ 1,971,672,202	\$ 548,119,576	\$ 5,473,728,849

Note: Numbers may not add due to rounding.

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Table IV- 9b provides the market value of assets *including* the Bond issue assets and excluding the PAF.

Table V-9b				
Receipts and Disbursements Including Bond Issue Assets				
	Municipal	Police	Fire	Total
Assets as of July 1, 2019	\$ 3,069,379,924	\$ 2,011,233,642	\$ 606,544,671	\$ 5,687,158,237
Receipts				
Employer Contributions	\$ 414,639,329	\$ 192,683,781	\$ 79,409,880	\$ 686,732,990
Employee Contributions	58,681,618	37,413,408	15,729,968	111,824,994
State Aid	48,458,136	23,744,040	9,785,522	81,987,698
Supplemental State Assistance	0	0	0	0
Investment Income (includes investment expenses)	47,094,727	30,720,665	9,316,547	87,131,939
Other Receipts	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Receipts	\$ 568,873,810	\$ 284,561,894	\$ 114,241,917	\$ 967,677,621
Disbursements				
Benefit Payments	\$ 502,054,427	\$ 251,228,177	\$ 100,636,366	\$ 853,918,970
Refund of Contributions	5,133,830	2,345,774	799,086	8,278,690
Administrative Expenses	7,360,764	2,681,161	949,177	10,991,102
PAF Transfer at Year End	0	0	0	0
Other Disbursements	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Disbursements	\$ 514,549,021	\$ 256,255,112	\$ 102,384,629	\$ 873,188,762
Assets as of July 1, 2020	\$ 3,123,704,713	\$ 2,039,540,424	\$ 618,401,959	\$ 5,781,647,095

Note: Numbers may not add due to rounding.

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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V – 10 and Table V – 11 provide information on the City’s Funding Policy for FYE 2020 and FYE 2021. The differences between the MMO and the City’s Funding Policy are:

- The City’s Funding Policy amortized the initial July 1, 1985 unfunded actuarial liability over 34 years which has since expired in 2019. Chapter 10 under Act 44 allowed for the amortization of the entire unfunded actuarial liability as of July 1, 2009 to be “fresh started” over a 30-year period for MMO purposes.
- The normal cost portion of the City’s Funding Policy payment is based on actual fiscal year payroll, whereas the MMO is based on the prior year’s estimated payroll for that year.
- **Interest does not accumulate on the MMO, as long as the payment is made by the end of the fiscal year.** This has the impact of creating systematic losses each year which get offset by assumed interest on contributions received before year-end.
- Both the City’s Funding Policy and the MMO utilize valuation results developed in the previous year (e.g., the July 1, 2020 valuation report will determine FYE 2022 contribution amounts). However, no interest is added to the MMO for this delay. For the Funding Policy, interest is added to the amortized amount to reflect this delay.
- The MMO reflects amortization of prior years’ City contributions above past MMOs as actuarial gains.

Starting with FYE 2007-2008, the MMO recognized actuarial gains and losses every other year, in order to coincide with the filing of the Act 205 forms. Beginning for FYE 2012, gains and losses are recognized annually. The City’s Funding Policy recognizes actuarial gains and losses on an annual basis.

Table V – 10 develops the amortized amounts for the current year under the City’s Funding Policy. For additional details on the amortized amounts by plan, refer to Appendix B.

Table V – 11 provides the estimated FYE 2022 and updated FYE 2021 contribution amount under the City’s Funding Policy. The estimated FYE 2022 contribution will be updated in next year’s actuarial valuation report based upon the July 1, 2021 payroll.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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SECTION V – CONTRIBUTIONS AND MINIMUM MUNICIPAL OBLIGATION

Table V-10 Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Total (\$ thousands)					
	7/1/2020 Outstanding Balance	7/1/2021 Expected Balance	Remaining Years	FY 2022 Payment Beginning-of-Year	FY 2022 Payment End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
Remaining	\$ 5,605,279	\$ 5,244,855		\$ 678,382	\$ 729,261
2. Changes in UAL due to					
a. Actuarial Experience	\$ 132,999	\$ 142,974	20	\$ 13,046	\$ 14,025
b. Assumption Changes	57,077	61,357	15	6,466	6,951
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ 190,076</u>	<u>\$ 204,331</u>		<u>\$ 19,512</u>	<u>\$ 20,976</u>
3. Total [1c. + 2e.]	\$ 5,795,355	\$ 5,449,186		\$ 697,894	\$ 750,236

Table V-11 City's Funding Policy Contributions*					
Fiscal Year	2022	% of Pay	2021	% of Pay	
Estimated FY Payroll	\$ 1,984,618		\$ 1,921,217	**	
Normal Cost (with Expenses)	\$ 203,078	10.23%	\$ 196,366	10.22%	
Employee Contributions	<u>(116,848)</u>	5.89%	<u>(108,989)</u>	5.67%	
City Normal Cost	\$ 86,230	4.34%	\$ 87,378	4.55%	
Amortization Payment	<u>697,894</u>	35.17%	<u>727,836</u>	37.88%	
City's Funding Policy	\$ 784,124	39.51%	\$ 815,214	42.43%	

* Assuming beginning-of-year payment.

** FY 2021 Payroll for the City's Funding Policy is the final payroll for the prior year. All other payroll is estimated based upon the prior year's data used for the actuarial valuation.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

The data for this valuation was provided by the Board of Pensions as of July 1, 2020. Cheiron did not audit any of the data. However, we did perform an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. The following is a list of data charts contained in this section:

- A-1: Active Member Data by Plan
- A-2: Non-Active Member Data, Counts, by Plan
- A-3: Non-Active Member Data, Total Annual Benefits, by Plan
- A-4: Non-Active Member Data, Average Annual Benefits, by Plan
- A-5 through A-24: Age/Service Distribution for Active Participants, Counts and Average Salary for all Plans
- A-25: Reconciliation of Plan Membership
- A-26 through A-30: Age and Benefit Distributions for Non-Active Member Data

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

**Table A-1
Active Member Data**

	July 1, 2020	July 1, 2019	% Change		July 1, 2020	July 1, 2019	% Change
<u>1967 Municipal</u>				<u>1987 Elected</u>			
Count	904	1,010	-10.5%	Count	23	24	-4.2%
Average Age	57.2	56.4	1.5%	Average Age	53.7	58.8	-8.7%
Average Service	32.2	31.2	3.2%	Average Service	15.5	22.8	-32.2%
Average Salary	\$ 81,035	\$ 70,399	15.1%	Average Salary	\$ 142,258	\$ 138,579	2.7%
Total Annual Salary	\$ 73,255,916	\$ 71,102,802	3.0%	Total Annual Salary	\$ 3,271,935	\$ 3,325,892	-1.6%
<u>1967 Police</u>				<u>1987 Police</u>			
Count	172	186	-7.5%	Count	5,868	5,889	-0.4%
Average Age	58.5	57.6	1.6%	Average Age	42.1	41.6	1.1%
Average Service	34.1	33.2	2.9%	Average Service	15.9	15.4	3.2%
Average Salary	\$ 97,363	\$ 100,478	-3.1%	Average Salary	\$ 84,889	\$ 83,244	2.0%
Total Annual Salary	\$ 16,746,388	\$ 18,688,984	-10.4%	Total Annual Salary	\$ 498,127,512	\$ 490,223,115	1.6%
<u>1967 Fire</u>				<u>1987 Fire</u>			
Count	64	69	-7.2%	Count	2,485	2,343	6.1%
Average Age	60.2	59.0	2.0%	Average Age	41.2	41.2	0.2%
Average Service	34.9	33.8	3.3%	Average Service	12.6	12.5	0.3%
Average Salary	\$ 99,651	\$ 100,173	-0.5%	Average Salary	\$ 83,250	\$ 82,601	0.8%
Total Annual Salary	\$ 6,377,659	\$ 6,911,952	-7.7%	Total Annual Salary	\$ 206,876,105	\$ 193,533,912	6.9%
<u>1987 Municipal</u>				<u>2010 Municipal</u>			
Count	14,127	14,989	-5.8%	Count	1,276	1,447	-11.8%
Average Age	46.9	46.0	2.1%	Average Age	39.1	37.8	3.3%
Average Service	13.8	12.8	7.6%	Average Service	4.0	2.9	36.9%
Average Salary	\$ 61,807	\$ 58,466	5.7%	Average Salary	\$ 55,928	\$ 53,349	4.8%
Total Annual Salary	\$ 873,143,803	\$ 876,350,753	-0.4%	Total Annual Salary	\$ 71,363,783	\$ 77,195,493	-7.6%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

Table A-1							
Active Member Data (continued)							
	July 1, 2020	July 1, 2019	% Change		July 1, 2020	July 1, 2019	% Change
<u>2016 Municipal</u>				<u>Total City</u>			
Count	3,973	2,639	50.5%	Count	28,892	28,596	1.0%
Average Age	38.1	38.2	-0.1%	Average Age	44.3	44.0	0.6%
Average Service	1.7	1.3	29.8%	Average Service	12.8	12.6	1.3%
Average Salary	\$ 43,306	\$ 39,872	8.6%	Average Salary	\$ 66,497	\$ 64,434	3.2%
Total Annual Salary	\$ 172,054,352	\$ 105,221,980	63.5%	Total Annual Salary	\$ 1,921,217,453	\$ 1,842,554,883	4.3%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

Table A-2 Non-Active Member Data Count							
	July 1, 2020	July 1, 2019	% Change		July 1, 2020	July 1, 2019	% Change
<u>Total City</u>				<u>1987 Municipal Plan</u>			
Retired	22,249	22,241	0.0%	Retired	3,205	2,875	11.5%
Disabled	3,833	3,883	-1.3%	Disabled	643	599	7.3%
Beneficiary	<u>8,471</u>	<u>8,574</u>	-1.2%	Beneficiary	<u>559</u>	<u>511</u>	9.4%
In Pay Status Total	34,553	34,698	-0.4%	In Pay Status Total	4,407	3,985	10.6%
DROP	1,642	2,069	-20.6%	DROP	600	768	-21.9%
Deferred Vested	929	965	-3.7%	Deferred Vested	700	719	-2.6%
<u>1967 Municipal Plan</u>				<u>1987 Elected Plan</u>			
Retired	11,655	11,923	-2.2%	Retired	23	18	27.8%
Disabled	1,232	1,290	-4.5%	Disabled	0	0	0.0%
Beneficiary	<u>4,599</u>	<u>4,726</u>	-2.7%	Beneficiary	<u>4</u>	<u>4</u>	0.0%
In Pay Status Total	17,486	17,939	-2.5%	In Pay Status Total	27	22	22.7%
DROP	533	712	-25.1%	DROP	0	1	-100.0%
Deferred Vested	153	165	-7.3%	Deferred Vested	0	0	0.0%
<u>1967 Police Plan</u>				<u>1987 Police Plan</u>			
Retired	4,748	4,890	-2.9%	Retired	637	548	16.2%
Disabled	1,096	1,153	-4.9%	Disabled	533	497	7.2%
Beneficiary	<u>2,269</u>	<u>2,302</u>	-1.4%	Beneficiary	<u>184</u>	<u>174</u>	5.7%
In Pay Status Total	8,113	8,345	-2.8%	In Pay Status Total	1,354	1,219	11.1%
DROP	149	189	-21.2%	DROP	265	281	-5.7%
Deferred Vested	0	1	-100.0%	Deferred Vested	68	70	-2.9%
<u>1967 Fire Plan</u>				<u>1987 Fire Plan</u>			
Retired	1,773	1,809	-2.0%	Retired	208	178	16.9%
Disabled	245	260	-5.8%	Disabled	84	84	0.0%
Beneficiary	<u>777</u>	<u>785</u>	-1.0%	Beneficiary	<u>79</u>	<u>72</u>	9.7%
In Pay Status Total	2,795	2,854	-2.1%	In Pay Status Total	371	334	11.1%
DROP	36	51	-29.4%	DROP	59	67	-11.9%
Deferred Vested	0	0	0.0%	Deferred Vested	7	10	-30.0%
<u>2010 Municipal Plan</u>				<u>2016 Municipal Plan</u>			
Deferred Vested	0	0	0.0%	Deferred Vested	1	0	0.0%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-3 Non-Active Member Data Total Annual Benefit							
	July 1, 2020	July 1, 2019	% Change		July 1, 2020	July 1, 2019	% Change
Total City				1987 Municipal Plan			
Retired	\$ 613,425,464	\$ 600,911,130	2.1%	Retired	\$ 48,062,551	\$ 41,491,071	15.8%
Disabled	89,694,509	88,536,268	1.3%	Disabled	12,904,443	11,772,973	9.6%
Beneficiary	<u>85,903,070</u>	<u>84,619,926</u>	1.5%	Beneficiary	<u>4,724,310</u>	<u>4,249,791</u>	11.2%
In Pay Status Total	\$ 789,023,043	\$ 774,067,324	1.9%	In Pay Status Total	\$ 65,691,304	\$ 57,513,835	14.2%
DROP (pension)	\$ 66,439,835	\$ 80,793,516	-17.8%	DROP (pension)	\$ 12,236,239	\$ 14,996,451	-18.4%
DROP (account balance)	155,614,261	156,865,987	-0.8%	DROP (account balance)	27,223,471	25,791,195	5.6%
Deferred Vested	\$ 12,973,470	\$ 13,456,373	-3.6%	Deferred Vested	\$ 9,409,002	\$ 9,623,343	-2.2%
1967 Municipal Plan				1987 Elected Plan			
Retired	\$ 324,532,951	\$ 322,875,845	0.5%	Retired	\$ 1,800,713	\$ 1,363,881	32.0%
Disabled	24,520,547	25,174,039	-2.6%	Disabled	0	0	0.0%
Beneficiary	<u>43,131,363</u>	<u>43,132,414</u>	0.0%	Beneficiary	<u>118,681</u>	<u>118,681</u>	0.0%
In Pay Status Total	\$ 392,184,861	\$ 391,182,298	0.3%	In Pay Status Total	\$ 1,919,394	\$ 1,482,562	29.5%
DROP (pension)	\$ 26,223,128	\$ 33,915,222	-22.7%	DROP (pension)	\$ 0	\$ 123,864	-100.0%
DROP (account balance)	64,499,067	71,618,588	-9.9%	DROP (account balance)	0	360,680	-100.0%
Deferred Vested	\$ 2,336,843	\$ 2,555,583	-8.6%	Deferred Vested	\$ 0	\$ 0	0.0%
1967 Police Plan				1987 Police Plan			
Retired	\$ 147,679,475	\$ 148,731,537	-0.7%	Retired	\$ 19,460,498	\$ 15,588,516	24.8%
Disabled	21,743,531	22,609,313	-3.8%	Disabled	22,173,986	20,364,908	8.9%
Beneficiary	<u>23,741,426</u>	<u>23,493,185</u>	1.1%	Beneficiary	<u>2,862,327</u>	<u>2,565,523</u>	11.6%
In Pay Status Total	\$ 193,164,432	\$ 194,834,035	-0.9%	In Pay Status Total	\$ 44,496,811	\$ 38,518,947	15.5%
DROP (pension)	\$ 11,207,260	\$ 13,480,697	-16.9%	DROP (pension)	\$ 11,596,960	\$ 11,880,222	-2.4%
DROP (account balance)	27,435,326	26,611,678	3.1%	DROP (account balance)	23,917,654	18,648,052	28.3%
Deferred Vested	\$ 0	\$ 13,436	-100.0%	Deferred Vested	\$ 1,073,182	\$ 1,100,281	-2.5%
1967 Fire Plan				1987 Fire Plan			
Retired	\$ 66,163,147	\$ 66,344,134	-0.3%	Retired	\$ 5,726,129	\$ 4,516,146	26.8%
Disabled	4,993,762	5,256,795	-5.0%	Disabled	3,358,240	3,358,240	0.0%
Beneficiary	<u>10,134,253</u>	<u>10,018,186</u>	1.2%	Beneficiary	<u>1,190,710</u>	<u>1,042,146</u>	14.3%
In Pay Status Total	\$ 81,291,162	\$ 81,619,115	-0.4%	In Pay Status Total	\$ 10,275,079	\$ 8,916,532	15.2%
DROP (pension)	\$ 2,654,538	\$ 3,626,280	-26.8%	DROP (pension)	\$ 2,521,710	\$ 2,770,780	-9.0%
DROP (account balance)	6,754,159	8,706,961	-22.4%	DROP (account balance)	5,784,584	5,128,832	12.8%
Deferred Vested	\$ 0	\$ 0	0.0%	Deferred Vested	\$ 120,938	\$ 163,730	-26.1%
2010 Municipal Plan				2016 Municipal Plan			
Deferred Vested	\$ 0	\$ 0	0.0%	Deferred Vested	\$ 33,505	\$ 0	0.0%

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

**Table A-4
Non-Active Member Data
Average Annual Benefit**

	July 1, 2020	July 1, 2019	% Change		July 1, 2020	July 1, 2019
Total City				1987 Municipal Plan		
Retired	\$ 27,571	\$ 27,018	2.0%	Retired	\$ 14,996	\$ 14,432
Disabled	23,401	22,801	2.6%	Disabled	20,069	19,654
Beneficiary	10,141	9,869	2.8%	Beneficiary	8,451	8,317
In Pay Status Total	\$ 22,835	\$ 22,309	2.4%	In Pay Status Total	\$ 14,906	\$ 14,433
DROP (pension)	\$ 40,463	\$ 39,050	3.6%	DROP (pension)	\$ 20,394	\$ 19,527
DROP (account balance)	94,771	75,817	25.0%	DROP (account balance)	45,372	33,582
Deferred Vested	\$ 13,965	\$ 13,944	0.1%	Deferred Vested	\$ 13,441	\$ 13,384
1967 Municipal Plan				1987 Elected Plan		
Retired	\$ 27,845	\$ 27,080	2.8%	Retired	\$ 78,292	\$ 75,771
Disabled	19,903	19,515	2.0%	Disabled	0	0
Beneficiary	9,378	9,127	2.8%	Beneficiary	29,670	29,670
In Pay Status Total	\$ 22,429	\$ 21,806	2.9%	In Pay Status Total	\$ 71,089	\$ 67,389
DROP (pension)	\$ 49,199	\$ 47,634	3.3%	DROP (pension)	\$ 0	\$ 123,864
DROP (account balance)	121,011	100,588	20.3%	DROP (account balance)	0	360,680
Deferred Vested	\$ 15,273	\$ 15,488	-1.4%	Deferred Vested	\$ 0	\$ 0
1967 Police Plan				1987 Police Plan		
Retired	\$ 31,104	\$ 30,415	2.3%	Retired	\$ 30,550	\$ 28,446
Disabled	19,839	19,609	1.2%	Disabled	41,602	40,976
Beneficiary	10,463	10,206	2.5%	Beneficiary	15,556	14,744
In Pay Status Total	\$ 23,809	\$ 23,347	2.0%	In Pay Status Total	\$ 32,863	\$ 31,599
DROP (pension)	\$ 75,217	\$ 71,326	5.5%	DROP (pension)	\$ 43,762	\$ 42,278
DROP (account balance)	184,130	140,803	30.8%	DROP (account balance)	90,255	66,363
Deferred Vested	\$ -	\$ 13,436	-100.0%	Deferred Vested	\$ 15,782	\$ 15,718
1967 Fire Plan				1987 Fire Plan		
Retired	\$ 37,317	\$ 36,674	1.8%	Retired	\$ 27,529	\$ 25,372
Disabled	20,383	20,218	0.8%	Disabled	39,979	39,979
Beneficiary	13,043	12,762	2.2%	Beneficiary	15,072	14,474
In Pay Status Total	\$ 29,084	\$ 28,598	1.7%	In Pay Status Total	\$ 27,696	\$ 26,696
DROP (pension)	\$ 73,737	\$ 71,104	3.7%	DROP (pension)	\$ 42,741	\$ 41,355
DROP (account balance)	187,616	170,725	9.9%	DROP (account balance)	98,044	76,550
Deferred Vested	\$ 0	\$ 0	0.0%	Deferred Vested	\$ 17,277	\$ 16,373
2010 Municipal Plan				2016 Municipal Plan		
Deferred Vested	\$ 0	\$ 0	0.0%	Deferred Vested	\$ 33,505	\$ 0

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

**Table A-5
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Total City**

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	189	312	37	0	0	0	0	0	0	538
25 to 29	428	1,766	500	42	0	0	0	0	0	2,736
30 to 34	292	1,466	1,435	571	47	0	0	0	0	3,811
35 to 39	164	897	971	1,207	431	49	0	0	0	3,719
40 to 44	139	626	624	852	954	467	33	0	0	3,695
45 to 49	105	492	442	567	735	1,115	287	33	0	3,776
50 to 54	89	439	395	470	604	1,007	801	512	0	4,317
55 to 59	71	295	298	407	520	669	542	766	0	3,568
60 to 64	38	219	304	255	262	308	204	354	0	1,944
65 & up	24	109	161	154	93	104	40	103	0	788
Total	1,539	6,621	5,167	4,525	3,646	3,719	1,907	1,768	0	28,892

**Table A-6
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Total City**

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 47,983	\$ 46,034	\$ 39,573	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,274
25 to 29	49,216	57,602	61,125	60,027	0	0	0	0	0	56,972
30 to 34	49,906	57,724	65,944	67,770	59,557	0	0	0	0	61,748
35 to 39	52,034	57,233	66,431	72,488	72,064	80,005	0	0	0	66,375
40 to 44	54,738	54,049	62,488	70,598	74,921	82,945	81,973	0	0	68,606
45 to 49	43,066	52,826	59,250	67,125	72,745	84,856	86,790	84,231	0	71,645
50 to 54	47,550	50,130	58,566	61,712	64,761	84,102	86,656	87,494	0	73,290
55 to 59	47,021	49,358	54,684	53,154	57,149	76,779	84,373	86,223	0	69,700
60 to 64	38,224	50,062	50,972	51,919	55,277	71,842	81,948	81,399	0	63,423
65 & up	37,324	56,834	57,141	49,136	53,624	62,282	71,072	74,847	0	58,215
Total	\$ 48,920	\$ 55,218	\$ 62,022	\$ 65,937	\$ 67,774	\$ 81,186	\$ 85,116	\$ 84,925	\$ 0	\$ 66,497

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APPENDIX A – MEMBERSHIP INFORMATION

**Table A-7
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 67)**

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	1	0	0	0	0	0	1
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	1	0	0	0	0	0	0	0	1
45 to 49	0	0	1	0	0	2	10	3		16
50 to 54	0	1	0	0	0	2	68	180		251
55 to 59	0	0	2	0	0	2	66	339		409
60 to 64	0	0	1	0	1	1	25	136		164
65 & up	0	0	0	0	1	0	9	52		62
Total	0	2	4	1	2	7	178	710		904

**Table A-8
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 67)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	89,861	0	0	0	0	0	89,861
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	55,976	0	0	0	0	0	0	0	55,976
45 to 49	0	0	63,377	0	0	78,456	75,626	66,517		73,506
50 to 54	0	43,110	0	0	0	72,442	85,195	83,904		84,000
55 to 59	0	0	74,970	0	0	45,776	78,322	82,448		81,566
60 to 64	0	0	50,516	0	122,596	62,817	96,271	77,661		80,516
65 & up	0	0	0	0	64,809	0	70,347	68,978		69,109
Total	\$ 0	\$ 49,543	\$ 65,958	\$ 89,861	\$ 93,702	\$ 65,166	\$ 82,914	\$ 80,846		\$ 81,035

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

**Table A-9
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Police (Plan 67)**

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	1	7	19		27
55 to 59	0	0	0	0	1	0	0	85		86
60 to 64	0	0	0	0	0	0	0	48		48
65 & up	0	0	0	0	0	0	0	11		11
Total	0	0	0	0	1	1	7	163		172

**Table A-10
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Police (Plan 67)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	94,365	85,143	89,220		88,354
55 to 59	0	0	0	0	82,778	0	0	100,745		100,537
60 to 64	0	0	0	0	0	0	0	96,325		96,325
65 & up	0	0	0	0	0	0	0	99,192		99,192
Total	\$ 0	\$ 0	\$ 0	\$ 0	\$ 82,778	\$ 94,365	\$ 85,143	\$ 97,995		\$ 97,363

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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APPENDIX A – MEMBERSHIP INFORMATION

**Table A-11
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Fire (Plan 67)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	2	7	9
55 to 59	0	0	0	0	0	0	1	19	20
60 to 64	0	0	0	0	0	0	0	28	28
65 & up	0	0	0	0	0	0	0	7	7
Total	0	0	0	0	0	0	3	61	64

**Table A-12
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Fire (Plan 67)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	82,778	91,518	89,576
55 to 59	0	0	0	0	0	0	82,778	106,025	104,863
60 to 64	0	0	0	0	0	0	0	97,869	97,869
65 & up	0	0	0	0	0	0	0	104,840	104,840
Total	\$ 0	\$ 82,778	\$ 100,481	\$ 99,651					

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**Table A-13
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	0	55	29	0	0	0	0	0	84
25 to 29	3	300	285	25	0	0	0	0	613
30 to 34	5	338	852	328	38	0	0	0	1,561
35 to 39	8	236	633	621	251	32	0	0	1,781
40 to 44	9	183	472	537	527	189	29	0	1,946
45 to 49	7	116	376	392	439	467	127	13	1,937
50 to 54	6	116	346	390	440	538	287	83	2,206
55 to 59	3	76	260	404	467	503	242	135	2,090
60 to 64	1	73	277	254	247	273	132	83	1,340
65 & up	0	30	149	154	90	98	24	24	569
Total	42	1,523	3,679	3,105	2,499	2,100	841	338	14,127

**Table A-14
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 0	\$ 36,158	\$ 33,037	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,080
25 to 29	43,308	51,768	52,866	48,133	0	0	0	0	52,089
30 to 34	45,025	58,141	57,999	54,986	54,471	0	0	0	57,269
35 to 39	56,990	64,395	60,620	59,803	59,926	77,241	0	0	61,020
40 to 44	62,117	60,380	58,266	61,524	63,994	74,314	80,307	0	62,820
45 to 49	48,765	67,239	56,720	59,005	62,726	79,875	82,432	82,277	66,585
50 to 54	55,712	58,352	56,584	57,191	56,787	80,537	78,636	77,310	66,313
55 to 59	71,383	61,963	53,444	52,913	53,764	73,457	79,137	75,394	62,958
60 to 64	36,382	61,477	50,636	51,572	53,352	70,009	74,519	66,807	59,195
65 & up	0	71,981	56,151	49,136	52,573	60,679	67,585	57,815	55,853
Total	\$ 54,671	\$ 58,662	\$ 56,675	\$ 56,970	\$ 58,574	\$ 75,788	\$ 78,450	\$ 72,772	\$ 61,807

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**Table A-15
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Elected (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0
35 to 39	2	0	0	0	0	0	0	0	2
40 to 44	1	0	0	0	0	0	0	0	1
45 to 49	1	0	2	0	0	0	1	0	4
50 to 54	0	1	3	0	0	1	0	1	6
55 to 59	1	1	1	0	0	1	0	0	4
60 to 64	0	0	0	1	0	0	1	2	4
65 & up	0	0	0	0	0	0	0	2	2
Total	5	2	6	1	0	2	2	5	23

**Table A-16
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Elected (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0
35 to 39	133,151	0	0	0	0	0	0	0	133,151
40 to 44	133,151	0	0	0	0	0	0	0	133,151
45 to 49	133,151	0	133,151	0	0	0	142,662	0	135,529
50 to 54	0	133,151	136,321	0	0	133,151	0	133,151	134,736
55 to 59	133,151	185,665	135,868	0	0	139,050	0	0	148,434
60 to 64	0	0	0	139,945	0	0	224,183	131,910	156,987
65 & up	0	0	0	0	0	0	0	150,135	150,135
Total	\$ 133,151	\$ 159,408	\$ 135,189	\$ 139,945	\$ 0	\$ 136,101	\$ 183,423	\$ 139,448	\$ 142,258

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**Table A-17
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Police (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	51	47	0	0	0	0	0	0	0	98
25 to 29	47	567	97	13	0	0	0	0	0	724
30 to 34	9	274	273	203	6	0	0	0	0	765
35 to 39	0	80	98	435	145	13	0	0	0	771
40 to 44	3	38	39	212	310	256	3	0	0	861
45 to 49	3	9	15	132	185	543	126	14	0	1,027
50 to 54	1	3	7	51	93	341	332	212	0	1,040
55 to 59	0	0	1	1	29	118	148	160	0	457
60 to 64	0	0	1	0	8	24	30	43	0	106
65 & up	0	0	2	0	0	6	5	6	0	19
Total	114	1,018	533	1,047	776	1,301	644	435		5,868

**Table A-18
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Police (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up		
Under 25	\$ 61,319	\$ 73,532	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 67,176
25 to 29	62,539	76,474	82,902	80,103	0	0	0	0	0	76,496
30 to 34	64,474	77,800	83,860	85,336	80,846	0	0	0	0	81,829
35 to 39	0	76,343	84,413	85,873	88,746	84,473	0	0	0	85,215
40 to 44	60,980	78,377	83,583	85,302	87,954	88,532	97,812	0	0	86,793
45 to 49	60,980	77,443	83,626	85,163	85,464	87,661	90,200	90,151	0	87,063
50 to 54	59,601	80,018	83,420	83,504	85,512	86,138	90,885	93,754	0	88,959
55 to 59	0	0	82,778	82,778	86,445	85,548	88,011	90,775	0	88,221
60 to 64	0	0	82,778	0	84,204	84,596	90,034	87,053	0	87,085
65 & up	0	0	86,917	0	0	88,469	84,433	87,800	0	87,032
Total	\$ 62,038	\$ 76,775	\$ 83,762	\$ 85,374	\$ 87,066	\$ 87,157	\$ 90,033	\$ 91,798		\$ 84,889

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**Table A-19
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Fire (Plan 87)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	16	17	6	0	0	0	0	0	39
25 to 29	50	120	60	4	0	0	0	0	234
30 to 34	43	142	215	39	3	0	0	0	442
35 to 39	15	96	174	151	35	4	0	0	475
40 to 44	4	35	79	103	117	22	1	0	361
45 to 49	4	20	23	43	111	103	23	3	330
50 to 54	2	8	14	29	71	124	105	10	363
55 to 59	0	2	4	2	23	45	85	28	189
60 to 64	0	1	0	0	6	10	16	14	47
65 & up	0	0	0	0	2	0	2	1	5
Total	134	441	575	371	368	308	232	56	2,485

**Table A-20
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Fire (Plan 87)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 59,601	\$ 66,050	\$ 69,721	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 63,969
25 to 29	59,601	71,310	75,814	69,118	0	0	0	0	69,926
30 to 34	59,601	72,741	79,711	83,290	81,398	0	0	0	75,843
35 to 39	59,601	72,181	81,679	86,095	90,000	87,592	0	0	81,129
40 to 44	59,601	74,384	80,609	87,642	89,611	92,095	82,778	0	85,403
45 to 49	59,601	74,198	81,153	85,771	91,170	92,770	94,592	82,778	89,018
50 to 54	59,601	71,778	79,949	84,188	86,995	93,679	96,324	93,293	91,168
55 to 59	0	66,923	75,881	86,917	87,816	90,913	97,664	100,603	94,394
60 to 64	0	63,737	0	0	84,709	92,182	96,805	95,530	93,194
65 & up	0	0	0	0	95,309	0	82,778	82,778	87,790
Total	\$ 59,601	\$ 72,104	\$ 79,956	\$ 85,864	\$ 89,386	\$ 92,730	\$ 96,501	\$ 96,756	\$ 83,250

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**Table A-21
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 10)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	0	30	2	0	0	0	0	0	32
25 to 29	0	211	57	0	0	0	0	0	268
30 to 34	0	214	89	0	0	0	0	0	303
35 to 39	0	112	62	0	0	0	0	0	174
40 to 44	1	90	30	0	0	0	0	0	121
45 to 49	0	87	23	0	0	0	0	0	110
50 to 54	0	65	23	0	0	0	0	0	88
55 to 59	0	64	28	0	0	0	0	0	92
60 to 64	0	31	24	0	0	0	0	0	55
65 & up	0	23	10	0	0	0	0	0	33
Total	1	927	348	0	0	0	0	0	1,276

**Table A-22
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 10)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 0	\$ 39,540	\$ 43,893	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 39,812
25 to 29	0	49,116	50,453	0	0	0	0	0	49,400
30 to 34	0	56,351	54,028	0	0	0	0	0	55,668
35 to 39	0	60,477	54,756	0	0	0	0	0	58,438
40 to 44	133,151	59,603	52,709	0	0	0	0	0	58,501
45 to 49	0	62,252	57,015	0	0	0	0	0	61,157
50 to 54	0	63,021	58,450	0	0	0	0	0	61,826
55 to 59	0	49,791	58,735	0	0	0	0	0	52,513
60 to 64	0	68,164	54,127	0	0	0	0	0	62,038
65 & up	0	72,409	65,934	0	0	0	0	0	70,447
Total	\$ 133,151	\$ 56,336	\$ 54,618	\$ 0	\$ 55,928				

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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**Table A-23
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 16)**

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	122	163	0	0	0	0	0	0	285
25 to 29	328	568	1	0	0	0	0	0	897
30 to 34	235	498	6	0	0	0	0	0	739
35 to 39	139	373	4	0	0	0	0	0	516
40 to 44	121	279	4	0	0	0	0	0	404
45 to 49	90	260	2	0	0	0	0	0	352
50 to 54	80	245	2	0	0	0	0	0	327
55 to 59	67	152	2	0	0	0	0	0	221
60 to 64	37	114	1	0	0	0	0	0	152
65 & up	24	56	0	0	0	0	0	0	80
Total	1,243	2,708	22	0	0	0	0	0	3,973

**Table A-24
Distribution of Active Participants (Excludes DROP Participants) as of July 1, 2020 -- Municipal (Plan 16)**

AVERAGE SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 40,884	\$ 40,546	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 40,691
25 to 29	45,777	42,102	29,896	0	0	0	0	0	43,433
30 to 34	47,678	42,703	62,280	0	0	0	0	0	44,444
35 to 39	49,765	43,782	63,030	0	0	0	0	0	45,543
40 to 44	52,578	42,233	70,438	0	0	0	0	0	45,610
45 to 49	40,290	40,746	49,940	0	0	0	0	0	40,681
50 to 54	46,485	41,435	49,571	0	0	0	0	0	42,720
55 to 59	44,645	41,745	41,904	0	0	0	0	0	42,626
60 to 64	38,273	37,710	36,944	0	0	0	0	0	37,842
65 & up	37,324	42,323	0	0	0	0	0	0	40,823
Total	\$ 45,965	\$ 41,973	\$ 57,146	\$ 0	\$ 43,306				

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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Table A-25 Reconciliation of Plan Membership										
	1967 Plan			Plan 87				Plan '10	Plan '16	Total City
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	Municipal	
Active										
Active July 1, 2019	1,010	186	69	14,989	24	5,889	2,343	1,447	2,639	28,596
New Entrants and Rehires	5	1	0	271	6	198	189	30	1,635	2,335
Refunded Contributions	0	0	0	-163	0	-22	-4	-59	-60	-308
Non-Vested Terminations	0	0	0	-39	0	-7	-1	-10	-21	-78
Terminated Vested	-3	0	0	-6	0	-3	-1	0	-2	-15
Became Disabled	-3	0	0	-41	0	-16	0	0	0	-60
Retired	-35	-4	-2	-134	-7	-43	-12	0	0	-237
Entered DROP	-45	-8	-3	-49	0	-34	-8	0	0	-147
Net Other Terminations	-25	-3	0	-701	0	-94	-21	-132	-218	-1,194
Active July 1, 2020	904	172	64	14,127	23	5,868	2,485	1,276	3,973	28,892
Retired										
Retired July 1, 2019	11,923	4,890	1,809	2,875	18	548	178	0	0	22,241
New Retirees	277	54	21	393	8	100	31	0	0	884
Died with Beneficiary Payable	-99	-59	-24	-6	0	-1	0	0	0	-189
Died without Beneficiary Payable	-439	-134	-33	-54	-2	-5	-1	0	0	-668
Net Other Terminations	-7	-3	0	-3	-1	-5	0	0	0	-19
Retired July 1, 2020	11,655	4,748	1,773	3,205	23	637	208	0	0	22,249
Beneficiary										
Beneficiary July 1, 2019	4,726	2,302	785	511	4	174	72	0	0	8,574
New Beneficiaries	168	92	40	54	0	10	9	0	0	373
Deaths	-286	-123	-45	-5	0	0	-2	0	0	-461
Net Other Terminations	-9	-2	-3	-1	0	0	0	0	0	-15
Beneficiary July 1, 2020	4,599	2,269	777	559	4	184	79	0	0	8,471

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
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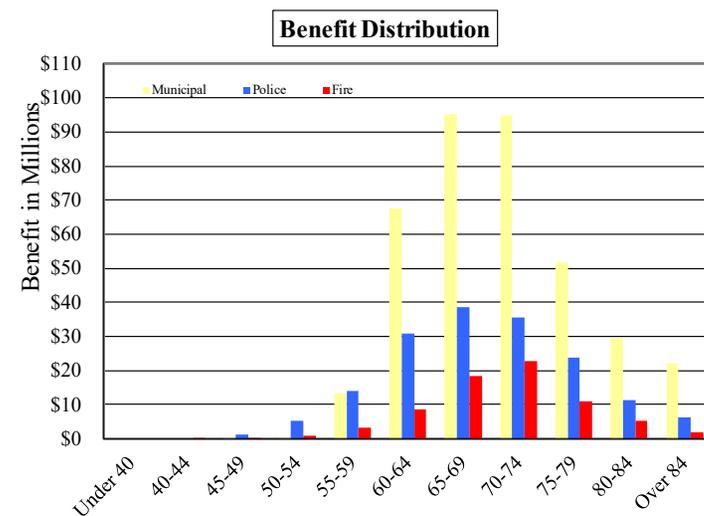
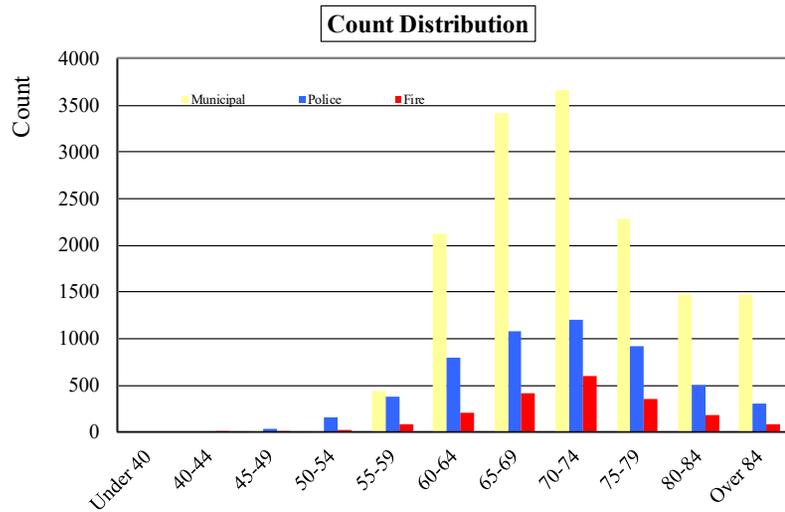
Table A-25 Reconciliation of Plan Membership (continued)										
	1967 Plan			Plan 87				Plan '10	Plan '16	Total City
	Municipal	Police	Fire	Municipal	Elected	Police	Fire	Municipal	Municipal	
Disabled										
Disabled July 1, 2019	1,290	1,153	260	599	0	497	84	0	0	3,883
New Disabilities	9	1	1	66	0	37	0	0	0	114
Died with Beneficiary Payable	-8	-11	-4	-5	0	0	0	0	0	-28
Died without Beneficiary Payable	-59	-47	-12	-17	0	-1	0	0	0	-136
Net Other Terminations	0	0	0	0	0	0	0	0	0	0
Disabled July 1, 2020	1,232	1,096	245	643	0	533	84	0	0	3,833
Terminated Vested										
Terminated Vested July 1, 2019	165	1	0	719	0	70	10	0	0	965
New Vested Terminations	3	0	0	8	0	4	1	0	1	17
Retired	-14	-1	0	-20	0	-5	-3	0	0	-43
Net Other Terminations	-1	0	0	-7	0	-1	-1	0	0	-10
Terminated Vested July 1, 2020	153	0	0	700	0	68	7	0	1	929
DROP										
DROP July 1, 2019	712	189	51	768	1	281	67	0	0	2,069
New DROP Participants	46	9	3	49	0	34	8	0	0	149
Retired	-222	-47	-18	-211	-1	-49	-15	0	0	-563
Net Other Terminations	-3	-2	0	-6	0	-1	-1	0	0	-13
DROP July 1, 2020	533	149	36	600	0	265	59	0	0	1,642

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

**Table A-26
Age Distribution of Retired Members as of July 1, 2020**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	0	\$ 0	0	\$ 0	0	\$ 0
40-44	0	0	0	0	1	8,062
45-49	1	9,206	34	1,097,491	5	77,256
50-54	15	348,626	161	5,310,157	29	877,774
55-59	440	13,240,621	380	13,918,982	90	3,107,665
60-64	2,126	67,466,359	794	30,902,031	207	8,510,490
65-69	3,416	95,262,782	1,079	38,691,379	417	18,330,318
70-74	3,663	94,692,975	1,201	35,676,530	603	22,773,124
75-79	2,279	51,736,499	924	23,871,541	357	11,062,983
80-84	1,468	29,445,395	502	11,343,581	184	5,244,994
Over 84	1,475	22,193,752	310	6,328,281	88	1,896,610
Total	14,883	374,396,215	5,385	167,139,973	1,981	71,889,276

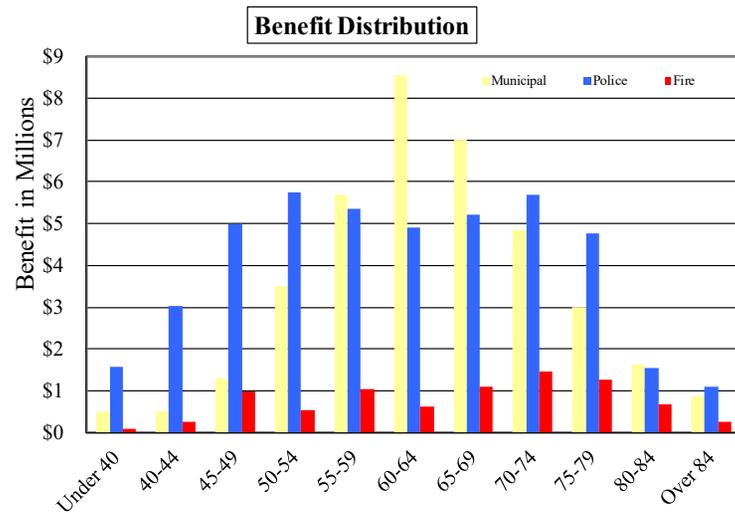
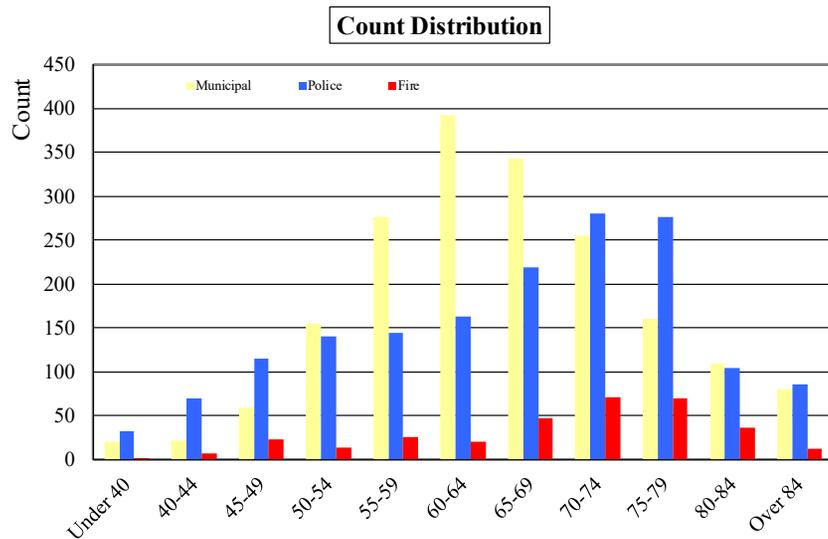


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

**Table A-27
Age Distribution of Disabled Members as of July 1, 2020**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	21	\$ 514,493	32	\$ 1,578,892	2	\$ 107,231
40-44	22	517,093	70	3,029,695	7	249,551
45-49	59	1,298,413	115	4,979,848	23	982,513
50-54	155	3,498,111	140	5,746,615	14	550,300
55-59	276	5,688,099	144	5,347,078	26	1,032,426
60-64	392	8,542,401	163	4,918,329	20	634,498
65-69	343	6,994,521	219	5,227,447	47	1,100,109
70-74	255	4,848,915	280	5,689,509	71	1,461,941
75-79	161	3,003,821	276	4,753,507	70	1,280,322
80-84	110	1,635,007	104	1,546,021	36	683,397
Over 84	81	884,116	86	1,100,576	13	269,714
Total	1,875	37,424,990	1,629	43,917,517	329	8,352,002

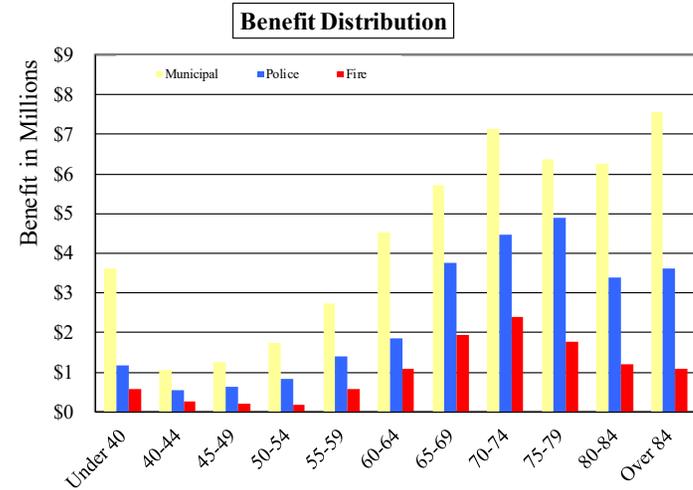
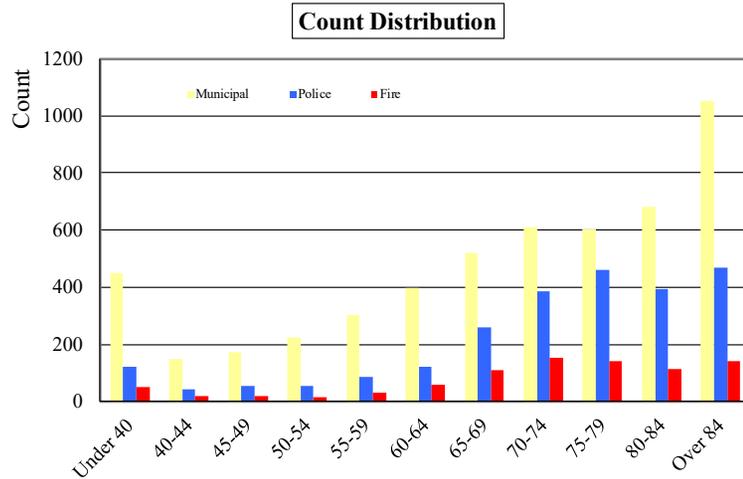


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

**Table A-28
Age Distribution of Beneficiaries as of July 1, 2020**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	450	\$ 3,627,617	120	\$ 1,187,096	51	\$ 591,438
40-44	148	1,052,187	44	555,097	20	262,240
45-49	171	1,260,618	56	641,413	19	222,693
50-54	225	1,739,878	56	821,761	15	171,251
55-59	305	2,734,324	87	1,402,739	29	580,965
60-64	396	4,521,147	121	1,854,773	60	1,082,287
65-69	518	5,712,051	258	3,760,846	111	1,955,786
70-74	612	7,143,232	386	4,471,068	155	2,392,854
75-79	604	6,359,722	461	4,900,476	141	1,768,987
80-84	680	6,251,391	394	3,386,890	115	1,203,178
Over 84	1,053	7,572,187	470	3,621,594	140	1,093,284
Total	5,162	47,974,354	2,453	26,603,753	856	11,324,963

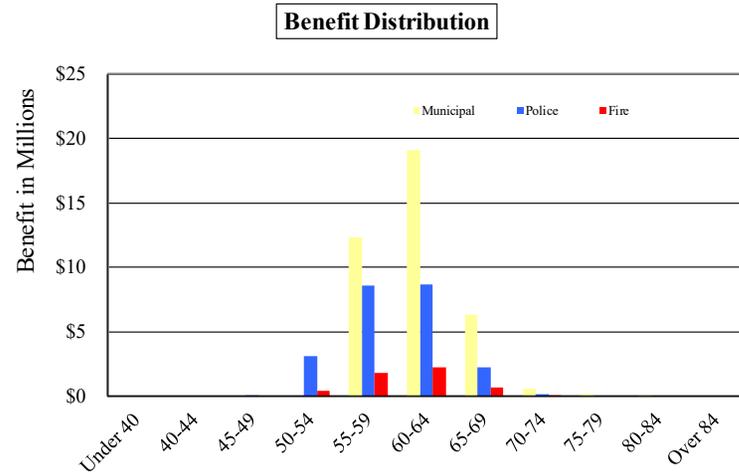
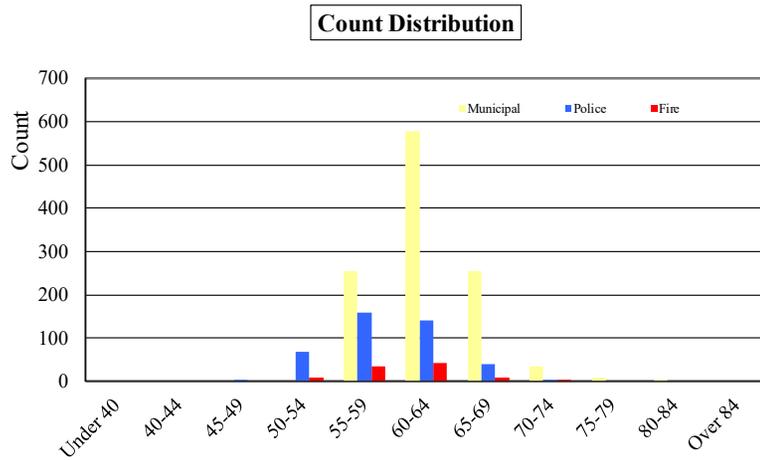


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

**Table A-29
Age Distribution of DROP Participants as of July 1, 2020**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	0	\$ 0	0	\$ 0	0	\$ 0
40-44	0	0	0	0	0	0
45-49	0	0	1	51,183	0	0
50-54	0	0	69	3,138,249	9	424,497
55-59	254	12,304,273	159	8,544,313	34	1,758,912
60-64	578	19,077,129	142	8,710,682	42	2,199,422
65-69	254	6,355,775	40	2,189,693	9	694,261
70-74	36	546,613	3	170,100	1	99,156
75-79	10	156,305	0	0	0	0
80-84	1	19,272	0	0	0	0
Over 84	0	0	0	0	0	0
Total	1,133	38,459,367	414	22,804,220	95	5,176,248

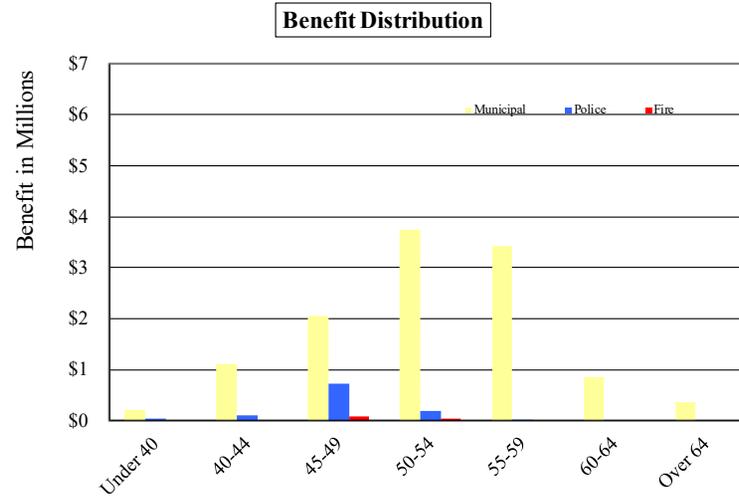
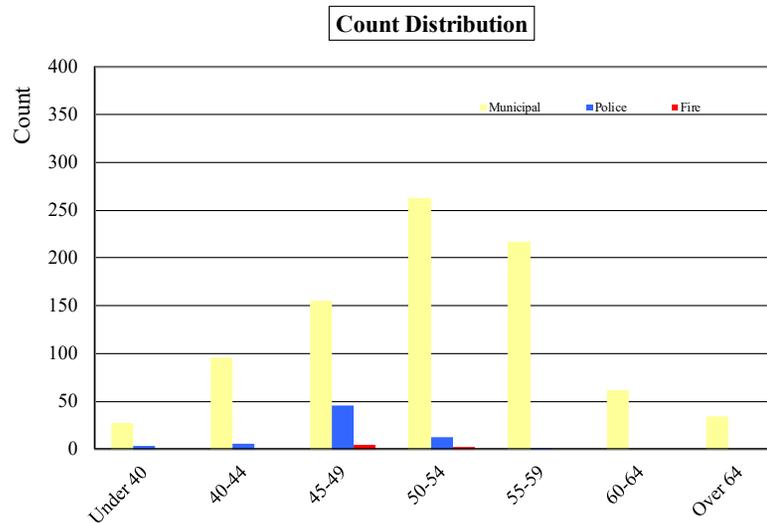


**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

**Table A-30
Age Distribution of Terminated Vested Members as of July 1, 2020**

Age	Municipal		Police		Fire	
	Count	Annual Pensions	Count	Annual Pensions	Count	Annual Pensions
Under 40	27	\$ 213,246	3	\$ 47,452	0	\$ 0
40-44	96	1,110,888	6	96,172	0	0
45-49	155	2,060,841	46	725,870	5	76,514
50-54	263	3,741,100	12	191,195	2	44,424
55-59	217	3,429,984	1	12,493	0	0
60-64	62	859,651	0	0	0	0
Over 64	34	363,640	0	0	0	0
Total	854	11,779,350	68	1,073,182	7	120,938



**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Appendix B provides supporting information on the amortization payments under the City’s Funding Policy by each plan.

Table B-1a					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
1967 Plan - Municipal					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 2,548,879	\$ 2,369,264		\$ 318,208	\$ 342,074
2. Changes in UAL due to					
a. Actuarial Experience	\$ 72,787	\$ 78,246	20	\$ 7,140	\$ 7,675
b. Assumption Changes	14,577	15,670	15	1,651	1,775
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ 87,364	\$ 93,917		\$ 8,791	\$ 9,451
3. Total [1c. + 2e.]	\$ 2,636,243	\$ 2,463,181		\$ 326,999	\$ 351,524

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1b					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
1967 Plan - Police					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 1,336,352	\$ 1,251,883		\$ 160,795	\$ 172,855
2. Changes in UAL due to					
a. Actuarial Experience	\$ 20,444	\$ 21,977	20	\$ 2,005	\$ 2,156
b. Assumption Changes	6,309	6,782	15	715	768
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ 26,753	\$ 28,759		\$ 2,720	\$ 2,924
3. Total [1c. + 2e.]	\$ 1,363,105	\$ 1,280,642		\$ 163,515	\$ 175,779

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1c					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
1967 Plan - Fire					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 565,072	\$ 526,930		\$ 69,244	\$ 74,437
2. Changes in UAL due to					
a. Actuarial Experience	\$ 15,794	\$ 16,978	20	\$ 1,549	\$ 1,665
b. Assumption Changes	2,451	2,635	15	278	298
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ 18,245	\$ 19,613		\$ 1,827	\$ 1,964
3. Total [1c. + 2e.]	\$ 583,316	\$ 546,543		\$ 71,071	\$ 76,401

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1d					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Plan 87 - Municipal					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 728,260	\$ 689,961		\$ 84,318	\$ 90,642
2. Changes in UAL due to					
a. Actuarial Experience	\$ 70,638	\$ 75,936	20	\$ 6,929	\$ 7,449
b. Assumption Changes	17,158	18,445	15	1,944	2,090
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ 87,796</u>	<u>\$ 94,381</u>		<u>\$ 8,873</u>	<u>\$ 9,538</u>
3. Total [1c. + 2e.]	\$ 816,056	\$ 784,342		\$ 93,191	\$ 100,180

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1e					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Plan 87 - Elected					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 11,852	\$ 10,957		\$ 1,607	\$ 1,728
2. Changes in UAL due to					
a. Actuarial Experience	\$ (1,073)	\$ (1,153)	20	\$ (105)	\$ (113)
b. Assumption Changes	112	120	15	13	14
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	\$ (961)	\$ (1,033)		\$ (93)	\$ (99)
3. Total [1c. + 2e.]	\$ 10,891	\$ 9,924		\$ 1,515	\$ 1,629

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1f					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Plan 87 - Police					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 323,519	\$ 309,065		\$ 33,749	\$ 36,280
2. Changes in UAL due to					
a. Actuarial Experience	\$ (29,827)	\$ (32,065)	20	\$ (2,926)	\$ (3,145)
b. Assumption Changes	12,321	13,245	15	1,396	1,500
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ (17,507)</u>	<u>\$ (18,820)</u>		<u>\$ (1,530)</u>	<u>\$ (1,645)</u>
3. Total [1c. + 2e.]	\$ 306,012	\$ 290,245		\$ 32,219	\$ 34,636

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1g					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Plan 87 - Fire					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 92,464	\$ 87,955		\$ 10,500	\$ 11,288
2. Changes in UAL due to					
a. Actuarial Experience	\$ (12,616)	\$ (13,562)	20	\$ (1,238)	\$ (1,330)
b. Assumption Changes	3,848	4,137	15	436	469
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ (8,768)</u>	<u>\$ (9,425)</u>		<u>\$ (802)</u>	<u>\$ (862)</u>
3. Total [1c. + 2e.]	\$ 83,696	\$ 78,530		\$ 9,699	\$ 10,426

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1h					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Plan 10 - Municipal					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ (779)	\$ (779)		\$ (54)	\$ (58)
2. Changes in UAL due to					
a. Actuarial Experience	\$ (1,821)	\$ (1,958)	20	\$ (179)	\$ (192)
b. Assumption Changes	125	134	15	14	15
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ (1,696)</u>	<u>\$ (1,823)</u>		<u>\$ (164)</u>	<u>\$ (177)</u>
3. Total [1c. + 2e.]	\$ (2,475)	\$ (2,603)		\$ (219)	\$ (235)

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1i					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Plan 16 - Municipal					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ (339)	\$ (380)		\$ 15	\$ 16
2. Changes in UAL due to					
a. Actuarial Experience	\$ (1,326)	\$ (1,426)	20	\$ (130)	\$ (140)
b. Assumption Changes	176	189	15	20	21
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ (1,150)</u>	<u>\$ (1,237)</u>		<u>\$ (110)</u>	<u>\$ (118)</u>
3. Total [1c. + 2e.]	\$ (1,489)	\$ (1,617)		\$ (95)	\$ (102)

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX B – SUPPORTING TABLES FOR CITY’S FUNDING POLICY

Table B-1j					
Development of the Fiscal Year 2022 Amortization Payment under the City's Funding Policy					
Total - All Divisions					
(\$ thousands)					
	7/1/2020	7/1/2021	Remaining	FY 2022 Payment	FY 2022 Payment
	Outstanding Balance	Expected Balance	Years	Beginning-of-Year	End-of-Year
1. Expected Unfunded Actuarial Liability (UAL) as of July 1, 2020 Based on July 1, 2019 Valuation					
a. Remaining	\$ 5,605,279	\$ 5,244,855		\$ 678,382	\$ 729,261
2. Changes in UAL due to					
a. Actuarial Experience	\$ 132,999	\$ 142,974	20	\$ 13,046	\$ 14,025
b. Assumption Changes	57,077	61,357	15	6,466	6,951
c. Active Plan Changes	0	0	10	0	0
d. Inactive Plan Changes	0	0	1	0	0
e. Subtotal	<u>\$ 190,076</u>	<u>\$ 204,332</u>		<u>\$ 19,512</u>	<u>\$ 20,976</u>
3. Total [1c. + 2e.]	\$ 5,795,355	\$ 5,449,186		\$ 697,894	\$ 750,236

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Data Assumptions and Practices

In preparing our data, we relied on information supplied by the City of Philadelphia Municipal Retirement System staff. The data was reviewed to ensure that it complies with generally accepted actuarial standards. This information includes, but is not limited to, plan provisions, employee data, and financial information. Our methodology for obtaining the data used for the valuation is based upon the following assumptions and practices:

- We exclude raw active records with dates of hire after the valuation date.
- We include terminated vested records in the valuation data, regardless of whether they have enough service for vesting.
- We exclude terminated vested and retired records with values of zero in the benefit field.
- If a participant is found in multiple data files (e.g., both the active and retired data files), based on a match of both employee number and Social Security Number, we first attempt to identify the record with the most recent status change and keep only that record. If it is not apparent which record is the most recent, we keep the record that generates the highest liability in our valuation system.
- If a participant is found multiple times in the same data file, based on a match of both employee number and Social Security Number, we keep the record that generates the highest liability in our valuation system, except where one of the records is in the recorded death file in which case we check for a survivor record or delete the record.
- Valuation pay reflects a load of 6% of pay for Police (stress pay) and Firefighters (premium pay).
- The date of retirement for a terminated vested participant was set to the valuation date, if the given date was earlier.
- If the payment form field for pensioners is missing, we assume that 1967 Plan members receive a 50% J&S annuity with a return of contributions in excess of payments received upon death of the member, and we assume that Plan 87 members receive a life annuity, also with a return of contributions. However, if the pensioner is a beneficiary or survivor, we assume that they receive a life annuity only.
- For pensioners under the form of payment 50% J&S annuity with return of contributions, 50% are assumed to be married based upon data provided by the City. All other forms of payment are explicitly valued.
- Records with missing dates of birth have their data filled in based on the average for their plan.
- We assumed that all changes in participant data from last year to this year were valid unless indicated otherwise by System staff.
- We use the dates of hire and service credit provided in the data to calculate actuarial liability. We understand from the System staff that the service credit data provided does not include adjustments for breaks in service so to the extent that some members may have had breaks in service the actuarial liability is overstated.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

- DROP participants are assumed to begin payments immediately.
- For Municipal Plan 1967 participants, pay was assumed to be below the Social Security Taxable Wage Base for purposes of determining the aggregate member contribution amount.
- We assumed that any participant who was active last year, missing this year is now a terminated non-vested participant.
- We assumed that any participant who was inactive last year and missing from this year without a clear reason is now deceased.
- For this valuation, we relied on a supplemental file for overtime compensation for all active employees which was supplied by the System staff. We have reviewed this data for reasonableness and made assumptions regarding the data with input from the System staff. To the extent actual overtime compensation differs from the data provided, actual experience will be reflected in the next valuation.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

1. Investment Return Assumption

7.50% compounded annually, net of expenses.

2. Salary Increase Rate

Age	Municipal and Elected Officials	Uniformed
<20	20.00%	20.00%
20	18.00%	11.00%
25	10.00%	7.00%
30	7.00%	5.00%
35	5.75%	4.25%
40	5.00%	4.00%
45	4.60%	3.50%
50	4.35%	3.30%
55	4.10%	3.00%
60	3.85%	3.00%
65+	3.50%	2.75%

3. Total Annual Payroll Growth

3.30% per year.

4. Administrative Expenses

Annual expected expenses included in this report are \$10,837,309 and assumed to increase by 3.30% per year. This amount is included in the normal cost as an explicit assumption for purposes of determining the contribution amounts.

5. Funding of the Pension Adjustment Fund

To recognize the expense of the benefits payable under the Pension Adjustment Fund, the actuarial liabilities have been increased by 0.54%. This estimate is based on the statistical average expected value of the benefits.

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APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

6. Rates of Termination

Termination rates are based on Division and age, sample rates shown below.

Age	Municipal and Elected Officials		Uniformed
20	0.2200		0.0350
25	0.1500		0.0310
30	0.1000		0.0235
35	0.0775		0.0160
40	0.0650		0.0100
45	0.0525		0.0100
50	0.0450		0.0100
55	0.0450		0.0000
60	0.0900		0.0000

We assume that a vested employee who terminates will elect a pension deferred to service retirement age as long as their age plus years of service at termination are greater than or equal to 55 (45 for police and fire employees in the 1967 Plan). Otherwise, we assume they elect a refund of member contributions.

7. Rates of Disability

Disability rates are based on Division and age and split between gender for Municipal and Elected Officials, sample rates shown below.

Age	Municipal and Elected Officials		Uniformed
	Male	Female	
20	0.000025	0.000025	0.000025
25	0.000050	0.000025	0.000500
30	0.000750	0.000400	0.001800
35	0.001000	0.000800	0.004000
40	0.001500	0.001300	0.005000
45	0.001900	0.002800	0.005200
50	0.004000	0.005700	0.004000
55	0.005400	0.005500	0.003000
60	0.000000	0.000000	0.000000

*For municipal and elected members, we assume that 65% of all disabilities are ordinary and 35% are service-connected. For police and fire members, we assume that 25% are ordinary and 75% are service-connected.

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8. Rates of Pre-Retirement Mortality

Municipal and Elected Officials: 110% and 115%, for males and females, respectively, of the RP-2014 Employee Table projected from base year of 2006 to 2021 using mortality improvement scale MP-2017.

Uniformed: 85% of the RP-2014 Blue Collar Employee Table projected from base year of 2006 to 2021 using mortality improvement scale MP-2017.

Experience studies are performed every four years as required by State law which requires regular and detailed experience and analysis of the mortality trends such that improvements are addressed incrementally with assumption changes as a result of these studies. This mandatory process allows for periodic recognition of mortality improvements which are sufficient in addressing the potential trend. The most recent experience study was conducted for the period between July 1, 2012 and June 30, 2017.

Age	Municipal and Elected Officials		Uniformed	
	Male	Female	Male	Female
20	0.000409	0.000189	0.000408	0.000157
25	0.000530	0.000212	0.000530	0.000176
30	0.000550	0.000268	0.000550	0.000221
35	0.000668	0.000380	0.000668	0.000315
40	0.000772	0.000524	0.000772	0.000434
45	0.001086	0.000769	0.001086	0.000638
50	0.001802	0.001226	0.001802	0.001016
55	0.003018	0.002002	0.003018	0.001660
60	0.005319	0.003088	0.005319	0.002560
65	0.009579	0.004453	0.009578	0.003691

* For municipal and elected members, we assume that 98.5% of all deaths are ordinary, with 1.5% service-connected. For police and fire members, 92% are assumed to be ordinary and 8% service-connected.

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9. Rates of Post-Retirement Mortality

Municipal and Elected Officials: 127% and 119% for males and females, respectively, of the RP-2014 Healthy Annuitant Table projected from base year 2006 to 2021 using mortality improvement scale MP-2017.

Uniformed: 115% of the RP-2014 Blue Collar Healthy Annuitant Table projected from base year of 2006 to 2021 using mortality improvement scale MP-2017.

Age	Municipal and Elected Officials		Uniformed	
	Male	Female	Male	Female
50	0.005015	0.003186	0.004541	0.003139
55	0.007168	0.004486	0.006789	0.004817
60	0.010180	0.006792	0.010031	0.007252
65	0.014715	0.010033	0.015263	0.010512
70	0.021742	0.015288	0.023114	0.016035
75	0.034319	0.024900	0.036499	0.026399
80	0.057729	0.042731	0.060617	0.045229
85	0.101295	0.076712	0.102771	0.079656
90	0.178648	0.137255	0.174268	0.138509
95	0.278849	0.224212	0.261914	0.219761

10. Rates of Post-Disability Mortality

Municipal and Elected Officials: 95% of the RP-2014 Disabled Retiree Table projected from base year 2006 to 2021 using mortality improvement scale MP-2017.

Uniformed: 80% of the RP-2014 Disabled Retiree Table projected from base year 2006 to 2021 using mortality improvement scale MP-2017.

Age	Municipal and Elected Officials		Uniformed	
	Male	Female	Male	Female
35	0.010106	0.004319	0.008510	0.003637
40	0.011676	0.005959	0.009832	0.005018
45	0.016427	0.008752	0.013834	0.007370
50	0.018826	0.010942	0.015854	0.009214
55	0.021849	0.014315	0.018399	0.012055
60	0.026070	0.017756	0.021954	0.014953
65	0.031668	0.020761	0.026668	0.017483
70	0.039130	0.026749	0.032952	0.022526
75	0.051951	0.038967	0.043748	0.032814
80	0.073980	0.059755	0.062299	0.050320

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11. Rates of Retirement

Rates of Service Retirement - 1967 Plan		
Age	Municipal	Uniformed
45	0.00	0.10
46-52	0.00	0.05
53-54	0.00	0.10
55	0.30	0.15
56	0.20	0.17
57	0.30	0.20
58	0.30	0.20
59	0.20	0.20
60	0.20	0.25
61	0.20	0.30
62	0.25	0.30
63	0.20	0.30
64	0.20	0.30
65	0.30	0.30
66	0.20	0.30
67	0.20	0.30
68	0.20	0.30
69	0.30	0.30
70+	1.00	1.00

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Rates of Service Retirement - 1987 Plan and Plan '10				
Age	Municipal and Elected Officials		Uniformed	
	First Year Eligible	Subsequent Years	First Year Eligible	Subsequent Years
45	0.000	0.000	0.030	0.000
46-49	0.000	0.000	0.030	0.030
50	0.000	0.000	0.060	0.060
51	0.000	0.000	0.100	0.050
52	0.050	0.020	0.100	0.050
53-54	0.100	0.020	0.100	0.050
55	0.100	0.020	0.100	0.070
56	0.100	0.020	0.100	0.100
57	0.100	0.020	0.100	0.070
58	0.100	0.020	0.100	0.120
59	0.100	0.080	0.100	0.120
60	0.250	0.250	0.100	0.120
61	0.150	0.200	0.100	0.120
62	0.400	0.250	0.100	0.300
63	0.250	0.200	0.100	0.300
64	0.300	0.200	0.100	0.300
65-69	0.600	0.200	0.100	0.500
70	0.100	1.000	0.100	1.000

Retirements under DROP are included in the rates above.

12. Family Composition Assumptions

70% of active members and 50% of non-active members are assumed to be married for retirees with the 50% J&S with return on contribution form of payment only. Male spouses are assumed to be four-years older than female spouses.

13. Service-connected disability benefit

Service-connected disability benefits are increased by 2.9% to account for the periodic adjustment.

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

14. Disclosures Regarding Models Used

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies for the intended purpose of calculating liabilities and projected benefit payments. We have examined the reasonableness of the input data and assumptions, reviewed sample calculations for accuracy, reconciled the actuarial gain loss, and find the aggregate results reasonable and appropriate. We are not aware of any material inconsistencies, unreasonable output resulting from the aggregation of assumptions, material limitations or known weaknesses that would affect this actuarial valuation.

The deterministic and stochastic projections are based on our propriety model P-Scan developed by our firm that utilize the results shown in this valuation report. The model is also used to stress test the impact of volatile asset returns over the projection period. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of the valuation date and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after the valuation date. While the assumptions individually are reasonable for the underlying valuation that supports the projections, specifically for projection purposes, they are also considered reasonable in the aggregate.

15. Rationale for Assumptions

The assumptions used in this report reflect the results of an Experience Study performed by Cheiron covering the five year period from July 1, 2012 through June 30, 2017 and adopted by the Board. More details on the rationale for the demographic and economic assumptions can be found in the Experience Study Report dated March 28, 2018.

16. Changes Since Last Valuation

- The interest rate assumption was decreased from 7.55% to 7.50%.
- The administrative expenses assumption was changed from \$10,489,801 to \$10,837,309 to better reflect actual experience.

APPENDIX C – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Actuarial Funding Method

The Entry Age Normal actuarial funding method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement. The actuarial liability is the difference between the present value of future benefits and the present value of future normal cost. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets.

2. Funding Methods

City's Funding Policy:

The initial July 1, 1985 UAL was amortized over 34 years ending June 30, 2019, with payments increasing at 3.3% per year, the assumed payroll growth. Other changes in the actuarial liability are amortized in level-dollar payments as follows:

- Actuarial gains and losses – 20 years beginning July 1, 2009. Prior to July 1, 2009, gains and losses were amortized over 15 years
- Assumption changes – 15 years beginning July 1, 2010. Prior to July 1, 2010, assumption changes were amortized over 20 years
- Plan changes for active members – 10 years
- Plan changes for inactive members – 1 year
- Plan changes mandated by the State – 20 years

Tiered and additional Police Officer and Firefighter member contributions offset the City's portion of the normal cost.

MMO:

For the purposes of the MMO under Act 205 reflecting the fresh start amortization schedule, the July 1, 2009 UAL was "fresh started" to be amortized over 30 years ending June 30, 2039. This is a level dollar amortization of the UAL. All future amortization periods will follow the City's Funding Policy as outlined above.

Tier and additional Police Officer and Firefighter member contributions offset the City's portion of the normal cost in accordance with Act 205. Sales tax revenue is contributed in addition to the MMO resulting in gains under the funding method.

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Revenue Recognition Policy:

This calculation is similar to the MMO except that the assets used to determine the unfunded liability do not include the accumulated value of sales tax revenue and tier and additional Police and Fire member contributions received by the System. These sources of income are contributed over and above the City's contribution under RRP. Therefore under this funding method, the additional revenue amounts are separately tracked and accumulated in a notional account which is then subtracted from the assets before calculating the contribution amounts due under the Minimum Municipal Obligation (MMO) methodology. We accumulate these amounts in a notional account and deduct them from the Actuarial Asset Value before the RRP is determined. These amounts are accumulated using the market value of asset return.

Tier and additional Police Officer and Firefighter member contributions do not offset the City's portion of the normal cost.

3. Asset Valuation Method

The actuarial value of assets (AVA) is determined using an adjusted market value. Under this method, a preliminary AVA is determined as the market value of assets on the valuation date, minus the existing balance of the Pension Adjustment Fund (PAF) rolled forward at the current year's market rate of return, minus a decreasing fraction (9/10, 8/10, 7/10, etc.) of the investment gains or losses in each of the preceding nine years. Gains and losses prior to FYE June 30, 2008 were smoothed over a five-year period and have now all been fully recognized. The gain or loss for a given year is the difference between the actual investment return (on a market-to-market basis) and the assumed investment return based on the market value of assets at the beginning of the year and actual cash flow. The AVA is adjusted, if necessary, to remain between 80% and 120% of the market value net of the PAF. The final AVA is determined by subtracting the additional transfer amount (if any) to the PAF. The additional transfer amount to the PAF remains to be calculated based on the five-year smoothing method.

4. Changes Since Last Valuation

None

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

This summary of plan provisions provides an overview of the major provisions of the pension plans used in the actuarial valuation. It is not intended to replace the more precise language of the retirement code, and if there is any difference between the description of the plans herein and the actual text of the retirement code, the retirement code will govern.

1. Participation

Municipal (Plan J):

Full-time employees participate on their date of employment. Temporary employees participate after completing six months of employment. Participation is limited to employees hired before January 8, 1987. District Council 47 (Local 2186 or 2187) and 33 members hired between January 8, 1987 and October 1, 1992 were switched from Plan 87 to 1967 Plan effective on their hire dates, provided such employees contributed the difference between what they paid to the Plan and the amount they would have paid under Plan J.

Uniformed (Plans D and X):

Same as municipal.

2. Credited Service

Municipal (Plan J):

Credited service means the period of employment with the City during which the employee makes contributions to the Retirement System. Certain leaves of absence may also be credited.

Uniformed (Plans D and X):

Same as municipal.

3. Total Compensation

Municipal (Plan J):

Total compensation means the base rate of pay, longevity payments, and overtime received during a 12-month period.

Uniformed (Plans D and X):

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 6% of base pay) received during a 12-month period.

4. Final Compensation

Municipal (Plan J):

Final compensation means whichever is greater: annual base rate of pay at the time of termination or the total compensation received during the 12 months immediately preceding termination, including supplementary compensation received under Civil Service Regulation No. 32.

Uniformed (Plans D and X):

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

5. Average Final Compensation

Municipal (Plan J):

Average final compensation means the arithmetic average of the total compensation received during the three calendar or anniversary years that produce the highest average.

Uniformed (Plans D and X):

Average final compensation means the highest of:

- The total compensation received during the 12-month period; or
- The annual base rate of pay, excluding longevity payments, calculated from the final pay period; or
- The arithmetic average of the total compensation received during five calendar years of employment.

6. Employee Contributions

Municipal (Plan J):

Employees who participate in the Social Security System contribute 3¾% of total compensation up to the taxable wage base (\$132,900 in 2019, and \$137,700 in 2020) and 6% of total compensation above the taxable wage base to the Retirement System.

Each employee who does not participate in the Social Security System contributes 6% of his total compensation to the Retirement System.

All employees pay an additional 0.5% of compensation for the period between January 1, 2015 through December 31, 2015, and 1.0% of compensation January 1, 2016 onwards.

Effective January 1, 2019 current employees with annual salary (excluding overtime) in excess of \$45,000 will pay additional tier contributions on their total compensation over their base rates as follows: +0.50% for annual salary between \$45,000-\$55,000; +1.50% for annual salary between \$55,000-\$75,000; +2.00% for annual salary between \$75,000-\$100,000; and +2.75% for annual salary greater than 100,000.

Uniformed (Plans D and X):

6% of total compensation to the Retirement System.

7. Service Retirement

Eligibility

Municipal (Plan J):

Each municipal employee is eligible to retire and receive a service pension at age 55 with one year of service.

Uniformed (Plans D and X):

Each uniformed employee is eligible to retire and receive a service pension at age 45.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

Benefit Amount

Municipal (Plan J):

The service pension equals 2 1/2% of the employee's average final compensation multiplied by credited service to a maximum of 20 years plus 2% of the employee's average final compensation multiplied by credited service above 20, to a maximum of 80% of the employee's average final compensation.

Uniformed (Plans D and X):

The service pension equals 2 1/2% of the employee's average final compensation multiplied by credited service, subject to a maximum of 100% of average final compensation. A minimum of \$1,000 per month is provided for those who retired with 20 or more years of service.

8. Early Retirement

Eligibility

Municipal (Plan J):

Each municipal employee is eligible to retire and receive a reduced service pension at age 52 if he has 10 or more years of credited service.

Uniformed (Plans D and X):

Each uniformed employee is eligible to retire and receive a reduced service pension at age 40 if he or she has 10 or more years of credited service.

Benefit Amount

Municipal (Plan J):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age.

Uniformed (Plans D and X):

Same as municipal.

9. Deferred Vested Retirement

Eligibility

Municipal (Plan J):

A terminating employee who has completed 10 or more years of credited service is eligible for a deferred vested retirement benefit.

Uniformed (Plans D and X):

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

Benefit Amount

Municipal (Plan J):

The annual deferred vested benefit is determined the same as service pensions, using average final compensation and credited service at termination. This benefit begins at service retirement date. If the member dies before the deferred vested benefit begins, an ordinary death benefit is payable (see Ordinary Death below). As an alternative before benefits begin, a plan member who is terminating employment may ask to have employee contributions returned (without interest) instead of receiving the deferred vested benefit.

Uniformed (Plans D and X):

Same as municipal.

10. Withdrawal Benefit

Municipal (Plan J):

Each employee terminating who has completed less than 10 years of credited service will receive a withdrawal benefit equal to his or her employee contributions (without interest).

Uniformed (Plans D and X):

Same as municipal.

11. Service-Connected Death

Eligibility

Municipal (Plan J):

The beneficiary of each active employee who dies solely from the performance of duties of the employee's position with the City is eligible for an immediate death benefit.

Uniformed (Plans D and X):

Same as municipal.

Benefit Amount

Municipal (Plan J):

The death benefit equals total employee contributions paid to the Retirement System, plus a yearly payment of 60% of the employee's final compensation reduced by any death benefits payable under the Worker's Compensation Act.

This benefit is payable to the spouse until his or her death. Dependent children are entitled to an additional yearly payment of 10% of final compensation for each dependent child (up to two children) until the child reaches age 18. If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is entitled to receive a yearly payment of 25% of final compensation until the child reaches age 18.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

If there are no spouse or dependent children, each dependent parent is entitled to receive a yearly payment of 15% of final compensation for life.

Uniformed (Plans D and X):
Same as municipal.

12. Ordinary Death

Eligibility

Municipal (Plan J):

The beneficiary of an active employee (or a terminated vested employee who did not withdraw employee contributions) who dies after completing 10 years of credited service or reaches age 55 is eligible for an immediate death benefit equal to a yearly pension or a lump sum payment. The beneficiary of an active employee who dies before completing 10 years of credited service and reaches age 55 is eligible for a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Uniformed (Plans D and X):

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw employee contributions) is eligible for a death benefit equal to a yearly pension or a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Annual Pension

Municipal (Plan J):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received if eligible to retire on the day before he died and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Uniformed (Plans D and X):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based on a minimum of 10 years of service) had the person been eligible to retire on the day before dying and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Lump Sum Payment

Municipal (Plan J):

The lump sum payment is equal to 10% of the deceased employee's average final compensation multiplied by years of credited service to a maximum of 10, plus the deceased employee's contributions to the Retirement System, minus the total amount of the deceased employee's City paid life insurance.

Uniformed (Plans D and X):
Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

13. Service-Connected Disability

Eligibility

Municipal (Plan J):

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated (unable to perform duties) solely as the result of accident or injury during the performance of duties is eligible for an immediate service-connected disability pension.

Uniformed (Plans D and X):

Same as municipal. A minimum of \$1,000 per month is provided for Uniformed members.

Benefit Amount

Municipal (Plan J):

The service-connected disability benefit is equal to the Employee's Retirement System contributions, plus a yearly benefit of 70% of the employee's final compensation, reduced by any disability benefits payable under the Worker's Compensation Act. If he or she withdraws contributions, the benefit is payable for his or her lifetime only.

If the employee leaves employee contributions with the Retirement System, he or she may choose a survivor benefit option (see Survivor Benefit below) and the beneficiary will continue receiving benefit payments after his or her death.

Uniformed (Plans D and X):

Same as municipal.

14. Service-Connected Disability Periodic Adjustment

Eligibility

Municipal (Plan J):

An employee who is receiving a service-connected disability benefit who is totally disabled and does not collect Social Security disability insurance benefits is eligible for a periodic adjustment.

Uniformed (Plans D and X):

Same as municipal, but only applies to police employees.

Benefit Amount

Municipal (Plan J):

The disabled employee's pension will be increased in the eighth year after separation by the percentage raise given in the previous year to active employees in his or her job class. The adjustment will continue each year thereafter until the employee's 65th birthday.

Uniformed (Plans D and X):

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

15. Ordinary Disability

Eligibility

Municipal (Plan J):

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit after completing 10 years of credited service.

Uniformed (Plans D and X):

Same as municipal, except that fire employees only need five years of credited service and police employees have no service requirement if the disability is permanent and total. Police employees with permanent and partial disability need 10 years of credited service.

Benefit Amount

Municipal (Plan J):

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement. If the employee is eligible for or receiving workers' compensation, no benefit is payable. Such employee may apply for benefits at retirement age.

Uniformed (Plans D and X):

Same as municipal, except police employees that have no service requirement are credited with a minimum of 10 years of credited service. Same as municipal.

16. Survivor Benefit

Municipal (Plan J):

Service pensions, deferred vested benefits, service-connected disability benefits (if employee contributions are left on deposit), and ordinary disability benefits are payable under five optional forms. Options 1, 2, 3, and 5 provide benefits actuarially equivalent to a lifetime only pension while Option 4 has no reduction.

Option 1 – A benefit is payable to the employee with the provision that upon death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee's contributions over the sum of the payments received.

Option 2 – A reduced benefit payable to the employee with the provision that 100% of the reduced benefit will be paid to the designated beneficiary for life after the death of the employee.

Option 3 – Same as Option 2 except only 50% of the reduced benefit is continued to the designated beneficiary.

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Option 4 – Upon the employee’s death, 50% of the benefit will continue to be paid to the surviving spouse for life, provided the employee and spouse were married for two years before retirement and at death. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments are given to dependent parents for the remainder of their lives. In addition, Option 4 provides for a guaranteed return of employee contributions as described in Option 1 above.

Option 5 – Provides for a partial lump sum of between 6 and 36 monthly payments payable under Options 1, 2, 3 or 4. The remaining monthly benefit is reduced so that the partial lump sum plus the reduced benefit is actuarially equivalent to the original benefit.

Uniformed (Plans D and X):
Same as municipal.

17. Minimum Pension

Municipal (Plan J):

The monthly minimum pension to a pensioner is equal to \$25 multiplied by the pensioner’s completed years of credited service, to a 10-year maximum.

Uniformed (Plans D and X):

The monthly minimum pension to pensioners is \$500. The monthly minimum pension to all other pensioners is \$440 providing such pension will increase to \$500 at the time the pensioner reaches age 60.

18. Waiver of Benefit

Municipal (Plan J):

Any employee at service retirement age with less than three but more than one year of credited service may waive the right to receive a monthly benefit and in lieu thereof, receive a lump sum payment of twice his or her employee contributions without interest.

Uniformed (Plans D and X):
Same as municipal.

19. Service-Connected Health Care Benefit

Municipal (Plan J):

Not applicable.

Uniformed (Plans D and X):

If a uniformed employee dies during the performance of duties, a service-connected health care benefit may be payable to the surviving spouse and dependent children. Regular payments will be made of the appropriate cost of maintaining medical, dental, optical, and prescription drug benefits that were in force at the time of the employee’s death. Payments to the spouse cease upon remarriage and to the dependent children at age 18 (age 22 if a full-time student) or, if dependent due to physical or mental infirmity, the duration of the infirmity. The health care benefits are not paid from the pension trust assets.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1967 PLAN

20. Deferred Retirement Option Plan (DROP)

Municipal (Plan J):

Employees that have ten years of service and have reached two years past the minimum retirement age may elect to participate in the DROP. During this time, their accrued benefit will go into a DROP account and will earn interest at a specified rate. The rate is calculated each year on January 1 and is equal to the lesser of the yield on 1-year treasury bonds and half of the valuation interest rate as of that date. The benefit is calculated as of the date they entered the DROP. At the end of the DROP, the employees' accrued monthly benefit will commence, plus they will receive the accumulated amount of the accrued benefit paid to the DROP, as well as the interest earned on such benefit.

Uniformed (Plans D and X):

Same as municipal except that employees are eligible as soon as they have ten years of service and have reached minimum retirement age.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

1. Participation

Municipal (Plan Y):

Full-time employees participate on their date of employment. Temporary employees participate after completing six months of employment. Participation is limited to employees hired on or after January 8, 1987. Any member of the 1967 Plan may irrevocably elect to participate in Plan 87. All employees hired after their Plan '10 effective date become members of Plan '10 with some groups having the option to elect into Plan 87. Employees first hired or rehired after their Plan 16 effective date become members of Plan 16.

Uniformed (Plans A and B):

Same as municipal except Police employees hired after January 1, 2010 and Fire employees hired on or after October 15, 2010 must make an election to participate in Plan 87.

Elected (Plan L):

Any City employee on or after January 8, 1987, in any general, municipal, or special election, participates in this Plan. Effective November 11, 2014, elected officials become members of Plan '10 upon employment or taking office unless they elect to participate in Plan 87.

2. Credited Service

Municipal (Plan Y):

Credited service means the period of employment with the City during which the employee makes contributions to the Retirement System. Certain leaves of absence may also be credited.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

3. Total Compensation

Municipal (Plan Y):

Total compensation means the base rate of pay, overtime, and longevity payments received during a 12-month period.

Uniformed (Plans A and B):

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 6% of base pay) received during a 12-month period.

Elected (Plan L):

Total compensation means the base rate of pay and longevity payments received during a 12-month period.

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4. Final Compensation

Municipal (Plan Y):

Final compensation means whichever is greater: annual base rate of pay at the time of termination or the total compensation received during the 12 months immediately preceding termination, including supplementary compensation received under Civil Service Regulation No. 32.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

5. Average Final Compensation

Municipal (Plan Y):

Average final compensation means the arithmetic average of the total compensation received during the three calendar or anniversary years producing the highest average.

Uniformed (Plans A and B):

Average final compensation means the arithmetic average of the total compensation received during the two calendar or anniversary years producing the highest average.

Elected (Plan L):

Same as municipal.

6. Employee Contributions

Municipal (Plan Y):

Total employee contributions equal 30% of the gross normal cost for all members in the municipal division. For employees of the Sheriff's Office represented by Lodge 5 of the F.O.P hired after January 1, 2012 and prior to August 20, 2018, who elect to participate in Plan Y employee contributions equal 50% of gross normal cost. Exempt and non-represented employees hired after January 13, 1999 and prior to January 1, 2019 (and current employees as of January 13, 1999 that elect to do so) will contribute an additional amount to become vested in five years instead of ten years. Employees hired after their Plan '10 date who elect the option to participate in Plan 87 prime will pay an additional 1.0% of compensation.

All employees will pay an additional 0.5% of compensation for the period between January 1, 2015 through December 31, 2015 and 1.0% of compensation January 1, 2016 onwards.

Effective January 1, 2019 current employees with annual salary (excluding overtime) in excess of \$45,000 will pay additional tier contributions on their total compensation over their base rates as follows: +0.50% for annual salary between \$45,000-\$55,000; +1.50% for annual salary between \$55,000-\$75,000; +2.00% for annual salary between \$75,000-\$100,000; and +2.75% for annual salary greater than 100,000.

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Uniformed (Plans A and B):

Total employee contributions equal 5% of total compensation, but not less than 30% or greater than 50% of gross normal cost for members in the uniformed division. Police employees hired after January 1, 2010 and Fire Fighters hired after October 15, 2010, who elect to participate in the 1987 Plan, will contribute 6% of total compensation.

Member contributions for current employees are increased by 0.92% effective July 1, 2017 and an additional 0.92% effective July 1, 2018. For new employees hired or rehired on or after July 1, 2017 member contribution rate shall be increased by 2.5% over the current rate of 6%.

Elected (Plan L):

Total employee contributions equal 30% of the gross normal cost for all members in the elected division calculated under the Municipal Plan plus 100% of the gross normal cost that exceeds the cost for the municipal plan. Employees hired after January 13, 1999 (and current employees as of January 13, 1999 that elect to do so) will contribute an additional amount to become vested in the lesser of two-full terms or eight years. Elected officials that are elected into Office after November 14, 2014 pay an additional 1% of compensation to participate in Plan L instead of Plan '10. All employees will also pay an additional 0.5% of compensation for the period between January 1, 2015 through December 31, 2015 and 1.0% of compensation January 1, 2016 onwards.

Effective January 1, 2019 current and future employees with annual salary (excluding overtime) in excess of \$45,000 will pay additional tier contributions on their total compensation over their base rates as follows: +0.50% for annual salary between \$45,000-\$55,000; +1.50% for annual salary between \$55,000-\$75,000; +2.00% for annual salary between \$75,000-\$100,000; and +2.75% for annual salary greater than \$100,000.

7. Service Retirement

Eligibility

Municipal (Plan Y):

Each municipal employee is eligible to retire and receive a service pension at age 60 if he or she has 10 or more years of credited service or, if the employee made additional contributions to become vested in five years, five years of credited service.

Uniformed (Plans A and B):

Each uniformed employee is eligible to retire and receive a service pension upon reaching age 50 and 10 or more years of credited service, or, if the employee made additional contributions to become vested in five years, five years of credited service.

Elected (Plan L):

Each elected official is eligible to retire and receive a service pension at age 55 if he or she has 10 or more years of credited service, or, if the employee made additional contributions to become vested in the lesser or two full terms or eight years, the lesser of two full terms or eight years of credited service.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Benefit Amount

Municipal (Plan Y):

The service pension equals 2.2% of the employee's average final compensation multiplied by years of credited service to a maximum of 10 years, plus 2% of the employee's average final compensation multiplied by years of service over 10, subject to a maximum of 100% of average final compensation.

Uniformed (Plans A and B):

The service pension equals 2.2% of the employee's average final compensation multiplied by years of credited service to a maximum of 20 years, plus 2% of the employee's average final compensation multiplied by years of credited service over 20, subject to a maximum of 100% of average final compensation.

Elected (Plan L):

The service pension equals 3.5% of the employee's average final compensation multiplied by years of credited service, subject to a maximum of 100% of average final compensation.

8. Early Retirement

Eligibility

Municipal (Plan Y):

Each municipal employee is eligible to retire and receive a reduced service pension at age 52 if he has 10 or more years of credited service. As an alternative, a member is eligible if he or she has at least 33 years of credited service, regardless of age.

Uniformed (Plans A and B):

Each uniformed employee is eligible to retire and receive a reduced service pension at age 40 if he or she has 10 or more years of credited service. Alternatively, a member is eligible if he has at least 25 years of credited service, regardless of age.

Benefit Amount

Municipal (Plan Y):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age. Benefits are not reduced if the employee has 33 or more years of credited service.

Uniformed (Plans A and B):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age. Benefits are not reduced if the employee has 25 or more years of credited service.

Elected (Plan L):

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

9. Deferred Vested Retirement

Eligibility

Municipal (Plan Y):

An employee who terminates employment after completing 10 or more years of credited service or, if the employee made additional contributions to become vested in five years, five years of credited service, is eligible for a deferred vested retirement if his or her contributions have not been withdrawn.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

A person terminating employment and who has completed 10 or more years of credited service, or if the employee made additional contributions to become vested in the lesser of two full terms or eight years, two full terms or eight years of credited service is eligible for a deferred vested retirement benefit provided he or she has not withdrawn contributions.

Benefit

Municipal (Plan Y):

The annual deferred vested benefit is determined the same as service pensions, based on average final compensation and credited service at termination. This benefit begins at the service retirement date. If a member dies before the deferred vested benefit begins, an ordinary death benefit is payable (see Ordinary Death below). As an alternative, the person terminating employment may request at any time before benefits begin a return of employee contributions (without interest) instead of the deferred vested benefit.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

10. Withdrawal Benefit

Eligibility

Municipal (Plan Y):

Each terminating employee who has completed fewer than 10 years of credited service (or, if the employee made additional contributions to become vested in five years, fewer than five years of credited service) will receive a withdrawal benefit equal to employee contributions (without interest).

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Each terminating employee who completed fewer than 10 years of credited service will receive a withdrawal benefit equal to employee contributions (without interest).

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

11. Service Connected Death

Eligibility

Municipal (Plan Y):

The beneficiary of each active employee who dies solely from the performance of duties of the employee's position with the City is eligible for an immediate death benefit.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

Benefit Amount

Municipal (Plan Y):

The death benefit equals the sum of the total employee contributions paid to the Retirement System (without interest), plus a yearly payment of 60% of the employee's final compensation reduced by any death benefits payable under the Workers' Compensation Act. This benefit is payable to the spouse until his or her death or remarriage, whichever occurs first. Dependent children are entitled to an additional 10% of final compensation yearly payment for each dependent child (up to two children) until the child reaches 18. This total benefit shall not exceed 80% of final compensation.

If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is eligible for a yearly payment of 25% of final compensation until the child reaches age 18. If there is no spouse or dependent children, each dependent parent is entitled to a 15% of final compensation yearly payment for life.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

12. Ordinary Death

Eligibility

Municipal (Plan Y):

The beneficiary of an active employee (or a terminated vested employee who did not withdraw his employee contributions) who dies after completing 10 years of credited service (or five years of credited service if additional contributions were made) or who has reached age 60 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completing 10 years of credited service (or five years of credited service if additional contributions were made) or reaching age 60 is eligible for a lump sum payment.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

The beneficiary may be any relative by blood or marriage.

Uniformed (Plans A and B):

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw employee contributions) is eligible for a death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary may be any relative by blood or marriage.

Elected (Plan L):

The beneficiary of an active employee (or a terminated vested employee who did not withdraw contributions) who dies after completing 10 years of credited service or reaching age 55 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completing 10 years of credited service or reaching age 55 is eligible for a lump sum payment. The beneficiary may be any relative by blood or marriage.

Annual Pension

Municipal (Plan Y):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received had he or she been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Uniformed (Plans A and B):

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based on a minimum of 10 years of service) had he been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Elected (Plan L):

Same as municipal.

Lump Sum Payment

Municipal (Plan Y):

The lump sum payment is equal to the deceased employee's average final compensation multiplied by years of credited service (not to exceed the service in the denominator) and divided by the number of years of credited service needed to become vested, plus the deceased employee's contribution to the Retirement System (without interest) minus the total amount of the deceased employee's life insurance which was paid by the City.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

13. Service-Connected Disability

Eligibility

Municipal (Plan Y):

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated from any further performance of duties due solely to the result of the performance of duties is eligible for an immediate service-connected disability pension. The application for benefit must be made within one year after termination of employment.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated from any further performance of duties due solely to the result of the performance of duties is eligible for an immediate service-connected disability pension.

Benefit Amount

Municipal (Plan Y):

The service-connected disability benefit is equal to the employee's contributions to the Retirement System, plus a yearly benefit of 70% of the employee's final compensation, reduced by any disability benefits payable under the Worker's Compensation Act.

If he or she withdraws contributions, the benefit is payable for his or her lifetime only. If the employee leaves employee contributions with the Retirement System, he or she may choose a survivor benefit option (see Survivor benefit below) and the beneficiary will continue receiving benefit payments after his or her death.

Uniformed (Plans A and B)

Same as municipal.

Elected (Plan L):

Same as municipal.

14. Service-Connected Disability Periodic Adjustment

Eligibility

Municipal (Plan Y):

An employee who is receiving a service-connected disability benefit who is totally disabled and does not collect Social Security disability insurance benefits is eligible for a periodic adjustment.

Uniformed (Plans A and B):

Same as municipal, but only applies to police employees.

Elected (Plan L):

Same as municipal.

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Benefit Amount

Municipal (Plan Y):

The disabled employee's pension will be increased in the eighth year after separation by the percentage raise given in the previous year to active employees in his or her job class. The adjustment will continue each year until the employee's 65th birthday.

Uniformed (Plans A and B):

Same as municipal.

Elected (Plan L):

Same as municipal.

15. Ordinary Disability

Eligibility

Municipal (Plan Y):

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit provided he or she has at least 10 years of credited service (or five years of credited service, if additional contributions were made). The application for benefits must be made within one year after termination.

Uniformed (Plans A and B):

Same as municipal, except that fire employees only need five years of credited service and police employees have no service requirement if the disability is permanent and total. Police employees with permanent and partial disability need 10 years of credited service (or five years of credited service, if additional contributions were made).

Elected (Plan L):

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance of duties is eligible for an immediate ordinary disability benefit provided he or she has completed at least 10 years of credited service, or eight years if additional contributions were made.

Benefit Amount

Municipal (Plan Y):

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

If the employee is eligible for or receiving workers compensation, no benefit is payable. Such employee may apply for benefits at retirement age.

Uniformed (Plans A and B):

Same as municipal, except each eligible employee is automatically credited with a minimum of 10 years of service to calculate the annual benefit.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – 1987 PLAN

Elected (Plan L):

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

16. Survivor Benefits

Municipal (Plan Y):

Service pensions, deferred vested benefits, service-connected disability benefits, and ordinary disability benefits are payable under five optional forms. Options 2 and 3 provide benefits actuarially equivalent to a lifetime only pension while Option 1 has no reduction.

Option 1 - A benefit is payable to the employee providing on his death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee's contributions over the sum of the payments received.

Option 2 - A reduced benefit payable to the employee with the provision that 100% of the reduced benefit will continue to be paid to the designated beneficiary for life after the death of the employee.

Option 3 - The same as Option 2 except only 50% of the reduced benefit is continued to the designated beneficiary.

Option 5 – Provides for a partial lump sum of between 6 and 36 monthly payments payable under Options 1, 2, 3 or 4. The remaining monthly benefit is reduced so that the partial lump sum plus the reduced benefit is actuarially equivalent to the original benefit.

Uniformed (Plans A and B):

Same as municipal, except that police and fire employees may also elect Option 4:

Option 4 - Upon the employee's death, 50% of the benefit will continue to be paid to the surviving spouse for life, provided the employee and spouse were married for two years before retirement and at death. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments are given to dependent parents for the remainder of their lives. In addition, Option 4 provides for a guaranteed return of employee contributions as described in Option 1 above.

Elected (Plan L):

Same as municipal.

17. Service-Connected Health Care Benefit

Eligibility

Municipal (Plan Y):

Not applicable.

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Uniformed (Plans A and B):

In the event of the death of a uniformed employee during the performance of his or her duties, a service-connected health care benefit may be payable to the surviving spouse and dependent children. Regular payments will be made of the appropriate cost of maintaining medical, dental, optical and pharmaceutical prescription benefits in force at the time of the employee's death. Payments to the spouse cease upon remarriage and to the dependent children at age 18 (age 22 if a full-time student) or if dependent due to physical or mental infirmity, the duration of the infirmity. The health care benefits are not paid from the pension trust assets.

Elected (Plan L):

Not applicable.

18. Deferred Retirement Option Plan (DROP)

Eligibility

Municipal (Plan Y):

Employees that have 10 years of service and have reached two years after the minimum retirement age may elect to participate in the DROP. During this time, their accrued benefit will go into a DROP account and will earn interest at a specified rate. The rate is calculated each year on January 1 and is equal to the lesser of the yield on 1-year treasury bonds and half of the valuation interest rate as of that date. The benefit is calculated as of the date they entered the DROP. At the end of the DROP, the employees' accrued monthly benefit will commence, plus they will receive the accumulated amount of the accrued benefit paid to the DROP, as well as the interest earned on such benefit.

Uniformed (Plans A and B):

Same as municipal except that employees are eligible as soon as they have ten years of service and have reached minimum retirement age.

Elected (Plan L):

Officials elected to Office after September 18, 2009 are not eligible to participate in the DROP.

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APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

1. Participation

Municipal:

Municipal employees hired or rehired after the Plan ‘10 effective date (as shown below) become members in Plan ‘10 immediately upon employment. All Municipal employees except Elected Officials hired or rehired after their Plan 16 effective date become members of Plan 16.

Employees of the Sheriffs’ Office or Register of Wills: January 1, 2012

Employees represented by AFSCME, District Council 47: March 5, 2014

Municipal employees in the civil service not represented by a union: May 14, 2014

Employees represented by AFSCME, District Council 33, other than guards: September 2014

Guards represented by DC 33: November 11, 2014

Municipal employees not in the civil service and not represented by a union:
November 11, 2014

Elected Officials: November 11, 2014

All employees except Register of wills and guards represented by DC 33 have the option within 30 days to elect to participate in Plan 87 Municipal.

Uniformed:

Police employees hired or rehired on or after January 1, 2010 and Fire employees hired or rehired on or after October 15, 2010 are members in Plan ‘10 immediately upon employment. Employees have the option within 30 days to elect to participate in Plans A or B.

Existing Plan A, Plan B, and Plan Y participants had the option, for a period of ninety (90) days, to make an irrevocable election to enter the Plan ‘10. Employees who elected do so would have their benefits in the existing pension plan frozen, and their future earnings and service will count only toward benefits under Plan ‘10.

2. Credited Service

Municipal:

Credited service means the period of employment with the City during which the employee makes contributions to the Retirement System. Certain leaves of absence may also be credited.

Uniformed:

Same as municipal.

3. Total Compensation

Municipal:

Total compensation means the base rate of pay, overtime, and longevity payments received during a 12-month period.

Uniformed:

Total compensation means the base rate of pay, longevity payments, and stress or premium pay (up to 6% of base pay) received during a 12-month period.

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4. Final Compensation

Municipal:

Final compensation means whichever is greater: annual base rate of pay at the time of termination or the total compensation received during the 12 months immediately preceding termination, including supplementary compensation received under Civil Service Regulation No. 32.

Uniformed:

Same as municipal.

5. Average Final Compensation

Municipal:

Average final compensation means the arithmetic average of the total compensation received during the five calendar or anniversary years producing the highest average.

Uniformed:

Same as municipal.

6. Employee Contributions

Municipal:

Total employee contributions equal 50% of the gross normal cost for members in the municipal division.

Effective January 1, 2019, current employees with annual salary (excluding overtime) in excess of \$45,000 will pay additional tier contributions on their total compensation over their base rates as follows: +0.50% for annual salary between \$45,000-\$55,000; +1.50% for annual salary between \$55,000-\$75,000; +2.00% for annual salary between \$75,000-\$100,000; and +2.75% for annual salary greater than 100,000.

Uniformed:

Total employee contributions equal 5.5% of total compensation up to twenty years of credited service.

Member contributions for current employees are increased by 0.92% effective July 1, 2017 and an additional 0.92% effective July 1, 2018. For new employees hired or rehired on or after July 1, 2017 employee contributions rate shall be increased by 2.5% over the current rate of 5.5%.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

7. Service Retirement

Eligibility

Municipal:

Each municipal employee is eligible to retire and receive a service pension at age 60 if he or she has 10 or more years of credited service.

Uniformed:

Each uniformed employee is eligible to retire and receive a service pension upon reaching age 50 and 10 or more years of credited service.

Benefit Amount

Municipal:

The service pension equals 1.25% of the employee’s average final compensation multiplied by years of credited service up to a maximum of 20 years.

Uniformed:

The service pension equals 1.75% of the employee’s average final compensation multiplied by years of credited service up to a maximum of 20 years.

8. Early Retirement

Eligibility

Municipal:

Each municipal employee is eligible to retire and receive a reduced service pension at age 52 if he has 10 or more years of credited service.

Uniformed:

Each uniformed employee is eligible to retire and receive a reduced service pension at age 40 if he or she has 10 or more years of credited service.

Benefit Amount

Municipal:

The annual amount is calculated the same as service retirement, reduced by 1/2 of 1% for each month the employee is younger than minimum retirement age.

Uniformed:

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

9. Deferred Vested Retirement

Eligibility

Municipal:

An employee who terminates employment after completing 10 or more years of credited service is eligible for a deferred vested retirement if his or her contributions have not been withdrawn.

Uniformed:

Same as municipal.

Benefit Amount

Municipal:

The annual deferred vested benefit is determined the same as service pensions, based on average final compensation and credited service at termination. This benefit begins at the service retirement date. If a member dies before the deferred vested benefit begins, an ordinary death benefit is payable (see Ordinary Death below). As an alternative, the person terminating employment may request at any time before benefits begin a return of employee contributions (without interest) instead of the deferred vested benefit.

Uniformed:

Same as municipal.

10. Withdrawal Benefit

Eligibility

Municipal:

Each terminating employee who has completed fewer than 10 years of credited service will receive a withdrawal benefit equal to employee contributions (without interest).

Uniformed:

Same as municipal.

11. Service Connected Death

Eligibility

Municipal:

The beneficiary of each active employee who dies solely from the performance of duties of the employee’s position with the City is eligible for an immediate death benefit.

Uniformed:

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

Benefit Amount

Municipal:

The death benefit equals the sum of the total employee contributions paid to the Retirement System (without interest), plus a yearly payment of 60% of the employee’s final compensation reduced by any death benefits payable under the Workers’ Compensation Act. This benefit is payable to the spouse until his or her death or remarriage, whichever occurs first. Dependent children are entitled to an additional 10% of final compensation yearly payment for each dependent child (up to two children) until the child reaches 18. This total benefit shall not exceed 80% of final compensation.

If there is no spouse, or if the spouse dies or remarries, each dependent child (up to three children) is eligible for a yearly payment of 25% of final compensation until the child reaches age 18. If there is no spouse or dependent children, each dependent parent is entitled to a 15% of final compensation yearly payment for life.

Uniformed:

Same as municipal.

12. Ordinary Death

Eligibility

Municipal:

The beneficiary of an active employee (or a terminated vested employee who did not withdraw his employee contributions) who dies after completing 10 years of credited service or who has reached age 60 is eligible for an immediate death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary of an active employee who dies before completing 10 years of credited service or reaching age 60 is eligible for a lump sum payment.

The beneficiary may be any relative by blood or marriage.

Uniformed:

The beneficiary of any employee who dies while actively employed (or a terminated vested employee who did not withdraw employee contributions) is eligible for a death benefit equal to an annual pension or a lump sum payment, whichever the beneficiary chooses.

The beneficiary may be any relative by blood or marriage.

Annual Pension

Municipal:

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received had he or she been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

Uniformed:

The annual ordinary death pension, payable for life, is equal to the regular service pension the employee would have received (based on a minimum of 10 years of service) had he been eligible to retire on the day before death and had elected Option 2, joint and 100% contingent annuitant (see Survivor Benefits below).

Lump Sum Payment

Municipal:

The lump sum payment is equal to the deceased employee’s average final compensation multiplied by years of credited service (not to exceed the service in the denominator) and divided by the number of years of credited service needed to become vested, plus the deceased employee’s contribution to the Retirement System (without interest) minus the total amount of the deceased employee’s life insurance which was paid by the City.

Uniformed:

Same as municipal.

13. Service-Connected Disability

Eligibility

Municipal:

An active employee found by the Board of Pensions and Retirement to be mentally or physically permanently incapacitated from any further performance of duties due solely to the result of the performance of duties is eligible for an immediate service-connected disability pension. The application for benefit must be made within one year after termination of employment.

Uniformed:

Same as municipal.

Benefit Amount

Municipal:

The service-connected disability benefit is equal to the employee’s contributions to the Retirement System, plus a yearly benefit of 70% of the employee’s final compensation, reduced by any disability benefits payable under the Worker’s Compensation Act.

If he or she withdraws contributions, the benefit is payable for his or her lifetime only.

If the employee leaves employee contributions with the Retirement System, he or she may choose a survivor benefit option (see Survivor benefit below) and the beneficiary will continue receiving benefit payments after his or her death.

Uniformed:

Same as municipal.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

14. Service-Connected Disability Periodic Adjustment

Eligibility

Municipal:

An employee who is receiving a service-connected disability benefit who is totally disabled and does not collect Social Security disability insurance benefits is eligible for a periodic adjustment.

Uniformed:

Same as municipal, but only applies to police employees.

Benefit Amount

Municipal:

The disabled employee’s pension will be increased in the eighth year after separation by the percentage raise given in the previous year to active employees in his or her job class. The adjustment will continue each year until the employee’s 65th birthday.

Uniformed:

Same as municipal.

15. Ordinary Disability

Eligibility

Municipal:

An active employee found by the Board to be mentally or physically permanently incapacitated from the further performance of duties due to an accident or illness not caused by the performance o/f duties is eligible for an immediate ordinary disability benefit provided he or she has at least 10 years of credited service. The application for benefits must be made within one year after termination.

Uniformed:

Same as municipal, except that fire employees only need five years of credited service and police employees have no service requirement if the disability is permanent and total. Police employees with permanent and partial disability need 10 years of credited service.

Benefit Amount

Municipal:

The annual ordinary disability benefit is equal to the benefit determined under the service pension formula using average final compensation and credited service as of the date of disablement.

If the employee is eligible for or receiving workers compensation, no benefit is payable. Such employee may apply for benefits at retirement age.

Uniformed (Plans A and B):

Same as municipal, except each eligible employee is automatically credited with a minimum of 10 years of service to calculate the annual benefit.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

16. Survivor Benefits

Eligibility

Municipal:

Service pensions, deferred vested benefits, service-connected disability benefits, and ordinary disability benefits are payable under five optional forms. Options 2 and 3 provide benefits actuarially equivalent to a lifetime only pension while Option 1 has no reduction.

Option 1 - A benefit is payable to the employee providing on his death, the beneficiary will receive a lump sum equal to the excess, if any, of the employee’s contributions over the sum of the payments received.

Option 2 - A reduced benefit payable to the employee with the provision that 100% of the reduced benefit will continue to be paid to the designated beneficiary for life after the death of the employee.

Option 3 - The same as Option 2 except only 50% of the reduced benefit is continued to the designated beneficiary.

Option 5 – Provides for a partial lump sum of between 6 and 36 monthly payments payable under Options 1, 2, 3 or 4. The remaining monthly benefit is reduced so that the partial lump sum plus the reduced benefit is actuarially equivalent to the original benefit.

Uniformed:

Same as municipal, except that police and fire employees may also elect Option 4:

Option 4 - Upon the employee’s death, 50% of the benefit will continue to be paid to the surviving spouse for life, provided the employee and spouse were married for two years before retirement and at death. If there is no eligible spouse at the time the employee dies, or the spouse dies before the full amount of the contributions have been returned, 50% of the benefit is continued to dependent children until age 18, or if no dependent children, payments are given to dependent parents for the remainder of their lives. In addition, Option 4 provides for a guaranteed return of employee contributions as described in Option 1 above.

17. Service-Connected Health Care Benefit

Eligibility

Municipal:

Not applicable.

Uniformed:

In the event of the death of a uniformed employee during the performance of his or her duties, a service-connected health care benefit may be payable to the surviving spouse and dependent children. Regular payments will be made of the appropriate cost of maintaining medical, dental, optical and pharmaceutical prescription benefits in force at the time of the employee’s death. Payments to the spouse cease upon remarriage and to the dependent children at age 18 (age 22 if a full-time student) or if dependent due to physical or mental infirmity, the duration of the infirmity. The health care benefits are not paid from the pension trust assets.

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘10

18. Deferred Retirement Option Plan (DROP)

Eligibility

Municipal:

Employees that have 10 years of service and have reached two years after the minimum retirement age may elect to participate in the DROP. During this time, their accrued benefit will go into a DROP account and will earn interest at a specified rate. The rate is calculated each year on January 1 and is equal to the lesser of the yield on 1-year treasury bonds and half of the valuation interest rate as of that date. The benefit is calculated as of the date they entered the DROP. At the end of the DROP, the employees' accrued monthly benefit will commence, plus they will receive the accumulated amount of the accrued benefit paid to the DROP, as well as the interest earned on such benefit.

Uniformed:

Same as municipal except that employees are eligible as soon as they have ten years of service and have reached minimum retirement age.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX D – SUMMARY OF PLAN PROVISIONS – PLAN ‘16

Employees in all Municipal groups (except elected officials) hired or rehired on or after the Plan 16 effective date (as shown below) are required to participate in the new Stacked Hybrid Plan – Plan 16.

Employees of the Sheriffs’ Office or Register of Wills: June 21, 2018
Employees represented by AFSCME, District Council 33: August 20, 2016
Employees represented by AFSCME, District Council 47: January 1, 2019
Municipal employees not represented by a union: January 1, 2019

Plan 16 benefits are similar to Plan 87, except that the average final compensation used in calculating benefits is limited by the Stacked Hybrid Cap of \$65,000. For DC 33 Plan 16 members, effective January 1, 2019 the Stacked Hybrid Cap was increased from \$50,000 to \$65,000.

Member contributions for Plan 16 members will also be based on compensation capped at \$65,000. Additionally, employees with annual salary (excluding overtime) in excess of \$45,000 will pay additional tier contributions on their total compensation over their base rates as follows: +0.50% for annual salary between \$45,000-\$55,000 and +1.50% for annual salary between \$55,000-\$65,000.

Municipal employee members of Plan 16 who are both not in the civil service and not represented by a union will contribute an additional amount to become vested in seven years instead of ten years.

Plan 16 members will have the option to participate in the Deferred Compensation Plan (DC Plan). For members whose benefits are capped under the retirement plan, the City will match 50% of the members’ contribution up to a maximum of 1.5% of the member’s annual compensation.

Summary of Plan Changes

None.

SUMMARY OF LEGISLATIVE CHANGES

The following table summarizes member contribution rates by Plan and by bargaining group where applicable. This information has been provided by the Staff and has been applied where effective as of the valuation date. The methodology to determine the employee contributions for accelerated vesting schedules follows the City code and has been reviewed by the Retirement Board.

**CITY OF PHILADELPHIA MUNICIPAL RETIREMENT SYSTEM
JULY 1, 2020 ACTUARIAL VALUATION**

APPENDIX D – SUMMARY OF PLAN PROVISIONS – MEMBER CONTRIBUTIONS

Member Contribution Rates by Membership Class				Effective 7/1/2021		
Plan 67	No SSA Coverage	Plan D (Police)		6.00%		
		Plan X (Fire)		6.00%		
		Plan J-(OHCD)		6.00%	Add on for Tier	
		Plan J1 (Non Repts; Exempts)		7.00%	Add on for Tier	
		Plan J2 (DC 47, DC 33 and OHCD)		7.00%	Add on for Tier	
		SSA	Plan J3 (Non Repts-Exempts: excluding Auditing (<i>Controller</i>) Department who are not in Civil Service)		4.75%	Add on for Tier
		Plan J4 (DC 47, DC 33)		4.75%	Add on for Tier	
		Plan J6 (Non Civil Service-Auditing Dept EE)		4.75%	Add on for Tier	
Plan 87		Plan A (Fire)		6.84%		
		Plan B (Police)		6.84%		
		Plan L (Elected)		11.56%	Add on for Tier	
		Plan Y		3.55%	Add on for Tier	
		Plan Y (Deputy Sheriffs and Register of Wills)		3.55%	Add on for Tier	
		Plan Y5		4.46%	Add on for Tier	
		Plan L8		12.59%	Add on for Tier	
		Plan Y2 (Non Repts-Exempts:excl Auditing EEs)		3.55%	Add on for Tier	
		Plan Y3 (DC 47, DC 33 and OHCD)		3.55%	Add on for Tier	
		Plan Y4 (Exempts-Auditing/ <i>Controller</i> Dept Ees)		3.55%	Add on for Tier	
Plan 87 Prime	Opted out of Plan 10	Plan Y1 (Deputy Sheriff)	DOH >= 1/1/2012 and < 6/20/2018	50% of Agregate Normal Cost of all members in Plan Y	4.25%	Add on for Tier
		Plan Y4 (Non Repts)	DOH >= 5/14/2014	+1%	4.55%	Add on for Tier
		Plan Y6 (DC 47)	DOH >= 3/5/2014	+1%	4.55%	Add on for Tier
		Plan Y9 (DC33-excluding Guards and OHCD)		+1%	4.55%	Add on for Tier
			DOH >= 9/9/2014			
		Plan Y12 (DC33: Guards)	DOH >= 9/9/2014 and < 11/14/2014	+1%	4.55%	Add on for Tier
		Plan Y11 (Exempts)	DOH >= 11/14/2014	+1%	4.55%	Add on for Tier
		Plan Y5.1 (5 yr vesting-Exempts)		+1%	5.46%	Add on for Tier
			DOH >= 11/14/2014			
		Plan L1 (Elected)	DOH >= 11/14/2014	+1%	12.56%	Add on for Tier
		Plan L8.1 (Elected)	DOH >= 11/14/2014	+1%	13.59%	Add on for Tier
		Plan B6 (Police)	DOH >= 1/1/2010 and < 7/1/2017	+1.84%	7.84%	
		Plan B6 (Police)	DOH >= 7/1/2017	+2.50%	8.50%	
		Plan A6 (Fire)	DOH >= 10/15/2010 and < 7/1/2017	+1.84%	7.84%	
Plan A6 (Fire)	DOH >= 7/1/2017	+2.50%	8.50%			
Plan 10		Plan B10 (Police)	DOH < 7/1/2017	+1.84%	7.34%	
		Plan B10 (Police)	DOH >= 7/1/2017	+2.50%	8.00%	
		Plan A10 (Fire)	DOH < 7/1/2017	+1.84%	7.34%	
		Plan A10 (Fire)	DOH >= 7/1/2017	+2.50%	8.00%	
		Plan Y10				
		Deputy Sheriff	DOH >= 1/1/2012 and < 6/20/2018	50% of Normal Cost for members of Plan 10	2.42%	Add on for Tier
		Register of Wills-MANDATORY	DOH >= 1/1/2012 and < 6/20/2018		2.42%	Add on for Tier
		DC33-Guards-MANDATORY	DOH >= 11/14/2014 and < 8/19/2016		2.42%	Add on for Tier
		DC 33	DOH < 8/19/2016			
		Non-Reps, DC 47			2.42%	Add on for Tier
	Elected		2.42%		Add on for Tier	
	Exempts (5 yr vesting-Exempts)		2.86%	Add on for Tier		
Plan 16		Plan S16				
		Deputy Sheriffs and Register of Wills	DOH >= 6/21/2018	Pensionable Earnings up to \$65,000	4.14%	Add on for Tier
		DC 33	DOH >= 8/20/2016		4.14%	Add on for Tier
		Non-Reps, DC 47	DOH >= 1/1/2019		4.14%	Add on for Tier
	Exempts (7 yr vesting-Exempts)	DOH >= 1/1/2019	4.45%		Add on for Tier	

APPENDIX E – GLOSSARY OF TERMS

1. Actuarial Liability

The Actuarial Liability is the difference between the present value of all future system benefits and the present value of total future normal costs. This is also referred to by some actuaries as the “accrued liability” or “actuarial accrued liability.”

2. Actuarial Assumptions

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement rate or rates of investment income and salary increases. Actuarial assumptions (rates of mortality, disability, turnover, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

3. Accrued Service

Service credited under the System which was rendered before the date of the actuarial valuation.

4. Actuarial Equivalent

A single amount or series of amounts of equal actuarial value to another single amount or series of amounts computed on the basis of appropriate actuarial assumptions.

5. Actuarial Funding Method

A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of a retirement system benefit between future normal cost and actuarial accrued liability. Sometimes this is referred to as the “actuarial cost method.”

6. Actuarial Gain/(Loss)

The difference between actual experience and actuarial assumption anticipated experience during the period between two actuarial valuation dates.

7. Actuarial Present Value

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

APPENDIX E – GLOSSARY OF TERMS

8. Adjusted Market Value of Assets

An asset value reflecting a five-year smoothing of asset gains and losses, as described in the Philadelphia Municipal Code Title 22-311.

9. Amortization

This term represents the paying off an interest-discounted amount with periodic payments of interest and principal—as opposed to paying off with a lump sum payment.

10. Normal Cost

The actuarial present value of retirement system benefits allocated to the current year by the actuarial funding method.

11. Unfunded Actuarial Liability (UAL)

The difference between actuarial liability and valuation assets. This is sometimes referred to as “unfunded actuarial accrued liability.”

Most retirement systems have unfunded actuarial liabilities. They typically arise each time new benefits are added and each time experience gains/losses are realized.

The existence of unfunded actuarial accrued liability is not in itself an indicator of poor funding. Also, unfunded actuarial liabilities do not represent a debt that is payable today. What is important is the ability of the plan sponsor to contribute the annual amortized cost to fund down the unfunded actuarial liability and the trend in unfunded actuarial liability amount.