



Cavanaugh Macdonald
CONSULTING, LLC
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Pension Funding Report
Ohio Police & Fire Pension Fund
Actuarial Valuation as of
January 1, 2021





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 2021

Board of Trustees
Ohio Police & Fire Pension Fund
140 East Town Street
Columbus, Ohio 43215

Members of the Board:

Cavanaugh Macdonald (CMC) is pleased to present this report on the results of the actuarial valuation of the Ohio Police & Fire Pension Fund (OP&F). This report presents the results of the annual actuarial valuation of the assets and liabilities of OP&F as of January 1, 2021, prepared in accordance with Chapter 742 of the Ohio Revised Code (ORC), as amended by Senate Bill No. 340. The valuation takes into account all of the promised benefits to which members are entitled, including pension and survivor benefits.

The principal results of the valuation do not take into account Medicare Part B premium reimbursements or any other health care benefits. However, at the request of the Ohio Retirement Study Council (ORSC), supplemental results have been prepared that do take into account the liability for Medicare Part B premium reimbursements and are presented in Table 1A in the report.

The purpose of the valuation is to determine the financial status of OP&F on an actuarial basis. Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. CMC will not accept any liability for any statement made about the report without prior review by CMC.

Where presented, references to “funded ratio” and “unfunded accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.



This report does not include accounting disclosure information under Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68. CMC will provide disclosure information under Statement Nos. 67 and 68 in a separate report after OP&F's 2021 year-end. CMC also prepares a separate valuation of OP&F retiree health care benefits.

The valuation was based on the actuarial assumptions and methods that have been adopted by the Board of Trustees, including a valuation interest rate of 8.00 percent per annum compounded annually. The assumptions were effective January 1, 2017 and recommended by the actuary based on a five-year experience review covering the period 2012-2016. The next experience review will cover the five-year period 2017-2021. Actuarial Standards of Practice require that the likelihood and extent of future mortality improvements be considered. We have reflected future mortality improvement in the valuation.

Assets and Membership Data

OP&F reported to the actuary the individual data for members as of the valuation date. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the pension trust fund taken into account in the valuation was based on financial statements prepared for us by OP&F.

An assumption is made by CMC to account for salary adjustments reported by employers assumed to occur after the census information has been provided to CMC by OP&F.

Funding Objectives and Progress

The actuary uses an actuarial cost method to determine the portion of OP&F's liabilities accrued by the members as of the valuation date and the portion that is attributable to future years of service. The rate of contribution necessary to systematically fund the future service liabilities, the normal cost rate, is calculated under the cost method to be a level percentage of active member payroll. The portion of the liabilities accrued as of the valuation date, the actuarial accrued liability (AAL), is compared to a market-related, actuarial value of OP&F's assets. The amount of liabilities in excess of the assets is called the unfunded actuarial accrued liability (UAAL).

The actuary determines how many years are required by OP&F to completely amortize the UAAL (the funding period), using the member and employer contributions reduced by the amount allocated to health care and the amount of normal cost for the year. For 2003-2012, the funding period was infinite years, meaning the annual contribution toward the unfunded when compared to the unfunded amount was not sufficient to pay it off. As a result of benefit and member contribution changes under Senate Bill No. 340, changes to the DROP program, and a reduction in the contribution allocation to the Health Care Stabilization Fund by the Board of Trustees, and favorable asset investment gains, the pension funding period has decreased from 47 years as of January 1, 2013 to 28 years as of January 1, 2020. As of January 1, 2021, the funding period decreased three years to 25 years.



Section 742.16 of the ORC, as adopted by Senate Bill No. 82, sets forth an objective that the funding period is no more than 30 years. If the funding period exceeds 30 years, a plan shall be developed and presented by the Board of Trustees to the ORSC to reduce the funding period to not more than 30 years. Section 742.14 of the ORC, as amended by Senate Bill No. 340, sets forth that the 30-year funding analysis be performed every three years and the 30-year funding plan, if necessary, be developed and presented not later than 90 days after the Board of Trustees' receipt of the actuarial valuation and 30-year funding analysis. The most recent triennial analysis was based on the January 1, 2019 actuarial valuation, and showed the funding period was 29 years, so no 30-year funding plan is required. The next analysis will be performed based on the January 1, 2022 actuarial valuation.

The funded ratio (i.e., the ratio of actuarial assets to the AAL) determined as of January 1, 2021 is 71.2 percent, compared to 69.7 percent as of as of January 1, 2020. If measured using the market value of assets, the funded ratio would be higher at 72.5 percent on account of net investment gains not yet reflected in the actuarial assets. Taking into account the AAL for Medicare Part B premium reimbursements, the funded ratio would be 70.4 percent using the actuarial assets and 71.7 percent using the market value of assets. The funded ratio is not intended to measure the adequacy of funding in any analysis of a possible settlement of plan liabilities.

Supporting Schedules and Certification

The valuation report shows detailed summaries of the financial results of the valuation and membership data used in preparing this valuation. The actuary prepared the following supporting schedules for inclusion in the Actuarial and Statistical Sections of the OP&F Comprehensive Annual Financial Report: Analysis of Financial Experience, Short-Term Solvency Test, Schedule of Funding Progress, Calculation of Actuarial Value of Assets, and Retirees and Beneficiaries Added to and Removed from the Rolls.

The valuation assumptions were chosen by the Board of Trustees with the advice of the actuary. The assumptions used to develop the January 1, 2021 valuation are individually reasonable and in combination represent our best estimate of anticipated experience under the plan.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, CMC performed no analysis of the potential range of such future differences.

During 2018 OP&F retained Cavanaugh Macdonald as their actuary. The January 1, 2019 valuation was the first valuation completed by Cavanaugh Macdonald. All results presented in this report for years prior to the December 31, 2018 were performed by the prior actuary(s).



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

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries, have experience in performing valuations for public retirement plans, and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board and the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement plan and on actuarial assumptions that are internally consistent and reasonable based on the actual experience of the Fund and future expectations. However, the Board of Trustees has the final decision regarding the selection of the assumptions and adopted them as indicated in Appendix C.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'LL'.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in black ink, appearing to read 'Wendy Ludbrook'.

Wendy T. Ludbrook, FSA, EA, FCA, MAAA
Senior Actuary

A handwritten signature in black ink, appearing to read 'Ryan Gunderson'.

Ryan Gunderson
Senior Consultant



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EXECUTIVE SUMMARY

Introduction

This report presents the results of the actuarial valuation as of January 1, 2021 of pension benefits for the Ohio Police and Fire Pension Fund (OP&F).

The primary purposes of performing an actuarial valuation are to:

- Disclose certain liability and asset measures as of the valuation date,
- Determine the funding period for the unfunded actuarial accrued liability (UAAL), given the current statutory contribution rates,
- Compare the actual experience since the last valuation date to that expected, and
- Analyze and report on any trends in contributions, assets, and liabilities over the past several years.

The principal valuation results include:

- The funding period for the unfunded actuarial accrued liability as of January 1, 2021 is 25 years, given the current statutory contribution rates.
- The funded status of the Plan, determined as of January 1, 2021, based on the actuarial accrued liability and the actuarial value of assets as of that date, is 71.2 percent.
- There was an experience gain (actual experience was more favorable than anticipated by the assumptions) of \$228.5 million for the year ending December 31, 2020.

This valuation report does not contain information under GASB Statement Nos. 67 and 68. CMC will provide disclosure information under Statement Nos. 67 and 68 in a separate report after OP&F's 2021 year-end.

The valuation was completed based upon membership and financial data submitted by OP&F. Note that an assumption is made in the valuation for the impact of late reported salary adjustments from employers. Thus, any salary amounts shown in this report are the amounts reported to Cavanaugh Macdonald Consulting (CMC) by OP&F, increased by an assumed percentage (1.137 percent on the reported salaries for 2020).

A separate valuation, and report, is performed for all health care benefits provided by OP&F. However, at the request of the ORSC, this report includes a supplemental table, Table 1A, that discloses the combined valuation results if the normal cost and AAL for Medicare Part B premium reimbursements were included with the pension benefits.

Changes since Last Year

The plan provisions used in this valuation are unchanged from last year.



EXECUTIVE SUMMARY

Summarized below are the principal financial results for the OP&F Pension Fund based upon the actuarial valuation as of January 1, 2021. Comparable results from the January 1, 2020 valuation are also shown.

	January 1, 2021	January 1, 2020
Membership Data		
Active Members		
Number	29,138	29,340
Annualized Salaries	\$ 2,414,537,420	\$ 2,365,611,876
Average Pay	82,866	80,628
Membership Payroll	2,381,764,788	2,313,631,090
Retirees and Beneficiaries		
Number	30,147	29,780
Annual Allowances	\$ 1,199,288,527	\$ 1,150,725,264
Average Benefit Payment	39,781	38,641
Vested Former Members		
Number	267	234
Contribution Rates (as a Percentage of Payroll)		
Statutory Contribution Rates:		
Employer Average	21.66%	21.63%
Member	<u>12.25%</u>	<u>12.25%</u>
Total	33.91%	33.88%
Allocation of Employer Contribution Rate:		
Pension Contribution Rate:		
- Employer Normal Cost	3.45%	3.96%
- Accrued Liability Rate	<u>17.71%</u>	<u>17.17%</u>
-Total Employer Pension Rate	21.16%	21.13%
Health Care Contribution Rate	<u>0.50%</u>	<u>0.50%</u>
Total Employer Contribution Rate	21.66%	21.63%
Actuarial Funded Status		
Actuarial Accrued Liability (AAL)	\$ 22,628,591,064	\$ 22,044,283,396
Actuarial Assets	<u>16,112,136,611</u>	<u>15,360,122,693</u>
Unfunded Accrued Liability (UAAL)	6,516,454,453	6,684,160,703
Funded Ratio	71.2%	69.7%
Funding Period	25 Years	28 Years



EXECUTIVE SUMMARY

Actuarial Funded Status

OP&F's funded status is measured by comparing the actuarial value of assets with the AAL. The AAL is the present value of benefits attributed to past service under OP&F's funding method and reflects future assumed pay increases for active members. The actuarial value of assets is a market-related value of assets that defers recognition of any market returns that are greater than or less than the assumed investment return over four years. The use of this asset valuation method mitigates, or smooths, the impact of market fluctuations from year to year in the valuation assets. The asset valuation method includes a 20 percent corridor around the market value, so that the actuarial value must be no less than 80 percent and no greater than 120 percent of the market value of assets.

As of January 1, 2021, the AAL exceeds the actuarial value of assets, resulting in an unfunded actuarial accrued liability of \$6.5 billion. The funded ratio, which is the ratio of the actuarial assets to the AAL, is 71.2 percent. These figures are based on an actuarial value of assets of \$16.1 billion and an AAL of \$22.6 billion.

Reasons for Change in the Funded Ratio

The funded ratio increased from 69.7 percent as of January 1, 2020 to 71.2 percent as of January 1, 2021, an increase of 1.5 percentage points. The primary reasons for the increase are as follows:

	Increase or (Decrease)
Investment gain based on actuarial value of assets	0.6%
Net liability gain due to plan experience	0.3%
Net liability gain due to contribution level	<u>0.6%</u>
Net increase (decrease)	1.5%

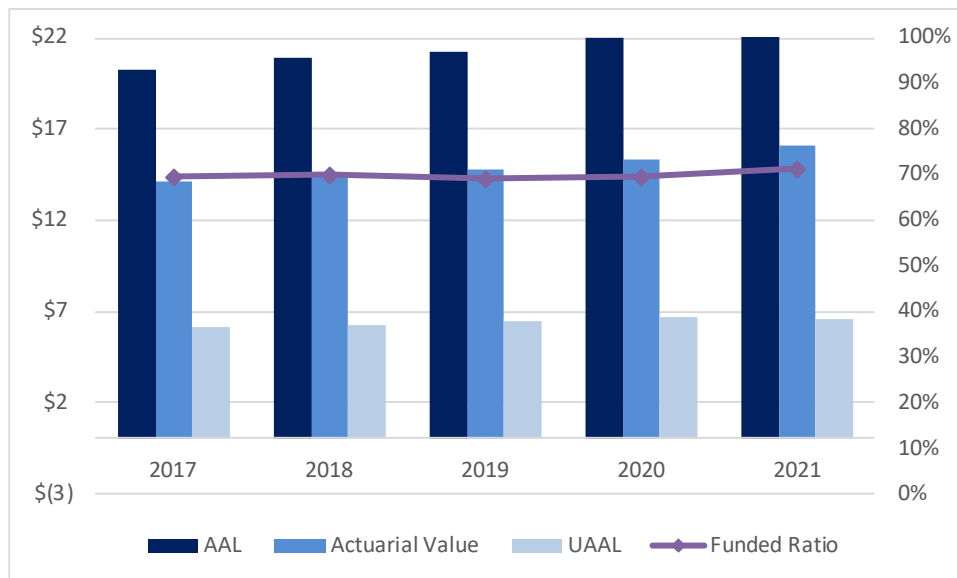
Five-Year History of Actuarial Funded Status

Valuation as of Jan. 1	Actuarial Accrued Liability (AAL)	Actuarial Assets	Unfunded Actuarial Accrued Liability (UAAL)	Funded Ratio
2021	\$22,628,591,064	\$16,112,136,611	\$6,516,454,453	71.2%
2020	22,044,283,396	15,360,122,693	6,684,160,703	69.7%
2019	21,264,708,173	14,753,160,407	6,511,547,766	69.4%
2018	20,887,227,279	14,594,562,053	6,292,665,226	69.9%
2017	20,290,393,633	14,162,487,807	6,127,905,826	69.8%



EXECUTIVE SUMMARY

Five-Year History of Liabilities, Assets and Funded Ratio (in Billions)



Net Actuarial Gain (Loss)

The valuation process uses many assumptions to estimate future benefit payments and the corresponding liability. If actual experience is more favorable than expected by the assumption, an actuarial gain occurs. Likewise, if actual experience is unfavorable compared to the assumption, an actuarial loss occurs. The actual experience measured in this valuation is that which occurred during the prior plan year (calendar year 2020). There was a net actuarial gain of \$228.5 million, consisting of a gain of \$135.0 million on the actuarial value of assets and a gain of \$93.5 million on liabilities. The asset gain reflects the investment performance on a portion of actual market experience during 2020 and the previous three years that is recognized in the January 1, 2021 actuarial value of assets. The analysis of the net experience gain/loss is shown in Table 5.

Five-Year History of Actuarial Gains or (Losses)

Fiscal Year Ended Dec. 31	Net Gain or (Loss)	As a % of AAL
2020	\$ 226,263,826	1.01%
2019	(107,692,351)	-0.49%
2018	(83,052,873)	-0.39%
2017	(85,099,004)	-0.41%
2016	(569,516,945)	-2.81%



EXECUTIVE SUMMARY

Rate of Return on Assets

The investment returns of the trust fund on a market value basis (i.e., total return including both realized and unrealized gains and losses) for years ended December 31, 2016 through December 31, 2020 are shown below. Also shown are the rates of return on the actuarial value of assets used to determine OP&F's actuarial funded status.

Five-Year History of Rates of Return

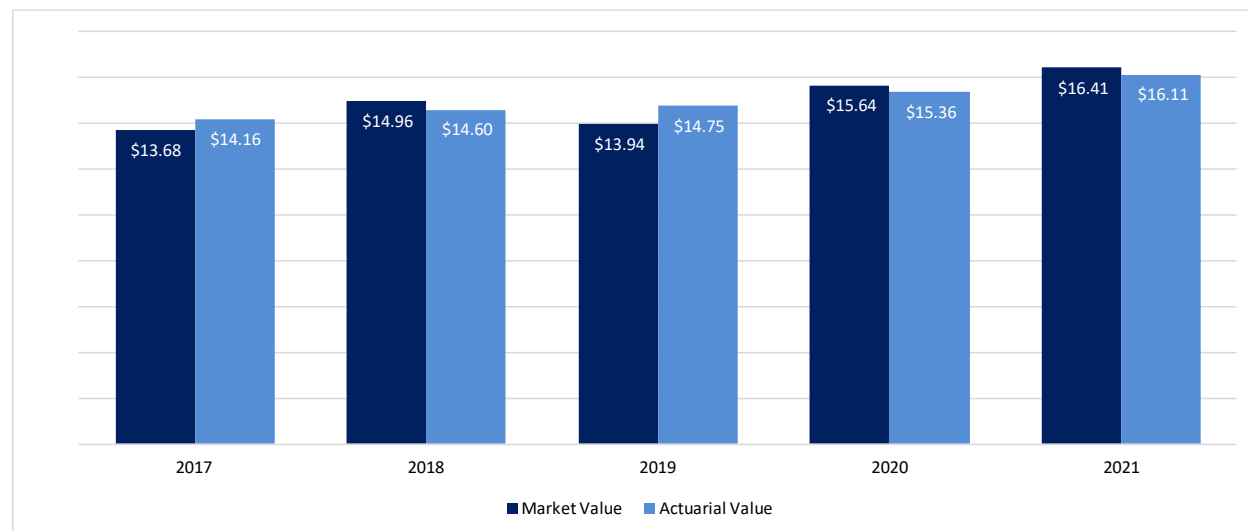
Year Ended Dec. 31	Rate of Return Based on:	
	Market Value*	Actuarial Value**
2020	9.21%	8.89%
2019	17.89%	8.41%
2018	-1.78%	5.04%
2017	14.30%	6.90%
2016	11.51%	7.33%

* Rate of return, gross of fees, as reported in the OP&F CAFR

** Rate of return on actuarial value of assets is net of fees

Five-Year History of Market Value and Actuarial Assets as of January 1

(in Billions)





EXECUTIVE SUMMARY

Funding Period

The actuary determines how many years are required to fully amortize the UAAL (the funding period), using the combined member and employer contribution rates reduced by the amount allocated to fund health care benefits and the normal cost rate for the year. The calculation of the funding period takes into account future payroll growth, currently assumed at 3.25 percent per year. The calculation also takes into account future expected adjustments in the normal cost rate and changes in the statutory contribution rates as a result of Senate Bill No. 340.

The funding period, based on the January 1, 2021 valuation, is 25 years. This is the number of years it will take to pay off the \$6.5 billion UAAL as of January 1, 2021. The funding period decreased in the current valuation from 28 years in the January 1, 2020 valuation.

If all assumptions are met on an actuarial basis, the funding period will decrease each year. However, if all assumptions are not met, the period could increase. Two assumptions that greatly impact the funding period are investment returns and future payroll growth. OP&F experienced overall favorable investment results for 2020, which when combined with unrecognized returns from 2017 and 2019 offset unrecognized 2018 returns that were less than the 8.00 percent expected return assumption. All else being equal, if an 8.00 percent market return is met in the future, the funding period will remain below 30 years. However, if an 8.00 percent market return is met in the future, but payroll growth is less than 3.25 percent over time, then future contributions will be less than projected and may be insufficient to pay off the UAAL over 30 years.

Five-Year History of Contribution Rates and Funding Period

Member contribution rates increased from 10.75 to 11.50 percent on July 2, 2014 and to 12.25 percent on July 2, 2015.

Valuation as of Jan 1,	Member	Contribution Rates		Employer Average	Health Care	Allocation	
		Police Employer	Fire Employer			Pension	Funding Period
2021	12.25%	19.50%	24.00%	21.66%	0.50%	33.41%	25 Years
2020	12.25%	19.50%	24.00%	21.63%	0.50%	33.38%	28 Years
2019	12.25%	19.50%	24.00%	21.62%	0.50%	33.37%	29 Years
2018	12.25%	19.50%	24.00%	21.62%	0.50%	33.37%	28 Years
2017	12.25%	19.50%	24.00%	21.61%	0.50%	33.36%	28 Years



SECTION I – VALUATION RESULTS

**TABLE 1
SUMMARY OF RESULTS OF THE ACTUARIAL VALUATION
AS OF JANUARY 1, 2021**

Item	Police	Firefighters	Total
Membership Data			
1. Number of Members			
a. Active Members			
i. Vested Actives	6,894	6,460	13,354
ii. Non-Vested Actives	<u>8,567</u>	<u>7,217</u>	<u>15,784</u>
iii. Total Actives	15,461	13,677	29,138
b. Vested Former Members	167	100	267
c. Rehired Retirees	159	66	225
d. Retirees and Disableds	12,626	9,545	22,171
e. Beneficiaries and Survivors	4,624	3,352	7,976
f. Contributions Refund Due	<u>3,087</u>	<u>802</u>	<u>3,889</u>
g. Total	36,124	27,542	63,666
2. Annualized Salaries	\$ 1,257,024,359	\$ 1,157,513,062	\$ 2,414,537,420
3. Membership Payroll	1,237,060,209	1,144,704,579	2,381,764,788
4. Annual Allowances	677,457,185	521,831,343	1,199,288,527
Valuation Results			
5. Present Value of Future benefits (PVFB)			
a. Active Members	\$ 6,407,105,471	\$ 6,061,085,932	\$ 12,468,191,403
b. Vested Former Members	27,950,312	16,014,860	43,965,172
c. Rehired Retirees	11,206,003	5,116,783	16,322,786
d. Retirees and Disableds	7,219,248,583	5,566,075,611	12,785,324,194
e. Beneficiaries and Survivors	468,285,367	315,297,425	783,582,792
f. Contributions Refund Due	<u>39,263,698</u>	<u>12,650,083</u>	<u>51,913,781</u>
g. Total PVFB	\$ 14,173,059,434	\$ 11,976,240,694	\$ 26,149,300,128
6. Normal Cost			
a. Normal Cost	\$ 179,737,290	\$ 169,671,220	\$ 349,408,510
b. Administrative Expenses	14,173,142	10,692,019	24,865,161
c. State Subsidy	<u>128,635</u>	<u>97,041</u>	<u>225,676</u>
d. Total: (a) + (b) - (c)	\$ 193,781,797	\$ 180,266,198	\$ 374,047,995
e. Normal Cost Rate: (d) / (3)	15.66%	15.75%	15.70%
7. Present Value of Future Normal Cost	\$ 1,758,453,451	\$ 1,747,684,145	\$ 3,506,137,596



SECTION I – VALUATION RESULTS

**TABLE 1
SUMMARY OF RESULTS OF THE ACTUARIAL VALUATION
AS OF JANUARY 1, 2021 (continued)**

Item	Police	Fire fighters	Total
8. Actuarial Accrued Liability (AAL)			
a. Active Members	\$ 4,648,652,020	\$ 4,313,401,787	\$ 8,962,053,807
b. Vested Former Members	27,950,312	16,014,860	43,965,172
c. Rehired Retirees	11,206,003	5,116,783	16,322,786
d. Retirees and Disableds	7,219,248,583	5,566,075,611	12,785,324,194
e. Beneficiaries and Survivors	468,285,367	315,297,425	783,582,792
f. Contributions Refund Due	39,263,698	12,650,083	51,913,781
g. Total	\$ 12,414,605,983	\$ 10,228,556,549	\$ 22,643,162,532
h. Employer Accrued Liability	(8,227,256)	(6,344,212)	(14,571,468)
i. Adjusted AAL	\$ 12,406,378,727	\$ 10,222,212,337	\$ 22,628,591,064
9. Actuarial Value of Assets*	\$ 8,833,659,521	\$ 7,278,477,090	\$ 16,112,136,611
10. Unfunded Accrued Liability (8) - (9)	3,572,719,206	2,943,735,247	6,516,454,453
11. Funding Period			25
12. Funded Ratio	71.2%	71.2%	71.2%
Allocation of Employer Contribution Rate			
13. Employer Contribution Rate			
a. Total Employer Rate (by law)	19.50%	24.00%	21.66%
b. Health Care Stabilization Fund Allocation	<u>0.50%</u>	<u>0.50%</u>	<u>0.50%</u>
c. Employer Pension Rate: (a) - (b)	19.00%	23.50%	21.16%
d. Total Normal Cost Rate	15.66%	15.75%	15.70%
e. Member Rate (by law)	<u>12.25%</u>	<u>12.25%</u>	<u>12.25%</u>
f. Employer Normal Cost Rate: (d) - (e)	3.41%	3.50%	3.45%
g. Unfunded Accrued Liability			
Amortization Rate: (c) - (f)	15.59%	20.00%	17.71%

* The Actuarial Value fo Assets is split between Police and Firefighters in proportion to the Actuarial Accrued Liability.



SECTION I – VALUATION RESULTS

TABLE 1A

VALUATION RESULTS AS OF JANUARY 1, 2021 ADJUSTED FOR MEDICARE PART B REIMBURSEMENT LIABILITIES*

Item	Police	Fire fighters	Total
Valuation Results			
1. Present Value of Future benefits (PVFB)			
a. Pension Benefits	\$ 14,173,059,434	\$ 11,976,240,694	\$ 26,149,300,128
b. Medicare Part B Benefits	<u>154,617,750</u>	<u>129,140,642</u>	<u>283,758,392</u>
c. Total	\$ 14,327,677,184	\$ 12,105,381,336	\$ 26,433,058,520
2. Normal Cost			
a. Pension Benefits	15.66%	15.75%	15.70%
b. Medicare Part B Benefits	<u>0.08%</u>	<u>0.08%</u>	<u>0.08%</u>
c. Total	15.74%	15.83%	15.78%
3. Actuarial Accrued Liability (AAL)			
a. Pension Benefits	\$ 12,406,378,727	\$ 10,222,212,337	\$ 22,628,591,064
b. Medicare Part B Benefits	<u>146,425,528</u>	<u>120,670,433</u>	<u>267,095,961</u>
c. Total	\$ 12,552,804,255	\$ 10,342,882,770	\$ 22,895,687,025
4. Actuarial Value of Assets*	<u>\$ 8,833,659,521</u>	<u>\$ 7,278,477,090</u>	<u>\$ 16,112,136,611</u>
5. Unfunded Accrued Liability	3,719,144,734	3,064,405,680	6,783,550,414
6. Funded Ratio	70.4%	70.4%	70.4%
Allocation of Employer Contribution Rate			
7. Employer Contribution Rate			
a. Total Employer Rate (by law)	19.50%	24.00%	21.66%
b. Health Care Stabilization Fund Allocation	<u>0.50%</u>	<u>0.50%</u>	<u>0.50%</u>
c. Employer Pension Rate: (a) - (b)	19.00%	23.50%	21.16%
d. Pension Normal Cost Rate	15.66%	15.75%	15.70%
e. Medicare Part B Normal Cost Rate	<u>0.08%</u>	<u>0.08%</u>	<u>0.08%</u>
f. Employer Normal Cost Rate: (d) + (e)	15.74%	15.83%	15.78%
g. Member Rate (by law)	<u>12.25%</u>	<u>12.25%</u>	<u>12.25%</u>
h. Employer Normal Cost Rate: (f) - (g)	3.49%	3.58%	3.53%
i. Unfunded Accrued Liability Amortization Rate: (c) - (h)	15.51%	19.92%	17.63%

* The Actuarial Value of Assets is split between Police and Firefighters in proportion to the pension Actuarial Accrued Liability. While the Actuarial Accrued Liability and Normal Cost have been adjusted in this illustration to reflect the liability for Medicare Part B reimbursements, the Actuarial Value of Assets is unadjusted for any Health Care Stabilization Fund



SECTION I – VALUATION RESULTS

TABLE 2

SUMMARY OF MARKET VALUE OF PLAN ASSETS AS OF DECEMBER 31, 2020

Summary of Assets for Years Ending December 31,	2020	2019
1. Market Value of Assets as of January 1*	\$ 15,636,590,807	\$ 13,941,056,807
2. Contributions During Calendar Year		
a. Member	\$ 312,628,926	\$ 303,413,682
b. Employer	518,204,527	502,043,282
c. State Subsidy	<u>225,676</u>	<u>260,488</u>
d. Total	831,059,129	805,717,452
3. Benefit Payments During Calendar Year	\$ 1,400,413,884	\$ 1,394,027,927
4. Administrative Expenses During Calendar Year	\$ 18,903,295	\$ 21,249,464
5. Income During Calendar Year		
a. Interest, Dividends and Other Income	\$ 392,513,944	\$ 440,997,843
b. Appreciation/(Depreciation)	1,017,534,114	1,915,798,237
c. Investment Expenses	<u>48,078,974</u>	<u>52,439,162</u>
d. Investment Return After Expenses (a) + (b) - (c)	1,361,969,084	2,304,356,918
e. Other Income/Changes	<u>823,416</u>	<u>737,021</u>
f. Total Income (d) + (e)	1,362,792,500	2,305,093,939
6. Market Value of Assets as of December 31* (1) + (2d.) - (3) - (4) + (5f.)	\$ 16,411,125,257	\$ 15,636,590,807
7. Rate of Return (5d.) / [(1) + 0.5 * ((2d.) - (3) - (4) + (5e.))]	8.88%	16.90%
*The Market Value of Assets includes the DROP accrual balances of \$1,838,381,783, \$1,715,029,868 and \$1,656,454,880 as of December 31, 2020, 2019 and 2018 respectively.		



SECTION I – VALUATION RESULTS

TABLE 3

DERIVATION OF ACTUARIAL VALUE OF ASSETS AS OF JANUARY 1, 2021

						January 1, 2021
1. Market Value of Assets as of December 31, 2020					\$	16,411,125,257
2. Determination of Deferred Gain (Loss)						
	<u>Return on Market Value of Assets</u>					
	<u>Year</u>	<u>Actual</u>	<u>Expected</u>	<u>Gain/(Loss)</u>	<u>% Deferred</u>	<u>Deferred Amount</u>
	2020	\$1,361,969,084	\$1,227,428,820	\$134,540,264	75%	\$100,905,198
	2019	2,304,356,918	1,090,925,194	1,213,431,724	50%	606,715,862
	2018	(460,216,086)	1,174,313,569	(1,634,529,655)	25%	(408,632,414)
	2017	1,808,150,698	1,073,514,102	734,636,596	0%	-
						298,988,646
3. Adjustment for 20% corridor						-
4. Actuarial Value of Assets as of January 1, 2021: (1) - (2) + (3)					\$	16,112,136,611
5. Actuarial Rate of Return *						
a. Actuarial Value of Assets as of January 1, 2020					\$	15,360,122,693
b. Contributions During 2020						831,059,129
c. Benefits Paid During 2020						1,400,413,884
d. Expenses During 2020						18,903,295
e. Other Income						823,416
f. Return on an Actuarial Basis						1,339,448,552
g. Actuarial Rate of Return: (f) / [(a) + 0.5 * ((b) - (c) - (d) + (e))]						8.89%

* The actuarial rate of return is the rate of return based on the change in the actuarial value of assets from last year to this year. The rate of return is calculated assuming contributions and disbursements occur halfway through the year.



SECTION I – VALUATION RESULTS

TABLE 4

**ANALYSIS OF CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY
AS OF JANUARY 1, 2021**

	January 1, 2021
1. Unfunded Accrued Liability at January 1, 2020	\$ 6,684,160,703
2. Contributions Toward Unfunded Accrued Liability	456,063,297
3. Interest Credit at 8.00% to December 31, 2020	516,841,272
4. Expected Unfunded Accrued Liability at December 31, 2020 (1)-(2)+(3)	6,744,938,678
5. Actual Unfunded Accrued Liability at January 1, 2021	\$ 6,516,454,453
6. Net Gain (Loss) (4) - (5)	\$ 228,484,225
7. Reasons for Net Gain (Loss)	
a. Experience Gains (Losses)	
i. Gain (Loss) from Investment Return on Actuarial Value of Assets	\$ 134,992,475
ii. Gain (Loss) from Demographic Experience and Other	91,271,351
iii. Subtotal	226,263,826
(b) Gain (Loss) from Pay Load Adjustment for Late Reported Pays	2,220,399
(c) Total	\$ 228,484,225



SECTION I – VALUATION RESULTS

TABLE 5

DETAILED ANALYSIS OF GAINS AND LOSSES DUE TO PLAN EXPERIENCE RESULTING IN DIFFERENCES BETWEEN ASSUMED AND ACTUAL EXPERIENCE

Plan Experience	Gain / (Loss) for Year Ended January 1,				
	2021	2020	2019	2018	Total
Turnover If more liabilities are released by withdrawal separations from active membership than assumed, there is a gain. If smaller releases, there is a loss.	\$ (9,775,170)	\$ (10,222,710)	\$ (3,121,347)	\$ (27,220,946)	\$ (50,340,173)
Retirement If members retire at older ages than assumed, there is a gain. If younger, there is a loss.	(77,855,153)	(61,852,611)	32,335,086	(6,766,327)	(114,139,005)
Death among retired members and beneficiaries If more deaths occur than assumed, there is a gain. If fewer deaths than assumed, there is a loss.	(23,792,783)	(32,634,935)	8,808,719	(19,519,180)	(67,138,179)
Disability retirements If disability claims are less than assumed, there is a gain. If more claims, a loss.	11,252,059	3,232,986	12,441,861	3,477,918	30,404,824
Salary increase/decrease If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	57,863,583	11,532,085	149,203,045	107,318,122	325,916,835
Return to work If participants return to work with previous service restored, there is a loss.	(1,684,844)	(1,089,645)	(11,066,219)	(1,185,692)	(15,026,400)
New Entrants If new entrants join OP&F, there is a loss.	(6,031,951)	(8,132,872)	(7,984,831)	(6,304,990)	(28,454,644)
Deaths among actives If claims costs are less than assumed, there is a gain. If more claims, a loss.	(469,122)	(539,065)	(1,393,575)	(1,236,303)	(3,638,065)
Other Experience and Payroll Growth If other experience, including less than expected payroll growth, increases the unfunded liability, there is a loss. Otherwise, there is a gain.	<u>141,764,732</u>	<u>(68,637,374)</u>	<u>237,392,859</u>	<u>5,633,515</u>	<u>316,153,732</u>
Net gain (or loss) during the year due to plan experience	\$ 91,271,351	\$ (168,344,141)	\$ 416,615,598	\$ 54,196,117	\$ 393,738,925
Investment If there is greater investment return than assumed, there is a gain. If less return, a loss.	<u>134,992,475</u>	<u>60,651,790</u>	<u>(429,920,888)</u>	<u>(148,330,338)</u>	<u>(382,606,961)</u>
Net gain (or loss) during the year due to plan exper	\$ 226,263,826	\$ (107,692,351)	\$ (13,305,290)	\$ (94,134,221)	\$ 11,131,964
Adjustment for Late Reported Pays Change in liability due to the pay being loaded to	2,220,399	(11,745,499)	(190,537)	9,035,217	(680,420)
Special Events Changes due to special events (2019 - Change in Actuary)	-	-	<u>(69,747,583)</u>	-	<u>(69,747,583)</u>
Total gain (or loss) during the year	\$ 228,484,225	\$ (119,437,850)	\$ (83,243,410)	\$ (85,099,004)	\$ (59,296,039)



SECTION I – VALUATION RESULTS

TABLE 6

SCHEDULE OF FUNDING PROGRESS

Valuation as of Jan. 1	Valuation Assets	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL)	Ratio of Assets to AAL	Active Member Payroll	UAAL as a Percentage of Active Member Payroll
2021	\$ 16,112.1	\$ 22,628.6	\$ 6,516.5	71.2%	\$ 2,381.8	273.6%
2020	15,360.1	22,044.3	6,684.2	69.7%	2,313.6	288.9%
2019	14,753.2	21,264.7	6,511.5	69.4%	2,218.0	293.6%
2018	14,594.6	20,887.2	6,292.6	69.9%	2,209.3	284.8%
2017	14,162.5	20,290.4	6,127.9	69.8%	2,180.9	281.0%
2016	13,653.0	19,135.9	5,482.9	71.3%	2,060.9	266.1%
2015	13,029.3	18,395.6	5,366.3	70.8%	1,986.6	270.1%
2014	11,063.2	16,577.8	5,514.6	66.7%	1,942.3	283.9%
2013	10,278.0	16,007.9	5,729.9	64.2%	1,913.4	299.5%
2012	10,309.0	16,346.7	6,037.7	63.1%	1,897.4	318.2%

Note: Actuarial Assets and Liabilities prior to Jan. 1, 2015 are net of DROP balances.

Note: The amounts reported in this schedule do not include assets or liabilities for post-employment health care benefits.



SECTION I – VALUATION RESULTS

TABLE 7

UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
FUNDING PERIOD AS OF JANUARY 1, 2021

Plan Year	UAAL as of January 1, Plan Year (a)	Assumed Amortization Contribution Rate ¹ (b)	Projected Payroll ² (c)	Mid-Year Amortization Contribution Amount ³ (d)	UAAL as of December 31, UAAL ⁴ (e)	Year
2021	\$6,516,454,453	17.71%	\$2,493,009,886	\$441,512,051	\$6,578,938,027	1
2022	6,578,938,027	17.76%	2,574,032,707	457,148,763	6,630,170,138	2
2023	6,630,170,138	17.79%	2,657,688,770	472,929,992	6,669,100,484	3
2024	6,669,100,484	17.82%	2,744,063,655	489,095,741	6,694,345,318	4
2025	6,694,345,318	17.85%	2,833,245,724	505,733,147	6,704,319,640	5
2026	6,704,319,640	17.87%	2,925,326,210	522,788,986	6,697,366,960	6
2027	6,697,366,960	17.89%	3,020,399,312	540,285,121	6,671,675,549	7
2028	6,671,675,549	17.90%	3,118,562,290	558,268,853	6,625,239,583	8
2029	6,625,239,583	17.92%	3,219,915,564	576,872,979	6,555,754,765	9
2030	6,555,754,765	17.93%	3,324,562,820	595,986,253	6,460,848,064	10
2031	6,460,848,064	17.94%	3,432,611,112	615,655,764	6,337,907,672	11
2032	6,337,907,672	17.94%	3,544,170,973	635,892,484	6,184,101,432	12
2033	6,184,101,432	17.94%	3,659,356,529	656,582,349	5,996,489,154	13
2034	5,996,489,154	17.94%	3,778,285,616	677,690,070	5,771,932,106	14
2035	5,771,932,106	17.93%	3,901,079,899	699,449,133	5,506,797,813	15
2036	5,506,797,813	17.92%	4,027,864,996	721,981,156	5,197,036,812	16
2037	5,197,036,812	17.92%	4,158,770,608	745,326,517	4,838,233,719	17
2038	4,838,233,719	17.92%	4,293,930,653	769,427,080	4,425,680,340	18
2039	4,425,680,340	17.92%	4,433,483,399	794,361,234	3,954,210,358	19
2040	3,954,210,358	17.92%	4,577,571,609	820,082,181	3,418,292,784	20
2041	3,418,292,784	17.91%	4,726,342,687	846,586,837	2,811,957,358	21
2042	2,811,957,358	17.91%	4,879,948,824	873,911,255	2,128,718,730	22
2043	2,128,718,730	17.91%	5,038,547,161	902,203,750	1,361,418,588	23
2044	1,361,418,588	17.91%	5,202,299,944	931,549,014	502,237,941	24
2045	502,237,941	17.91%	5,371,374,692	961,862,782	-	25
2046	-	17.91%	5,545,944,369	993,137,269	-	26
2047	-	17.91%	5,726,187,561	1,025,410,419	-	27
2048	-	17.90%	5,912,288,657	1,058,479,856	-	28
2049	-	17.90%	6,104,438,038	1,092,458,863	-	29
2050	-	17.89%	6,302,832,275	1,127,474,761	-	30

Funding Period is 25 years because the UAAL is first projected to be zero as of December 31 of year 25.

¹ The amortization contribution rate is the total statutory contribution rate, minus the total normal cost rate, minus the health care contribution rate. The statutory contribution rate is assumed to remain unchanged except for any legislated increases, for which none are assumed after the July 1, 2015 member contribution rate increase. The impact of SB 340 and changes adopted by OP&F that will impact new members will reduce the total normal cost rate over time, and, thus, increase the amortization contribution rate, as reflected above.

² Based on 3.25% payroll growth assumption

³ The contribution amount is the product of (b) the amortization contribution rate and (c) the assumed payroll amount.

⁴ The outstanding balance at the end of the year is derived from the outstanding balance at the beginning of the year with interest minus the mid-year amortization contribution with interest. (e) = [(a) x 1.08] - [(d) x 1.08^{0.5}]



SECTION I – VALUATION RESULTS

TABLE 8

SOLVENCY TEST – COMPARATIVE SUMMARY OF ACTUARIAL ACCRUED LIABILITY AND ACTUARIAL VALUE OF ASSETS

POLICE

Valuation as of January 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2021	1,703,012	\$7,687,534	\$3,015,833	\$8,833,660	100%	93%	0%
2020	1,650,362	7,361,618	3,077,379	8,423,682	100%	92%	0%
2019	1,584,057	7,107,922	2,987,107	8,102,788	100%	92%	0%
2018	1,515,993	6,870,423	3,138,109	8,052,548	100%	95%	0%
2017	1,451,473	6,576,192	3,184,383	7,825,895	100%	97%	0%
2016	1,386,649	6,085,896	3,002,889	7,473,979	100%	100%	0%
2015	1,210,400	5,857,146	3,015,390	7,141,575	100%	100%	2%
2014	1,171,496	5,368,637	2,583,711	6,088,816	100%	92%	0%
2013	1,131,664	5,166,808	2,532,580	5,670,069	100%	88%	0%
2012	1,100,146	4,960,051	2,969,900	5,694,783	100%	93%	0%

FIREFIIGHTERS

Valuation as of January 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2021	1,552,817	\$5,881,373	\$2,788,022	\$7,278,477	100%	97%	0%
2020	1,489,023	5,589,542	2,876,359	6,936,441	100%	97%	0%
2019	1,423,619	5,373,749	2,788,255	6,650,372	100%	97%	0%
2018	1,345,237	5,150,080	2,867,386	6,542,014	100%	100%	2%
2017	1,276,582	4,922,990	2,878,774	6,336,593	100%	100%	5%
2016	1,213,330	4,614,250	2,832,862	6,179,025	100%	100%	12%
2015	1,062,097	4,337,819	2,912,741	5,887,716	100%	100%	17%
2014	1,028,465	3,924,388	2,501,058	4,974,383	100%	100%	1%
2013	974,362	3,751,279	2,451,195	4,607,962	100%	97%	0%
2012	965,598	3,581,800	2,769,204	4,614,176	100%	100%	2%

TOTAL

Valuation as of January 1	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2021	3,255,829	\$13,568,907	\$5,803,855	\$16,112,137	100%	95%	0%
2020	3,139,385	12,951,161	5,953,738	15,360,123	100%	94%	0%
2019	3,007,676	12,481,671	5,775,362	14,753,160	100%	94%	0%
2018	2,861,230	12,020,503	6,005,495	14,594,562	100%	98%	0%
2017	2,728,055	11,499,182	6,063,157	14,162,488	100%	99%	0%
2016	2,599,979	10,700,146	5,835,751	13,653,004	100%	100%	6%
2015	2,272,497	10,194,965	5,928,131	13,029,291	100%	100%	9%
2014	2,199,961	9,293,025	5,084,769	11,063,199	100%	95%	0%
2013	2,106,026	8,918,087	4,983,775	10,278,031	100%	92%	0%
2012	2,065,744	8,541,851	5,739,104	10,308,959	100%	97%	0%

Note: Actuarial Assets and Liabilities prior to Jan. 1, 2015 are net of DROP balances



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 9

SUMMARY OF MEMBERSHIP DATA AS OF JANUARY 1, 2021

POLICE

Item	Male	Female	Total
Number of Members	13,778	1,683	15,461
Annual Salaries	\$ 1,126,948,713	\$ 130,075,646	\$ 1,257,024,359
Average Annual Salary	\$ 81,793	\$ 77,288	\$ 81,303
Average Age	41.6	39.6	41.4
Average Service	14.2	11.9	14.0

FIREFIIGHTERS

Item	Male	Female	Total
Number of Members	13,244	433	13,677
Annual Salaries	\$ 1,123,681,957	\$ 33,831,105	\$ 1,157,513,062
Average Annual Salary	\$ 84,845	\$ 78,132	\$ 84,632
Average Age	42.3	38.8	42.2
Average Service	14.7	10.2	14.5

TOTAL

Item	Male	Female	Total
Number of Members	27,022	2,116	29,138
Annual Salaries	\$ 2,250,630,670	\$ 163,906,750	\$ 2,414,537,420
Average Annual Salary	\$ 83,289	\$ 77,461	\$ 82,866
Average Age	41.9	39.5	41.8
Average Service	14.4	11.6	14.2



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 9

SUMMARY OF MEMBERSHIP DATA AS OF JANUARY 1, 2021
(continued)

POLICE

Item	Male	Female	Total
Eligible for Allowances	154	13	167
Eligible for Refunds Only	<u>2,641</u>	<u>446</u>	<u>3,087</u>
Total	2,795	459	3,254

FIREFIGHTERS

Item	Male	Female	Total
Eligible for Allowances	93	7	100
Eligible for Refunds Only	<u>726</u>	<u>76</u>	<u>802</u>
Total	819	83	902

TOTAL

Item	Male	Female	Total
Eligible for Allowances	247	20	267
Eligible for Refunds Only	<u>3,367</u>	<u>522</u>	<u>3,889</u>
Total	3,614	542	4,156

**SECTION II – SUMMARY OF MEMBERSHIP DATA****TABLE 9****SUMMARY OF MEMBERSHIP DATA AS OF JANUARY 1, 2021
(continued)****POLICE**

Item	Number	Annual Allowance	Average Allowance	Average Age
Service Retirees	9,270	\$ 475,893,576	\$ 51,337	68.3
Survivors and Beneficiaries	4,624	54,045,222	11,688	71.7
Disability Retirees	<u>3,515</u>	<u>147,518,387</u>	<u>41,968</u>	<u>64.7</u>
Total	17,409	\$ 677,457,185	\$ 38,914	68.5

FIREFIIGHTERS

Item	Number	Annual Allowance	Average Allowance	Average Age
Service Retirees	7,162	\$ 371,203,477	\$ 51,830	69.0
Survivors and Beneficiaries	3,352	39,169,459	11,685	74.0
Disability Retirees	<u>2,449</u>	<u>111,458,406</u>	<u>45,512</u>	<u>66.5</u>
Total	12,963	\$ 521,831,343	\$ 40,255	69.8

TOTAL

Item	Number	Annual Allowance	Average Allowance	Average Age
Service Retirees	16,432	\$ 847,097,053	\$ 51,552	68.6
Survivors and Beneficiaries	7,976	93,214,681	11,687	72.7
Disability Retirees	<u>5,964</u>	<u>258,976,793</u>	<u>43,423</u>	<u>65.4</u>
Total	30,372	\$ 1,199,288,527	\$ 39,487	69.1



SECTION II – SUMMARY OF MEMBERSHIP DATA

**TABLE 10
ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
POLICE**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	
Under 25	633	1	-	-	-	-	-	-	-	634
	\$55,219	\$70,082	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$55,243
25-29	1,765	271	-	-	-	-	-	-	-	2,036
	\$63,125	\$75,825	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$64,815
30-34	1,058	1,174	120	-	-	-	-	-	-	2,352
	\$62,984	\$80,110	\$91,142	\$0	\$0	\$0	\$0	\$0	\$0	\$72,969
35-39	410	739	806	172	1	-	-	-	-	2,128
	\$64,234	\$79,513	\$87,302	\$94,480	\$108,398	\$0	\$0	\$0	\$0	\$80,743
40-44	132	272	490	729	281	2	-	-	-	1,906
	\$55,443	\$76,672	\$84,953	\$91,807	\$94,872	\$91,834	\$0	\$0	\$0	\$85,819
45-49	90	102	242	507	1,142	379	5	-	-	2,467
	\$57,709	\$73,030	\$82,395	\$87,208	\$93,170	\$99,700	\$87,405	\$0	\$0	\$89,753
50-54	29	45	108	245	680	1,080	351	7	2	2,547
	\$56,250	\$67,624	\$80,278	\$83,525	\$90,132	\$96,061	\$100,961	\$104,326	\$91,549	\$92,342
55-59	14	9	29	79	175	336	406	24	-	1,072
	\$54,544	\$77,236	\$74,122	\$83,743	\$87,047	\$91,828	\$99,054	\$107,739	\$0	\$92,456
60-64	5	8	9	20	38	90	82	14	2	268
	\$51,141	\$57,897	\$78,380	\$74,295	\$81,378	\$83,251	\$92,426	\$109,262	\$103,388	\$85,114
Over 64	-	2	4	5	9	16	7	3	5	51
	\$0	\$74,056	\$60,375	\$88,392	\$87,580	\$84,848	\$101,637	\$76,335	\$113,276	\$87,926
TOTAL	4,136	2,623	1,808	1,757	2,326	1,903	851	48	9	15,461
	\$61,534	\$78,567	\$85,529	\$89,015	\$91,819	\$95,334	\$99,154	\$105,723	\$106,251	\$81,303

Note: Excludes rehired retirees.



SECTION II – SUMMARY OF MEMBERSHIP DATA

**TABLE I0
ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
FIREFIGHTERS'**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	
Under 25	497	1	-	-	-	-	-	-	-	498
	\$58,684	\$65,452	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$58,698
25-29	1,167	236	-	-	-	-	-	-	-	1,403
	\$65,021	\$79,401	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$67,440
30-34	946	879	173	-	-	-	-	-	-	1,998
	\$68,051	\$79,745	\$86,774	\$0	\$0	\$0	\$0	\$0	\$0	\$74,817
35-39	458	702	712	194	2	-	-	-	-	2,068
	\$66,301	\$81,555	\$87,234	\$93,723	\$87,179	\$0	\$0	\$0	\$0	\$81,279
40-44	175	312	474	667	351	-	-	-	-	1,979
	\$65,294	\$81,387	\$86,600	\$92,148	\$96,665	\$0	\$0	\$0	\$0	\$87,549
45-49	59	67	177	502	1,011	243	6	-	-	2,065
	\$63,900	\$83,924	\$87,332	\$88,559	\$97,075	\$101,033	\$95,836	\$0	\$0	\$93,257
50-54	22	26	63	232	678	700	308	3	-	2,032
	\$70,825	\$90,981	\$84,580	\$88,368	\$94,647	\$100,256	\$101,467	\$98,945	\$0	\$96,285
55-59	11	14	30	75	241	438	407	33	-	1,249
	\$69,308	\$75,483	\$81,746	\$85,490	\$94,217	\$94,840	\$99,523	\$108,744	\$0	\$95,295
60-64	1	2	7	19	71	109	112	14	3	338
	\$50,350	\$77,950	\$71,171	\$80,506	\$92,111	\$93,659	\$96,391	\$95,968	\$118,876	\$93,132
Over 64	-	2	4	4	7	12	12	5	1	47
	\$0	\$49,770	\$71,665	\$81,516	\$89,987	\$95,865	\$82,253	\$105,435	\$96,592	\$87,305
TOTAL	3,336	2,241	1,640	1,693	2,361	1,502	845	55	4	13,677
	\$65,154	\$80,698	\$86,704	\$90,295	\$95,847	\$98,289	\$99,545	\$104,657	\$113,305	\$84,632

Note: Excludes rehired retirees.



SECTION II – SUMMARY OF MEMBERSHIP DATA

**TABLE 10
ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
TOTAL**

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Up	
Under 25	1,130	2	-	-	-	-	-	-	-	1,132
	\$56,743	\$67,767	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$56,763
25-29	2,932	507	-	-	-	-	-	-	-	3,439
	\$63,879	\$77,489	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$65,886
30-34	2,004	2,053	293	-	-	-	-	-	-	4,350
	\$65,376	\$79,953	\$88,563	\$0	\$0	\$0	\$0	\$0	\$0	\$73,818
35-39	868	1,441	1,518	366	3	-	-	-	-	4,196
	\$65,325	\$80,508	\$87,270	\$94,078	\$94,252	\$0	\$0	\$0	\$0	\$81,007
40-44	307	584	964	1,396	632	2	-	-	-	3,885
	\$61,058	\$79,191	\$85,763	\$91,970	\$95,868	\$91,834	\$0	\$0	\$0	\$86,700
45-49	149	169	419	1,009	2,153	622	11	-	-	4,532
	\$60,160	\$77,349	\$84,481	\$87,880	\$95,004	\$100,221	\$92,004	\$0	\$0	\$91,350
50-54	51	71	171	477	1,358	1,780	659	10	2	4,579
	\$62,537	\$76,177	\$81,863	\$85,880	\$92,386	\$97,711	\$101,198	\$102,711	\$91,549	\$94,092
55-59	25	23	59	154	416	774	813	57	-	2,321
	\$61,040	\$76,169	\$77,999	\$84,593	\$91,201	\$93,533	\$99,288	\$108,321	\$0	\$93,984
60-64	6	10	16	39	109	199	194	28	5	606
	\$51,010	\$61,908	\$75,226	\$77,321	\$88,369	\$88,952	\$94,715	\$102,615	\$112,681	\$89,586
Over 64	-	4	8	9	16	28	19	8	6	98
	\$0	\$61,913	\$66,020	\$85,336	\$88,633	\$89,570	\$89,394	\$94,523	\$110,495	\$87,628
TOTAL	7,472	4,864	3,448	3,450	4,687	3,405	1,696	103	13	29,138
	\$63,150	\$79,549	\$86,088	\$89,643	\$93,848	\$96,637	\$99,349	\$105,153	\$108,421	\$82,866

Note: Excludes rehired retirees.



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 11

**RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
POLICE**

Group	Number	Annual Allowances as of January 1, 2021		
		Basic	Cost-of-Living Increases	Total
Service Retirees				
Males	8,677	\$ 326,208,156	\$ 118,943,716	\$ 445,151,872
Females	<u>593</u>	<u>24,191,827</u>	<u>6,549,877</u>	<u>30,741,704</u>
Subtotal	9,270	\$ 350,399,983	\$ 125,493,593	\$ 475,893,576
Survivors and Beneficiaries				
Males	227	\$ 962,773	\$ 445,694	\$ 1,408,467
Females	<u>4,397</u>	<u>33,682,523</u>	<u>18,954,231</u>	<u>52,636,754</u>
Subtotal	4,624	\$ 34,645,296	\$ 19,399,926	\$ 54,045,222
Disability Retirees				
Males	3,000	\$ 89,433,894	\$ 37,080,057	\$ 126,513,951
Females	<u>515</u>	<u>15,389,849</u>	<u>5,614,586</u>	<u>21,004,435</u>
Subtotal	3,515	\$ 104,823,743	\$ 42,694,644	\$ 147,518,387
Grand Total	17,409	489,869,022	187,588,162	677,457,185



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 11

**RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
FIREFIGHTERS'**

Group	Number	Annual Allowances as of January 1, 2021		
		Basic	Cost-of-Living Increases	Total
Service Retirees				
Males	7,079	\$ 270,001,660	\$ 97,068,917	\$ 367,070,577
Females	<u>83</u>	<u>3,508,981</u>	<u>623,919</u>	<u>4,132,900</u>
Subtotal	7,162	\$ 273,510,642	\$ 97,692,836	\$ 371,203,477
Survivors and Beneficiaries				
Males	136	\$ 349,081	\$ 168,281	\$ 517,362
Females	<u>3,216</u>	<u>24,963,215</u>	<u>13,688,882</u>	<u>38,652,097</u>
Subtotal	3,352	\$ 25,312,297	\$ 13,857,162	\$ 39,169,459
Disability Retirees				
Males	2,333	\$ 77,162,290	\$ 29,409,985	\$ 106,572,275
Females	<u>116</u>	<u>3,966,195</u>	<u>919,935</u>	<u>4,886,131</u>
Subtotal	2,449	\$ 81,128,485	\$ 30,329,921	\$ 111,458,406
Grand Total	12,963	379,951,424	141,879,919	521,831,343



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 11

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
TOTAL

Group	Number	Annual Allowances as of January 1, 2021		
		Basic	Cost-of-Living Increases	Total
Service Retirees				
Males	15,756	\$ 596,209,816	\$ 216,012,633	\$ 812,222,449
Females	<u>676</u>	<u>27,700,809</u>	<u>7,173,796</u>	<u>34,874,604</u>
Subtotal	16,432	\$ 623,910,625	\$ 223,186,429	\$ 847,097,053
Survivors and Beneficiaries				
Males	363	\$ 1,311,854	\$ 613,975	\$ 1,925,829
Females	<u>7,613</u>	<u>58,645,738</u>	<u>32,643,113</u>	<u>91,288,851</u>
Subtotal	7,976	\$ 59,957,593	\$ 33,257,088	\$ 93,214,681
Disability Retirees				
Males	5,333	\$ 166,596,184	\$ 66,490,043	\$ 233,086,227
Females	<u>631</u>	<u>19,356,045</u>	<u>6,534,522</u>	<u>25,890,566</u>
Subtotal	5,964	\$ 185,952,229	\$ 73,024,564	\$ 258,976,793
Grand Total	30,372	869,820,446	329,468,081	1,199,288,527



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 12

**RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
POLICE**

Age Last Birthday	Number	Annual Allowance	Average Annual Allowance
Service Retirees			
Under 60	1,929	\$ 93,423,873	\$ 48,431
60-64	1,577	87,185,980	55,286
65-69	1,846	102,445,781	55,496
70-74	1,789	97,493,253	54,496
75-79	1,146	56,941,723	49,687
Over 79	<u>983</u>	<u>38,402,965</u>	<u>39,067</u>
Total	9,270	\$ 475,893,576	\$ 51,337
Survivors and Beneficiaries			
Under 60	740	\$ 7,506,945	\$ 10,145
60-64	347	4,883,970	14,075
65-69	544	7,104,175	13,059
70-74	763	9,556,666	12,525
75-79	709	8,409,392	11,861
Over 79	<u>1,521</u>	<u>16,584,074</u>	<u>10,903</u>
Total	4,624	\$ 54,045,222	\$ 11,688
Disability Retirees			
Under 60	1,239	\$ 50,225,424	\$ 40,537
60-64	484	22,774,825	47,055
65-69	581	26,369,394	45,386
70-74	597	25,551,366	42,800
75-79	354	13,941,613	39,383
Over 79	<u>260</u>	<u>8,655,766</u>	<u>33,291</u>
Total	3,515	\$ 147,518,387	\$ 41,968



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 12

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
FIREFIGHTERS'

Age Last Birthday	Number	Annual Allowance	Average Annual Allowance
Service Retirees			
Under 60	1,245	\$ 62,580,769	\$ 50,266
60-64	1,489	83,773,338	56,261
65-69	1,474	82,646,610	56,070
70-74	1,185	63,320,955	53,435
75-79	807	40,095,916	49,685
Over 79	962	38,785,890	40,318
Total	7,162	\$ 371,203,477	\$ 51,830
Survivors and Beneficiaries			
Under 60	493	\$ 5,320,885	\$ 10,793
60-64	198	2,874,965	14,520
65-69	280	3,836,847	13,703
70-74	426	5,367,400	12,600
75-79	490	5,716,510	11,666
Over 79	1,465	16,052,852	10,958
Total	3,352	\$ 39,169,459	\$ 11,685
Disability Retirees			
Under 60	689	\$ 31,127,809	\$ 45,178
60-64	373	17,974,094	48,188
65-69	421	20,519,002	48,739
70-74	430	20,396,542	47,434
75-79	286	12,151,901	42,489
Over 79	250	9,289,059	37,156
Total	2,449	\$ 111,458,406	\$ 45,512



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 12

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
TOTAL

Age Last Birthday	Number	Annual Allowance	Average Annual Allowance
Service Retirees			
Under 60	3,174	\$ 156,004,642	\$ 49,151
60-64	3,066	170,959,318	55,760
65-69	3,320	185,092,391	55,751
70-74	2,974	160,814,208	54,073
75-79	1,953	97,037,639	49,686
Over 79	<u>1,945</u>	<u>77,188,855</u>	<u>39,686</u>
Total	16,432	\$ 847,097,053	\$ 51,552
Survivors and Beneficiaries			
Under 60	1,233	\$ 12,827,830	\$ 10,404
60-64	545	7,758,934	14,237
65-69	824	10,941,022	13,278
70-74	1,189	14,924,066	12,552
75-79	1,199	14,125,903	11,781
Over 79	<u>2,986</u>	<u>32,636,926</u>	<u>10,930</u>
Total	7,976	\$ 93,214,681	\$ 11,687
Disability Retirees			
Under 60	1,928	\$ 81,353,232	\$ 42,196
60-64	857	40,748,919	47,548
65-69	1,002	46,888,396	46,795
70-74	1,027	45,947,908	44,740
75-79	640	26,093,513	40,771
Over 79	<u>510</u>	<u>17,944,824</u>	<u>35,186</u>
Total	5,964	\$ 258,976,793	\$ 43,423



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 13

10 YEAR HISTORY OF MEMBERSHIP DATA
ACTIVE MEMBERS

Valuation as of Jan. 1,	Number of Members*	Percentage Change in Membership	Valuation Membership Payroll	Percentage Change in Payroll**
2021	29,138	(0.69%)	\$ 2,414,537	2.07%
2020	29,340	1.51%	2,365,612	4.28%
2019	28,904	1.75%	2,268,611	3.82%
2018	28,408	0.83%	2,185,127	1.46%
2017	28,175	1.99%	2,153,765	4.51%
2016	27,624	(0.52%)	2,060,851	3.74%
2015	27,769	0.59%	1,986,569	2.28%
2014	27,605	0.59%	1,942,269	1.51%
2013	27,444	(0.65%)	1,913,383	0.84%
2012	27,623		1,897,413	

* Includes rehired retirees

** Increase for 2019 and 2020 includes assumed increases for late reported salaries of 1.170% and 1.137% respectively



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 13

10 YEAR HISTORY OF MEMBERSHIP DATA
RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS

Year Ended Dec. 31,	Added to Rolls		Removed from Rolls		Number on Rolls End of Year	Annual Allowances	Percentage Change in Allowances	Average Annual Allowances	Percentage Change in Membership
	Number	Annual Allowances	Number	Annual Allowances					
2020	1,550	\$ 79,764	1,169	\$ 31,201	30,372	\$ 1,199,289	4.22%	\$ 39.49	1.27%
2019	1,552	73,909	1,127	29,045	29,991	1,150,725	4.06%	38.37	1.44%
2018	1,292	66,129	1,087	28,036	29,566	1,105,862	3.57%	37.40	0.70%
2017	1,458	50,476	1,010	24,321	29,361	1,067,769	4.53%	36.37	1.55%
2016	1,401	47,436	890	21,186	28,913	1,021,509	4.67%	35.33	1.80%
2015	1,450	48,864	1,011	22,141	28,402	975,929	4.81%	34.36	1.57%
2014	1,261	41,378	859	17,204	27,963	931,176	4.59%	33.30	1.46%
2013	1,362	44,842	1,044	23,851	27,561	890,288	4.42%	32.30	1.17%
2012	1,390	48,249	1,225	19,469	27,243	852,602	5.58%	31.30	0.61%
2011	1,783	65,572	779	16,397	27,078	807,550	8.52%	29.82	3.85%



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 14

RECONCILIATION OF MEMBERSHIP DATA FROM
JANUARY 1, 2020 TO JANUARY 1, 2021
POLICE

	Active Members	Former Members	Rehired Retirees	Disables	Service Retirees	Beneficiaries	Total
As of January 1, 2020	15,688	151	152	3,582	8,843	4,592	33,008
Changes in Status							
a) Retirements	(504)	(11)	(2)	-	517	-	-
b) Disabilities	(41)	(2)	-	43	-	-	-
c) Death With Beneficiary	(9)	-	-	(59)	(134)	295	93
d) Death Without Beneficiary	(11)	-	(3)	(55)	(116)	(238)	(423)
e) Non-Vested Termination	(238)	-	-	-	-	-	(238)
f) Vested Termination	(31)	31	-	-	-	-	-
g) Rehired Retirees	(10)	-	10	-	-	-	-
h) Return to Work	30	(4)	-	-	-	-	26
i) Cessation of Benefits/Cash-out	(214)	(5)	(6)	-	-	(25)	(250)
j) Data Corrections	28	7	8	4	1	-	48
Total Changes in Status	(1,000)	16	7	(67)	268	32	(744)
New Entrants During the Year	773	-	-	-	-	-	773
Net Change	(227)	16	7	(67)	268	32	29
As of January 1, 2021	15,461	167	159	3,515	9,111	4,624	33,037



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABLE 14

RECONCILIATION OF MEMBERSHIP DATA FROM
JANUARY 1, 2020 TO JANUARY 1, 2021
FIREFIGHTERS'

	Active Members	Former Members	Rehired Retirees	Disables	Service Retirees	Beneficiaries	Total
As of January 1, 2020	13,652	83	59	2,480	6,889	3,394	26,557
Changes in Status							
a) Retirements	(410)	(12)	-	-	422	-	-
b) Disabilities	(30)	-	-	30	-	-	-
c) Death With Beneficiary	(6)	-	-	(34)	(117)	207	50
d) Death Without Beneficiary	(7)	-	-	(33)	(95)	(230)	(365)
e) Non-Vested Termination	(67)	-	-	-	-	-	(67)
f) Vested Termination	(25)	25	-	-	-	-	-
g) Rehired Retirees	(7)	-	7	-	-	-	-
h) Return to Work	26	-	-	-	-	-	26
i) Cessation of Benefits/Cash-out	(57)	(1)	-	-	-	(16)	(74)
j) Data Corrections	1	5	-	6	(3)	(3)	6
Total Changes in Status	(582)	17	7	(31)	207	(42)	(424)
New Entrants During the Year	607	-	-	-	-	-	607
Net Change	25	17	7	(31)	207	(42)	183
As of January 1, 2021	13,677	100	66	2,449	7,096	3,352	26,740



SECTION II – SUMMARY OF MEMBERSHIP DATA

TABEL 14

RECONCILIATION OF MEMBERSHIP DATA FROM
JANUARY 1, 2020 TO JANUARY 1, 2021
TOTAL

	Active Members	Former Members	Rehired Retirees	Disables	Service Retirees	Beneficiaries	Total
As of January 1, 2020	29,340	234	211	6,062	15,732	7,986	59,565
Changes in Status							
a) Retirements	(914)	(23)	(2)	-	939	-	-
b) Disabilities	(71)	(2)	-	73	-	-	-
c) Death With Beneficiary	(15)	-	-	(93)	(251)	502	143
d) Death Without Beneficiary	(18)	-	(3)	(88)	(211)	(468)	(788)
e) Non-Vested Termination	(305)	-	-	-	-	-	(305)
f) Vested Termination	(56)	56	-	-	-	-	-
g) Rehired Retirees	(17)	-	17	-	-	-	-
h) Return to Work	56	(4)	-	-	-	-	52
i) Cessation of Benefits/Cash-out	(271)	(6)	(6)	-	-	(41)	(324)
j) Data Corrections	29	12	8	10	(2)	(3)	54
Total Changes in Status	(1,582)	33	14	(98)	475	(10)	(1,168)
New Entrants During the Year	1,380	-	-	-	-	-	1,380
Net Change	(202)	33	14	(98)	475	(10)	212
As of January 1, 2021	29,138	267	225	5,964	16,207	7,976	59,777



RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In November, 2018, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, is first applicable for the January 1, 2019 actuarial valuation for OP&F.

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become “pay as you go”. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk is translated into uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – good or bad – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year.



SECTION III – RISK CONSIDERATIONS

RISK CONSIDERATIONS

In an actuarially funded plan, the most significant risk factor is investment return because of the volatility of returns and the size of plan assets compared to payroll (see Exhibit I). A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is an expected result given the underlying capital market assumptions and the plan's asset allocation.

The following exhibits summarize some historical information that helps indicate how certain key risk metrics have changed over time.



TABLE 15

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the Fund is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the Fund. The higher this ratio, the more sensitive a plan’s contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio
January 1, 2012	\$ 10,976,214,161	\$ 1,897,413,344	5.78
January 1, 2013	11,840,698,340	1,913,382,667	6.19
January 1, 2014	13,166,077,870	1,942,269,436	6.78
January 1, 2015	13,453,447,836	1,986,568,535	6.77
January 1, 2016	12,923,943,156	2,060,850,584	6.27
January 1, 2017	13,682,389,240	2,144,265,467	6.38
January 1, 2018	14,963,614,004	2,174,667,031	6.88
January 1, 2019	13,941,056,807	2,268,610,714	6.15
January 1, 2020	15,636,590,807	2,365,611,876	6.61
January 1, 2021	16,411,125,257	2,414,537,420	6.80

The assets on January 1, 2021 are 680% of payroll so underperforming the investment return assumption by 1% (i.e., earn 7.00% for one year) is equivalent to 6.80% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAL, this illustrates the risk associated with volatile investment returns.



SECTION III – RISK CONSIDERATIONS

TABLE 16

HISTORICAL CASH FLOWS

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments. If the Fund has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. While any negative cash flow will produce such a result, it is typically a negative cash flow of more than 5% of MVA that causes significant concerns.

Year Ended	Market Value of Assets	Contributions	Benefit Payments	Net Cash Flow	Net Cash Flow as a Percent of MVA
December 31, 2011	\$ 10,976,214,161	\$ 455,627,168	\$(1,049,873,474)	\$ (594,246,306)	-5.41%
December 31, 2012	11,840,698,340	464,867,162	(1,075,411,270)	(610,544,108)	-5.16%
December 31, 2013	13,166,077,870	537,635,922	(1,110,987,128)	(573,351,206)	-4.35%
December 31, 2014	14,757,658,620	642,482,523	(1,126,154,321)	(483,671,798)	-3.28%
December 31, 2015	14,286,812,448	674,807,572	(1,170,476,866)	(495,669,294)	-3.47%
December 31, 2016	13,682,389,240	723,737,827	(1,187,020,466)	(463,282,639)	-3.39%
December 31, 2017	14,963,614,004	744,400,996	(1,256,254,446)	(511,853,450)	-3.42%
December 31, 2018	13,941,056,807	774,068,159	(1,314,608,496)	(540,540,337)	-3.88%
December 31, 2019	15,636,590,807	805,717,452	(1,394,027,927)	(588,310,475)	-3.76%
December 31, 2020	16,411,125,257	831,059,129	(1,400,413,884)	(569,354,755)	-3.47%



TABLE 17

LIABILITY MATURITY MEASUREMENTS

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations indicated by an increasing ratio of retirees to active members and a growing percentage of retiree liability. The retirement of the remaining baby boomers over the next decade is expected to further exacerbate the aging of the retirement system population. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the Fund since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs.

Projections provide the most effective way of analyzing the impact of these changes on future funding measures but studying several key metrics from the valuation can also provide some valuable insight.

Valuation Date	Retiree Liability	Total Actuarial Liability	Retiree Percentage	Covered Payroll	Ratio
January 1, 2012	\$ 9,091,917,466	\$17,634,554,969	51.56%	\$ 1,897,413,344	9.29
January 1, 2013	9,435,779,283	17,245,751,991	54.71%	1,913,382,667	9.01
January 1, 2014	9,799,718,068	17,823,319,753	54.98%	1,942,269,436	9.18
January 1, 2015	10,194,964,890	18,395,592,476	55.42%	1,986,568,535	9.26
January 1, 2016	10,700,145,394	19,135,875,916	55.92%	2,060,850,584	9.29
January 1, 2017	11,499,181,496	20,290,393,633	56.67%	2,144,265,467	9.46
January 1, 2018	12,020,502,851	20,887,227,279	57.55%	2,174,667,031	9.60
January 1, 2019	12,481,671,003	21,264,708,173	58.70%	2,268,610,714	9.37
January 1, 2020	12,951,160,675	22,044,283,396	58.75%	2,365,611,876	9.32
January 1, 2021	13,568,906,986	22,628,591,064	59.96%	2,414,537,420	9.37



APPENDIX A

SUMMARY OF MAIN BENEFIT PROVISIONS

The following is intended to summarize the key provisions valued in this valuation. Members of OP&F and other parties should not rely on this summary as a substitute for or legal interpretation of the laws and rules covering this retirement plan.

Membership

Membership in OP&F is mandatory under Ohio Law for all full-time police officers employed by Ohio municipalities and appointed under the required statutory provisions. Membership is also mandatory for all full-time firefighters employed by Ohio municipalities, townships, villages, joint fire districts or other political subdivisions. In order to become members of OP&F, full-time firefighters are required to satisfactorily complete, or have satisfactorily completed, a firefighter training course approved under former Section 3303.07, Section 4765.55 or conducted under Section 3737.33 of the ORC.

Eligibility for Membership

Full-time police officers or firefighters are eligible for membership in OP&F immediately upon commencement of employment as a full-time police officer or firefighter.

Contributions

Employer and member contributions are established by statute and both are due monthly. Employers of police officers pay 19.5 percent of salary; employers of firefighters pay 24 percent of salary. The member contribution rate equaled 12.25 percent in 2020.

Employer Contribution Rates – Percentage of Active Member Payroll:

Time Frame of Rates	Police	Fire
Jan 1, 1986 thru Present	19.50%	24.00%



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

Member Contribution Rates – Percentage of Active Member Payroll:

Time Frame of Rates	Police	Fire
July 2, 2015 and Thereafter	12.25%	12.25%

Benefits

Service Retirement

Upon attaining a qualifying age with sufficient years of service, a member of OP&F may retire and receive a lifetime monthly pension. OP&F offers four types of service retirement: normal, service commuted, age/service commuted and actuarially reduced. Each type has different eligibility guidelines and is calculated using the member’s average annual salary.

Since average annual salary is subject to certain statutory and administrative limitations, not all salary, earnings, or compensation may be used in the calculation. OP&F calculates allowable average annual salary as follows:

- For OP&F members with 15 or more years of service credit as of July 1, 2013, average annual salary is an average of the three years of highest allowable earnings, regardless of when in their career the highest years occurred.
- For OP&F members with less than 15 years of service credit as of July 1, 2013, average annual salary is an average of the five years of highest allowable earnings, regardless of when in their career the highest years occurred.
- A “salary benchmark” is established for members with 15 or more years of service credit as of July 1, 2013, under which certain increases are excluded from salary for the purpose of determining allowable average annual salary. This benchmarking does not apply to members with less than 15 years of service credit as of July 1, 2013.

Normal Service Retirement

Eligibility

For members hired into an OP&F-covered position after July 1, 2013, minimum retirement age is 52 with at least 25 years of service credit.

For members hired into an OP&F-covered position on or before July 1, 2013, minimum retirement age is 48 with 25 years of service credit.



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

Benefit

An annual pension equal to a percentage of the allowable average annual salary. The percentage equals 2.5 percent for each of the first 20 years of service, 2.0 percent for each of the next five years of service, and 1.5 percent for each year of service in excess of 25 years. The maximum pension of 72 percent of the allowable average annual salary is paid after 33 years of service.

Service Commuted Retirement

Eligibility

For members hired into an OP&F-covered position after July 1, 2013, the minimum retirement age is 52, they must have at least 15 years of service credit and 25 years have elapsed from the date of their full-time hire.

For members hired into an OP&F-covered position on or before July 1, 2013, the minimum retirement age is 48, they must have at least 15 years of service credit and 25 years have elapsed from the date of their full-time hire.

Benefit

An annual pension equal to 1.5 percent of the allowable average annual salary multiplied by the number of full years of service credit (up to 25 years of service credit).

Age/Service Commuted Retirement

Eligibility

Age 62, 15 years of service credit and still working as a full-time police officer or firefighter.

Benefit

An annual pension that uses the same formula as for the Normal Service Retirement benefit (up to 25 years of service credit).

Actuarially Reduced

Eligibility

For members hired into an OP&F-covered position after July 1, 2013, age 48 with 25 years of service.

Benefit

An annual pension reduced to the actuarial equivalent of the amount payable had the member retired at age 52.



Rights Upon Separation From Service

Deferred Pension

If a member meets the years of service credit required for any of the service retirement pensions but leaves service before attaining the minimum retirement age, a pension becomes payable upon attainment of the qualifying age and filing the appropriate paperwork with OP&F.

Refund of Employee Contributions

Upon separation from service, a member can receive the contributions that he or she made to the plan or the employee share of member contributions picked-up on the member's behalf by their employer. Employer contributions are not refundable.

Termination before Retirement with 25 Years of Service Credit

Benefit

Same as the Normal Service Retirement benefit, except benefit commences once the member reaches minimum retirement age.

- For members hired into an OP&F-covered position after July 1, 2013, minimum retirement age is 52.
- For members hired into an OP&F-covered position on or before July 1, 2013, minimum retirement age is 48.

Termination before Retirement with 15 Years of Service Credit

Benefit

Same as the Service Commuted Retirement, except benefit commences once the member reaches minimum retirement age and 25 years have elapsed from the date of full-time hire.

- For members hired into an OP&F-covered position after July 1, 2013, the minimum retirement age is 52.
- For members hired into an OP&F-covered position on or before July 1, 2013, the minimum retirement age is 48.



Termination Before Retirement With Less Than 15 Years of Service Credit

Benefit

A lump sum amount equal to the sum of the member's contributions to OP&F.

Deferred Retirement Option Plan

Eligibility

When a member is eligible for a normal service retirement they can enter DROP by delaying retirement and continuing to work as a full-time police officer or firefighter.

- For members hired into an OP&F-covered position after July 1, 2013, normal service retirement eligibility is age 52 with at least 25 years of service credit.
- For members hired into an OP&F-covered position on or before July 1, 2013, normal service retirement eligibility is age 48 with at least 25 years of service credit.

Benefit

DROP is a cost neutral benefit offered by OP&F. Upon the DROP effective date, the member's pension is calculated as if that were their date of retirement. While the member continues to work and draw their normal salary, the amount they would have received in retirement benefits accumulates tax-deferred at OP&F on their behalf, as well as a portion of their OP&F employee contributions and interest. Since the member's pension has already been calculated:

- The years of DROP service do not apply towards the member's normal service retirement.
- If a member earns a higher salary after their DROP effective date due to a raise, job promotion, etc., it will not be used to recalculate their pension and, therefore, will not result in that member receiving a higher pension upon retirement.

The DROP interest rate is set by administrative rule and is subject to change at any time. OP&F credits interest to all DROP balances each month at a rate equal to the 10-year United States (U.S.) Treasury Note Business Day Series, as published by the U.S. Department of the Treasury, with a cap of five percent and a floor of two and a half percent. This variable interest rate is compounded annually and adjusted quarterly to match the published 10-year U.S. Treasury Note rate for the last trading business day of the preceding quarter and is in effect for the subsequent quarter.



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

Members whose election to participate in DROP is effective after July 1, 2013 do not qualify for annual cost-of-living allowances (COLA) at any time during DROP. Members whose election to participate in DROP is effective on or before July 1, 2013 will continue to receive a cost-of-living allowance during DROP, but only when they reach 55 years of age and have been participating in DROP for at least one year. Those members whose enrollment date into DROP qualify them for a cost-of-living allowance during DROP will receive three percent of their base pension.

Member contributions are credited to their DROP account based on the number of years of DROP service. For those members whose election to participate in DROP is effective after July 1, 2013, OP&F applies contributions to DROP in the following manner:

Years of DROP Service	Percentage of Member Contributions
Years 1-3	50% of member's contributions
Years 4-5	75% of member's contributions
Years 6-8	100% of member's contributions

For this group of members, the minimum participation in DROP, without penalty, is five years and the maximum is eight.

- If a member terminates employment within the first five years of electing to participate in DROP, then the member forfeits all of their DROP interest. In addition to losing their accumulated interest, members who choose to terminate employment before completing their required participation period cannot withdraw any of the funds in their DROP account until the minimum participation period has expired. The only exception to this rule is if the member dies during the minimum participation period. The member's surviving spouse, designated beneficiary or estate, as applicable will receive the entire DROP account balance determined at the time of death.
- If a member chooses to continue working after eight years in DROP, the member forfeits all DROP benefits and receives the Normal Service Retirement benefit upon retirement, which will be calculated to include the service credit earned during the DROP participation period.



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

For those members whose election to participate in DROP was on or before July 1, 2013, member contributions are applied to DROP under the following schedule:

Years of DROP Service	Percentage of Member Contributions
Years 1-2	50% of member's contributions
Year 3	75% of member's contributions
Years 4-8	100% of member's contributions

For this group of members, the minimum participation in DROP, without penalty, is three years and the maximum is eight.

- If a member terminates employment within the first three years of electing to participate in DROP, then the member forfeits all of their DROP interest. In addition to losing their accumulated interest, members who choose to terminate employment before completing their required participation period cannot withdraw any of the funds in their DROP account until the minimum participation period has expired. The only exception to this rule is if the member dies during the minimum participation period. The member's surviving spouse, designated beneficiary or estate, as applicable will receive the entire DROP account balance determined at the time of death.
- If a member chooses to continue working after eight years in DROP, the member forfeits all DROP benefits and receives the Normal Service Retirement benefit upon retirement, which will be calculated to include the service credit earned during the DROP participation period.

All DROP members retiring before the eight-year max receive their Normal Service Retirement benefit determined at the time of DROP entry, with the COLA adjustment (if applicable) to their date of retirement when eligible. These members will also receive the DROP account balance as a lump sum or monthly distribution.

If a member dies while participating in DROP, the member's surviving spouse, designated beneficiary or estate will receive the entire DROP account balance determined at the time of death. Also, the member's surviving spouse or contingent dependent beneficiary will receive either the retirement allowance elected by the member at the time of DROP entry or a 50 percent joint and survivor annuity, whichever is greater. All other statutory death benefits will apply.



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

If the member becomes disabled while in DROP, and has not terminated employment, the member must choose either to receive a disability benefit or a service retirement with DROP. If the member chooses the disability benefit, the member forfeits all DROP benefits and receives the disability benefit, with service credit during the DROP period included.

Disability Benefits

Members who become unable to perform their official duties and whose earning capacities are impaired may qualify for disability benefits. Disability benefits are classified as either service-incurred (on-duty) or non-service-incurred (off-duty) and differ in eligibility requirements and benefit formulas. Annual medical evaluations are required for disability benefit recipients who would not have met the age and service requirements for a Normal Service Retirement, unless the Board of Trustee waives this requirement based upon an OP&F physician's certification that the disability is ongoing and further evaluation would not be cost effective. Annual earnings statements are also required to be submitted to OP&F.

Permanent and Total Disability (On-Duty)

Eligibility

No age or service requirement.

Benefit

An annual benefit equal to 72 percent of the allowable average annual salary.

Partial Disability (On-Duty)

Eligibility

No age or service requirement.

Benefit

If the member has less than 25 years of service credit an annual benefit fixed by the Board of Trustees to be a certain percent up to 60 percent of the allowable average annual salary. If the member has 25 or more years of service credit, the annual disability benefit is equal to the Normal Service Retirement amount.



Non-Service Incurred Disability (off-Duty)

Eligibility

Any age and at least five years of service credit.

Benefit

An annual amount is the percent awarded by the Board of Trustees and may not exceed 60 percent of the allowable average annual salary. Service over 25 years cannot be used in calculating an off-duty disability award.

Pre-Retirement Survivor Annuity

Eligibility

Upon death before retirement, but after having satisfied the requirements for a Normal Service Retirement or an Age/Service Commuted retirement.

Benefit

The surviving spouse or contingent dependent beneficiary will receive the equivalent of a 50 percent joint and survivor annuity, calculated under the assumption that the decedent had retired effective the day following his/her death.

Statutory Survivor Benefits

Eligibility

Upon death of any active or retired member of OP&F.

Benefit

- Surviving Spouse's Benefit

An annual amount equal to \$6,600 (\$550 monthly), plus an annual COLA of three percent of the original base benefit, paid each July 1, beginning July 1, 2000. The benefit is paid to the surviving spouse for life.

- Surviving Child's Benefit

An annual amount equal to \$1,800 (\$150 monthly), payable until such child attains age 22 or marries, whichever occurs first. A dependent disabled child, regardless of age at



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

time of member’s death, is entitled to a benefit until death or recovery from disability. A COLA of three percent of the original base is payable each July 1.

- **Dependent Parents’ Benefit**

If there is no surviving spouse or dependent children, an annual amount of \$2,400 (\$200 monthly) is payable to one dependent parent or \$1,200 (\$100 monthly) each to two dependent parents for life or until dependency ceases or remarriage. A COLA of three percent of the original base is payable each July 1.

Survivor	Monthly Benefit	Causes of Termination
Widow/Widower	current amount + future COLA	*Death
Child	current amount + future COLA	*Death *Marriage *Attainment of age 22
Dependent disabled child	current amount + future COLA	*Death *Recovery from disability
One dependent parent	current amount + future COLA	*Death *Re-marriage
Two dependent parents	1/2 current amount (each) + future COLA	*Termination of dependency



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

Benefit Type	Base Monthly Benefit Amount	Base Monthly Benefit	
		Amount Plus Increases Through July 1, 2021	Monthly Increases Effective July 1, 2022
Spouse	\$550	\$908.60 *	\$16.50
Child	150	247.80 **	4.50
One Parent	200	330.40 ***	6.00
Two Parents	100	165.20	3.00

- * On July 1, 2000 the Statutory Surviving Spouse Benefit increased by \$12.10 per month. This increase was a percentage of the original benefit amount, equaling the percentage increase in the CPI plus unused prior increases, to a maximum of three percent. Every year after 2000, the monthly increase was \$16.50 or three percent of the base benefit.
- ** On July 1, 2000 the Statutory Child Benefit increased by \$3.30 per month. This increase was a percentage of the original benefit amount, equaling the percentage increase in the CPI plus unused prior increases, to a maximum of three percent. Every year after 2000, the monthly increase was \$4.50 or three percent of base benefit.
- *** On July 1, 2000 the Statutory Surviving One Parent Benefit increased by \$4.40 per month. This increase was a percentage of the original benefit amount, equaling the percentage increase in the CPI plus unused prior increases, to a maximum of three percent. Every year after 2000, the monthly increase was \$6.00 or three percent of base benefit.

Lump Sum Death Benefit

Eligibility

Upon death of any retired or disabled member of OP&F.

Benefit

A lump sum payment of \$1,000 is paid to the member’s surviving spouse or, if no surviving spouse, to a designated beneficiary. If there is no surviving spouse or beneficiary, then it is paid to the member’s estate.



State of Ohio Public Safety Officers Death Benefit Fund (DBF)

Benefit

The Death Benefit Fund is funded by the State of Ohio and provides special benefits to eligible survivors of public safety officers who are killed in the line of duty or who die from injuries or disease incurred in the performance of official duties. These eligible survivors are entitled to receive the member's full monthly salary received by the public safety officer prior to his or her death in the line of duty, plus any increases in salary that would have been granted to the deceased public safety officer. The benefit is paid to the public safety officer's eligible survivors as a group until the public safety officer's maximum pension eligibility date. This is the date on which the deceased public safety officer would have become eligible for the maximum annual retirement allowance or pension that may be paid to a member from the member's retirement system (OP&F, OPERS, SHPRS or the Cincinnati Retirement System) had the member continued to accrue service credit from that system, which will be reduced at the member's maximum pension eligibility date. These death benefit payments are in addition to the statutory survivor benefit and any optional payment plan benefits elected by the member.



Annuities

Effective Feb. 28, 1980, for those members who are retiring on either a service pension or a disability benefit, optional annuity plans can be chosen, subject to certain limitations. The member can elect actuarially reduced benefits under a joint and survivor annuity, life annuity certain and continuous, or multiple beneficiary annuity plan. The optional annuity plans allow the member's beneficiary(ies) to receive a lifetime payment upon the member's death.

Annuity Types

Single Life Annuity

For unmarried members, this is the standard annuity plan. Married members may elect this plan only if the spouse consents to the selection in writing. This plan pays the maximum retirement allowance that the member is entitled to receive and, upon the member's death, none of the pension or benefit is continued to any beneficiary.

Joint and Survivor Annuity (JSA)

Under this plan, a member designates that, upon his or her death, a certain percentage of the member's actuarially reduced benefit is continued to a surviving designated beneficiary for life.

Any percentage between one percent and 100 percent of the member's reduced pension may be continued to the surviving designated beneficiary, but the percent continued may be limited based on the beneficiary's age. If a member is married at the time benefits are elected, the standard plan is a 50 percent JSA continuing one-half of the member's reduced monthly benefit to his or her surviving spouse. If the member wants to select a plan which provides for the continuation of benefits for someone other than the spouse or less than 50 percent JSA to the spouse, the spouse must consent in writing to this choice. This plan automatically terminates upon death of the beneficiary, to be effective the month following OP&F's receipt of notice of death. Also, this plan may be cancelled upon divorce or dissolution of marriage with the consent of the member's spouse or a specific court order, at which point the annuity reverts to the single life annuity to the member. An elected option may be cancelled within one year after benefits commence, with the consent of the beneficiary.



Multiple Beneficiary Annuity

Under the multiple beneficiary annuity plan, a member may designate up to four beneficiaries at the time of retirement so that, upon death, a certain percentage of the member's actuarially reduced benefit is continued to the surviving beneficiaries for their lives. If the member is married at the time of retirement, the spouse must consent in writing for an annuity selection that provides for less than 50 percent JSA payable to the spouse.

Life Annuity Certain and Continuous (LACC)

This plan provides a lifetime allowance to the member and will only be paid to a designated beneficiary if the member dies and the period elected by the member has not expired. The minimum guarantee period is five years and the maximum is 20 years. 100 percent of the member's reduced pension continues to the beneficiary for the guarantee period selected. An elected option may be cancelled within one-year after benefits commence, with the consent of the beneficiary. If the member is married at the time of retirement, the spouse must consent in writing for an annuity selection that provides for less than a 50 percent JSA payable to the spouse.

Tiered Retirement Plan – COLA or Terminal Pay (Non-COLA)

Members retiring on or after July 24, 1986, who had 15 or more years of service credit as of January 1, 1989, are eligible to select between two different pension calculation plans. Under the terminal pay method, a member's monthly pension benefit is calculated using terminal payouts at the time of retirement such as accrued sick leave and vacation compensation to increase the amount of the average annual salary, but subject to certain limitations, and these members are not eligible to receive cost-of-living allowance adjustments. Under the COLA method, terminal payments are not included in the calculation of a member's average annual salary, but the member is eligible to receive COLA increases. The COLA method is the automatic calculation method for any active member with fewer than 15 years of service as of January 1, 1989.

Under the COLA method, members who are at least 55 years old and have been receiving OP&F pension benefits for at least one year are eligible for cost-of-living allowance adjustments. The age 55 provision for receiving a COLA does not apply to those who are receiving a permanent and total disability benefit, surviving beneficiaries under optional plans and statutory survivors.

The COLA amount for members who have 15 or more years of service credit as of July 1, 2013 and members who are receiving a pension benefit that became effective before July 1, 2013 will be equal to three percent of the member's base pension benefit.



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

The COLA amount for members who have less than 15 years of service credit as of July 1, 2013, and members whose pension benefit became effective on or after July 1, 2013, will be equal to a percentage of the member's base pension benefit where the percentage is the lesser of three percent or the percentage increase in the consumer price index, if any, over the twelve-month period that ends on the thirtieth day of September of the immediately preceding year, rounded to the nearest one-tenth of one percent.

Members who retired prior to July 24, 1986 or their surviving beneficiaries under optional plans are entitled to cost-of-living allowance increases. The annual increase is paid on July 1st of each year. The annual COLA increase is \$360 under a Single Life Annuity Plan with proportional reductions for optional payment plans.

Re-employed Retiree's Defined Contribution Plan Benefit

Effective June 30, 1991, every person who is retired under an Ohio public pension plan and who is re-employed in an OP&F covered position must contribute to OP&F at the same rate as other police officers or firefighters. The employer pays the normal rate as well. If the re-employed member terminates employment before age 60, Ohio law allows the member to receive a lump sum payment of post-retirement employee contributions made during the period of re-employment, plus interest. If the member waits until age 60 to receive this benefit, he or she can choose to receive either a lump sum payment in an amount equal to twice his or her contributions, plus interest, or a lifetime annuity paid monthly. If, after calculation, the member's lifetime monthly annuity is less than \$25, the member may only select the lump sum payment option. If the member is married spousal consent is required before payment can occur.

Health Care Stipend and Medicare

Although support for retiree health care is not a vested right and is a discretionary benefit from OP&F subject to change at any time, the Board of Trustees has elected to continue to sponsor a plan for the last 45 years.

Beginning in 1974, OP&F sponsored a group health care program for retirees and their dependents by covering all or part of the plan premiums, in addition to paying all claims.

Effective July 1992, retirees and survivors made monthly medical benefit contributions which are credited to the Health Care Stabilization Fund. These contributions were reviewed on an annual basis to determine adequacy with the rising cost of health care. In 2004, a new contribution strategy was implemented. Retirees and survivors then paid a percentage of the full cost of the benefit based on the year of retirement. Due to the rising cost of health care and



APPENDIX A – SUMMARY OF MAIN BENEFIT PROVISIONS

the primary source requirements of pension reform legislation enacted in 2013, OP&F is no longer able to offer a plan as in the past. On December 31, 2018, the group health care plan ended.

On January 1, 2019, a stipend-based health care model replaced the self-insured group health care plan. OP&F contracted with a vendor who assists eligible retirees in choosing health care plans that are available where they live (both Medicare eligible and pre-65 populations). A stipend funded by OP&F is available to these members through a Health Reimbursement Arrangement and can be used to reimburse retirees for qualified health care expenses. As a result of this change, it is expected that the solvency of the HCSF will be extended allowing OP&F to provide stipends to eligible participants.

Regardless of a benefit recipient's participation in the health care program, OP&F is required by law to pay eligible recipients of a service pension, disability benefit and spousal survivor benefit for their Medicare Part B insurance premium, up to the statutory maximum provided the benefit recipient is not eligible to receive reimbursement from any other source. Once OP&F receives the necessary documentation, a monthly reimbursement is included as part of the recipient's next benefit payment.

Note: This benefit is not included in the principal valuation results, but it is included in the results of the retiree health care valuation.



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

APPENDIX B

STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

The actuarial assumptions were adopted as of January 1, 2017, based on a five-year experience review covering the period 2012 through 2016. The next review of the actuarial assumptions is to be completed for adoption with the January 1, 2022 valuation.

Interest Rate

8.00 percent per annum, compounded annually.

Salary Increase Rates

Assumed annual salary increases are as follows:

Years of Service	Salary Increase Rate
Less than 1	10.50%
1	9.00%
2	8.00%
3	6.00%
4	4.50%
5 or more	3.75%

Payroll Growth

3.25 percent per annum, compounded annually, consisting of inflation rate of 2.75 percent plus productivity increase rate of 0.5 percent.

DROP Interest Crediting Rate

4.0 percent per annum, compounded annually.

CPI-Based COLA

2.2 percent simple for increases based on the lesser of the increase in CPI and three percent.



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Withdrawal Rates

The following sample withdrawal rates are based on age and service (for causes other than death, disability, or retirement):

Police

Years of Service	Age							
	25	30	35	40	45	50	55	60
0	9.62%	9.94%	15.93%	17.85%	15.22%	22.00%	18.68%	19.23%
1	5.88%	5.54%	6.49%	7.65%	5.99%	10.15%	11.21%	11.54%
2	3.27%	4.21%	3.92%	5.87%	5.80%	9.90%	9.34%	9.62%
3	4.11%	3.35%	4.66%	5.74%	5.61%	9.17%	8.78%	9.04%
4	3.64%	3.06%	4.29%	5.23%	4.95%	7.95%	7.47%	7.69%
5	2.59%	2.65%	3.49%	4.22%	4.22%	7.57%	8.79%	6.50%
6	2.64%	2.56%	3.28%	3.57%	3.44%	5.86%	7.03%	5.20%
7	2.58%	2.21%	3.18%	3.46%	3.44%	5.71%	6.90%	5.10%
8	2.39%	1.95%	2.56%	1.95%	2.06%	5.57%	6.63%	4.90%
9	2.12%	1.59%	1.74%	1.62%	1.18%	4.43%	6.09%	4.50%
10	1.56%	1.56%	1.66%	1.59%	1.09%	4.31%	6.03%	4.46%
11	1.49%	1.49%	1.58%	1.56%	1.00%	4.20%	5.98%	4.42%
12	1.41%	1.41%	1.50%	1.52%	0.91%	4.09%	5.92%	4.38%
13	1.31%	1.31%	1.42%	1.49%	0.83%	3.97%	5.87%	4.34%
14	1.21%	1.21%	1.33%	1.46%	0.74%	3.86%	5.82%	4.30%
15+	1.17%	1.17%	1.17%	0.91%	0.79%	0.91%	1.10%	1.96%



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Firefighters

Years of Service	Age							
	25	30	35	40	45	50	55	60
0	2.69%	3.46%	3.66%	6.22%	8.48%	6.93%	8.73%	19.11%
1	2.11%	1.46%	2.96%	4.98%	7.01%	5.00%	7.16%	15.66%
2	1.53%	1.64%	1.83%	3.04%	4.98%	4.54%	7.16%	15.66%
3	1.44%	1.55%	1.74%	2.90%	4.80%	4.32%	7.16%	15.66%
4	1.15%	1.46%	1.66%	2.77%	4.61%	3.97%	5.73%	12.53%
5	0.83%	0.94%	1.33%	1.64%	2.05%	2.91%	5.33%	11.94%
6	0.78%	0.87%	1.24%	1.53%	1.72%	2.58%	3.66%	8.19%
7	0.78%	0.80%	1.19%	1.42%	1.51%	2.37%	3.35%	7.51%
8	0.72%	0.73%	1.05%	1.31%	1.40%	2.26%	3.05%	6.82%
9	0.73%	0.73%	0.86%	1.10%	1.18%	1.62%	2.29%	5.12%
10	0.73%	0.73%	0.84%	1.07%	1.16%	1.55%	2.21%	4.95%
11	0.71%	1.71%	0.82%	1.05%	1.14%	1.49%	2.13%	4.78%
12	0.68%	0.68%	0.80%	1.03%	1.12%	1.42%	2.06%	4.60%
13	0.65%	0.65%	0.78%	1.01%	1.10%	1.36%	1.98%	4.43%
14	0.61%	0.61%	0.76%	0.99%	1.07%	1.29%	1.91%	4.26%
15+	0.90%	0.90%	0.90%	0.47%	0.50%	0.59%	0.92%	1.21%



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Rates of Disability

The following are sample rates of disability and occurrence of disability by type:

Age	Police		Fire	
	Hired Before July 2, 2013	Hired After July 1, 2013	Hired Before July 2, 2013	Hired After July 1, 2013
20	0.001%	0.001%	0.001%	0.001%
25	0.007%	0.007%	0.005%	0.005%
30	0.089%	0.089%	0.002%	0.022%
35	0.154%	0.154%	0.091%	0.091%
40	0.403%	0.403%	0.204%	0.204%
45	0.533%	0.533%	0.347%	0.347%
50	1.351%	0.691%	1.337%	0.475%
55	1.119%	1.119%	2.025%	2.025%
60	2.078%	2.078%	3.060%	3.060%
64	3.099%	3.099%	7.190%	7.190%

Upon attainment of normal retirement eligibility, the rate is 0.300%.

Type of Disability	
On duty permanent and total	17%
On duty partial	58%
Off duty ordinary	25%



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Retirement Rates

The following rates of retirement apply to members who have not elected to be in DROP:

Age	Police	Firefighter
48	0%	0%
48-50	5%	4%
51	6%	4%
52	6%	6%
53	10%	6%
54	10%	7%
55-57	11%	11%
58	5%	16%
59	10%	16%
60	18%	20%
61	19%	20%
62	25%	50%
63	25%	20%
64	25%	25%
65-69	35%	25%
70	100%	100%

Deferred Retirement Option Plan Elections

90 percent of members who do not retire when first eligible are assumed to elect DROP.



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

DROP Retirement Rates

The following rates of retirement apply to members in DROP on or before July 1, 2013:

Police

Age	Years in DROP								
	0	1	2	3	4	5	6	7	8
48	5%	5%							
49	4%	5%							
50	4%	5%	4%						
51	4%	5%	4%	10%					
52	3%	5%	4%	9%	9%				
53	3%	5%	4%	9%	8%	12%			
54	4%	5%	5%	10%	9%	13%	13%		
55	5%	5%	5%	16%	16%	14%	18%	44%	
56	5%	5%	5%	15%	15%	13%	17%	41%	100%
57	5%	5%	5%	16%	15%	14%	17%	43%	100%
58	5%	5%	5%	16%	15%	14%	17%	42%	100%
59	15%	5%	5%	15%	16%	16%	18%	44%	100%
60	17%	5%	5%	16%	17%	18%	19%	47%	100%
61	17%	5%	5%	17%	18%	18%	20%	48%	100%
62	16%	5%	5%	16%	17%	17%	19%	46%	100%
63	18%	6%	6%	18%	19%	19%	21%	50%	100%
64	19%	5%	5%	17%	17%	18%	19%	49%	100%
65	24%	6%	6%	23%	22%	22%	25%	59%	100%
66	24%	6%	6%	20%	19%	22%	22%	54%	100%
67	24%	5%	5%	20%	19%	22%	22%	53%	100%
68	24%	5%	5%	15%	19%	22%	22%	53%	100%
69	24%	5%	5%	20%	19%	22%	22%	47%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Firefighter

Age	Years in DROP								
	0	1	2	3	4	5	6	7	8
48	2%								
49	4%	3%							
50	5%	4%	4%						
51	3%	3%	3%	9%					
52	3%	3%	3%	8%	9%				
53	4%	3%	4%	10%	11%	13%			
54	4%	3%	3%	9%	11%	13%	13%		
55	6%	4%	4%	13%	13%	15%	17%	38%	
56	5%	3%	4%	13%	12%	14%	17%	37%	100%
57	5%	3%	4%	13%	12%	14%	17%	37%	100%
58	5%	3%	4%	17%	15%	15%	17%	46%	100%
59	6%	3%	4%	17%	15%	16%	18%	46%	100%
60	6%	3%	4%	18%	16%	16%	19%	48%	100%
61	6%	3%	4%	17%	15%	15%	19%	45%	100%
62	6%	3%	4%	17%	15%	16%	18%	46%	100%
63	29%	3%	4%	20%	18%	20%	18%	52%	100%
64	32%	3%	4%	21%	20%	22%	19%	55%	100%
65	33%	4%	4%	22%	21%	23%	20%	57%	100%
66	38%	4%	5%	26%	24%	23%	24%	64%	100%
67	38%	4%	5%	26%	24%	23%	24%	65%	100%
68	38%	4%	5%	26%	24%	23%	24%	65%	100%
69	38%	4%	5%	20%	25%	23%	24%	65%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%

The same rates apply for members entering DROP after July 1, 2013, except the rates for years three and four are replaced with the rates for year two.



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

The following rates of retirement apply to members who are not yet in DROP but may become eligible in the future:

Police

Age	Years Eligible for DROP									
	0	1	2	3	4	5	6	7	8	9+
47	6%									
48	12%									
49	7%	5%								
50	6%	5%	5%							
51	6%	5%	5%	5%						
52	6%	5%	5%	5%	5%					
53	11%	5%	5%	5%	5%	12%				
54	10%	5%	5%	5%	5%	13%	13%			
55	12%	6%	6%	6%	6%	14%	18%	43%		
56	12%	6%	5%	5%	5%	13%	17%	41%	96%	
57	13%	6%	5%	5%	5%	14%	17%	43%	94%	100%
58	7%	5%	5%	5%	5%	13%	17%	43%	98%	100%
59	10%	5%	5%	5%	5%	17%	18%	45%	97%	100%
60	20%	8%	6%	6%	6%	18%	20%	48%	98%	100%
61	32%	6%	5%	5%	5%	18%	19%	46%	93%	100%
62	29%	9%	5%	5%	5%	16%	17%	42%	92%	100%
63	33%	5%	7%	7%	7%	18%	19%	46%	95%	100%
64	31%	11%	7%	7%	7%	18%	19%	49%	93%	100%
65	47%	13%	6%	6%	6%	20%	22%	54%	100%	100%
66	47%	13%	5%	5%	5%	20%	20%	50%	100%	100%
67	47%	13%	18%	18%	18%	20%	20%	46%	100%	100%
68	47%	13%	18%	18%	18%	20%	20%	46%	100%	100%
69	47%	13%	18%	18%	18%	20%	20%	46%	100%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Firefighters

Age	Years Eligible for DROP									
	0	1	2	3	4	5	6	7	8	9+
47	3%									
48	6%									
49	6%	4%								
50	6%	4%	4%							
51	5%	3%	4%	4%						
52	5%	3%	3%	3%	3%					
53	5%	4%	4%	4%	4%	13%				
54	5%	3%	4%	4%	4%	13%	13%			
55	8%	5%	5%	5%	5%	15%	18%	38%		
56	8%	5%	4%	4%	4%	14%	17%	38%	95%	
57	8%	4%	5%	5%	5%	15%	17%	38%	98%	100%
58	8%	5%	4%	4%	4%	16%	19%	46%	97%	100%
59	9%	5%	5%	5%	5%	16%	19%	46%	97%	100%
60	10%	5%	7%	7%	7%	17%	20%	49%	86%	100%
61	11%	5%	4%	4%	4%	16%	19%	45%	93%	100%
62	15%	7%	12%	12%	12%	16%	20%	49%	95%	100%
63	33%	7%	4%	4%	4%	19%	16%	48%	100%	100%
64	37%	7%	3%	3%	3%	20%	18%	49%	100%	100%
65	37%	7%	8%	8%	8%	20%	18%	51%	100%	100%
66	37%	7%	4%	4%	4%	23%	23%	61%	100%	100%
67	37%	7%	4%	4%	4%	23%	23%	53%	100%	100%
68	37%	7%	4%	4%	4%	23%	23%	53%	100%	100%
69	37%	7%	4%	4%	4%	23%	23%	47%	100%	100%
70	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Retirement Age for Inactive Vested Participants

Commencement at age 48 and 25 years of service from full-time hire date, whichever is later.



APPENDIX B – STATEMENT OF ACTUARIAL ASSUMPTIONS AND OTHER INPUTS

Healthy Mortality

Mortality for non-disabled participants is based on the RP-2014 Total Employee and Healthy Annuitant Mortality Tables rolled back to 2006, adjusted according to the rates in the following table, and projected with the Buck Modified 2016 Improvement Scale. Rates for surviving beneficiaries are adjusted by 120%.

Age	Police	Fire
67 or less	77%	68%
68-77	105%	87%
78 and up	115%	120%

Disabled Mortality

Mortality for disabled participants is based on the RP-2014 Disabled Mortality Tables rolled back to 2006, adjusted according to the rates in the following table, and projected with the Buck Modified 2016 Improvement Scale.

Age	Police	Fire
59 or less	35%	35%
60-69	60%	45%
70-79	75%	70%
80 and up	100%	90%

Credited Service

Credited service on the valuation date, as provided by OP&F, includes all service credited under the plan, including service transferred from other municipal plans and purchased service. The valuation assumes future service will be credited at the rate of one year per year worked, with no assumed future crediting of transferred service or purchased service.

415 Limits

Benefits are limited by the IRC Section 415, assumed to increase 2.75 percent per annum.



Future Expenses

The normal cost is increased by all administrative expenses budgeted, net of the State Subsidy received from the State of Ohio.

Unknown Data for Members

Same as those exhibited by members with similar known characteristics. Deferred benefits are estimated at termination until OP&F has determined the actual amount at retirement. Reported salaries that are less than \$10,000 when annualized are assumed to be anomalous and are reset to \$60,000. The adjustment for late reported salaries is not applied in this case.

Late Reported Salaries

A 1.137 percent load is added to the 2020 reported salaries to account for salaries accrued but not reported for the valuation. This adjustment is based on an average of plan experience from the prior three years. The raw adjustment rates for each year are as follows:

Pay for Calendar Year	Raw Adjustment
2020	0.820%
2019	1.335%
2018	1.256%

This adjustment will be reviewed annually for future late reported salaries.

Percent Married

75 percent of active members are assumed to be married.

Age of Spouse

Wives are assumed to be three years younger than their husbands.



Optional Form Election

33 percent of service retirees and 10 percent of disability retirees are assumed to elect the 40 percent Joint and Survivor pension at retirement. If the joint annuitant predeceases the retiree, the increase, or pop-up, in the retiree's benefit associated with the 40 percent Joint and Survivor pension is assumed to be 14.36 percent for disability retirees and 10.50 percent for all other retirees.

DROP Account Distributions

For members who terminate DROP before the required three or five years, distribution of the account balance is assumed to be made in a lump sum payment at the end of the three or five year period. Distributions for other members are assumed to be made in a lump sum or installments at retirements in a pattern equivalent to 25 percent receiving lump sums, 30 percent receiving installments over two years, and 45 percent receiving installments over 10 years.

Dependent Parents

None anticipated, but dependency of any dependent parent in receipt of benefits is assumed to continue for the parent's lifetime.

Dependent Children

Each member is assumed to have two children, born when the member was age 26. Dependency is assumed to cease when the child is 22.

Medicare Part B Premium Reimbursement

For service and disability retirements, as well as survivors, Ohio Police & Fire reimburses the standard Medicare Part B premium (\$107.00 per month for 2021) provided the retiree is not eligible for reimbursement from any other sources.

88 percent of members are assumed to be eligible for reimbursement once they reach age 65.

The Medicare Part B Premium assumptions are only used to determine the cost if the Medicare Part B reimbursement payments were to be paid from the pension trust instead of the Health Care Stabilization Fund.



Methods

Actuarial Cost Method

Projected benefit method with individual level percentage entry age normal cost and actuarial accrued liability. Gains and losses are reflected in the actuarial accrued liability. Prior to January 1, 2015, to be consistent with the asset methodology employed by OP&F, DROP balances were netted out of the liabilities.

Adjustment for Re-Employed Retirees

The present value of future benefits and the actuarial accrued liability are increased by an amount for the re-employed retirees' defined contribution plan benefit equal to two times the re-employed retirees' post-retirement contribution balances on the valuation date.

Adjustment for Employer Accrued Liability

The actuarial accrued liability is reduced by the present value of special employer contributions -- referred to as "Local Funds." Local governments are required by state statute to pay the unfunded portion of the actuarially-determined liability of the local police and firefighter's relief and pension funds that were merged to form OP&F in 1967. The ORC designates this obligation of the local governments to the Employers' Accrued Liability. Interest on the outstanding balance is being accrued at the rate of 4.25 percent, compounded semiannually. Local governments began repayment in 1969 and payments are required to be made until 2035. The present value of the remaining payments on the valuation date is determined using the valuation interest rate.

Asset Valuation Method

A four-year moving average market value of assets that spreads the difference between the actual investment income and the expected income on the market value (based on the valuation interest rate) over a period of four years. The actuarial value shall not be less than 80 percent or more than 120 percent of market value.



Data

Census and Assets

The valuation was based on members of OP&F as of the valuation date and does not take into account future members. All census and asset data was supplied by OP&F. Salaries and benefits tabulated in the tables in this report were summed to pennies, but displayed to whole dollars, thus, totals may not be consistent with amounts displayed due to rounding.



EXHIBIT I – 1a

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Salaries Distributed by Age
POLICE

Age	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
19	-	\$ -	-	\$ -	-	\$ -
20	4	167,973	1	34,968	5	202,941
21	26	1,161,288	5	259,277	31	1,420,565
22	86	4,376,039	9	462,693	95	4,838,733
23	160	8,752,472	47	2,647,479	207	11,399,952
24	252	14,688,253	44	2,473,541	296	17,161,793
25	274	16,338,114	53	3,341,569	327	19,679,683
26	337	20,830,183	50	3,132,565	387	23,962,748
27	360	23,340,534	61	3,854,319	421	27,194,853
28	367	24,673,230	78	5,090,664	445	29,763,894
29	384	26,466,061	72	4,896,153	456	31,362,213
30	406	28,503,890	70	4,668,926	476	33,172,817
31	415	29,873,733	76	4,897,929	491	34,771,662
32	423	31,407,455	42	2,810,763	465	34,218,219
33	427	32,355,105	44	2,946,886	471	35,301,991
34	402	30,771,624	47	3,386,818	449	34,158,442
35	425	32,921,724	37	2,782,822	462	35,704,546
36	407	32,815,098	41	3,178,469	448	35,993,567
37	382	31,222,939	41	3,197,517	423	34,420,457
38	376	30,272,987	36	2,982,311	412	33,255,298
39	343	29,123,732	40	3,322,764	383	32,446,496
40	372	31,128,548	43	3,517,521	415	34,646,070
41	332	28,431,642	42	3,398,905	374	31,830,546
42	313	27,093,410	34	2,978,468	347	30,071,878
43	368	32,360,857	22	1,758,286	390	34,119,143
44	342	29,787,597	38	3,115,203	380	32,902,800
45	387	34,282,444	36	3,205,700	423	37,488,144
46	395	35,260,046	39	3,415,348	434	38,675,394
47	428	38,561,756	53	4,755,571	481	43,317,326



APPENDIX C – DETAILED TABULATIONS OF THE DATA

EXHIBIT I – 1a

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Age
 POLICE (continued)

Age	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
48	492	\$ 44,672,857	45	\$ 3,969,091	537	\$ 48,641,948
49	541	48,582,223	51	4,715,438	592	53,297,661
50	579	52,856,633	67	6,233,772	646	59,090,404
51	496	45,596,228	54	4,798,773	550	50,395,001
52	463	43,394,508	39	3,550,496	502	46,945,004
53	405	37,227,392	44	4,074,874	449	41,302,267
54	352	33,039,323	48	4,422,793	400	37,462,117
55	312	29,875,315	29	2,396,441	341	32,271,756
56	240	22,372,199	32	2,962,128	272	25,334,327
57	168	15,489,641	23	2,114,592	191	17,604,233
58	137	12,344,226	11	951,592	148	13,295,819
59	108	9,462,553	12	1,144,367	120	10,606,920
60	84	7,335,163	10	863,992	94	8,199,155
61	65	5,518,785	3	226,833	68	5,745,618
62	39	3,324,074	6	471,575	45	3,795,649
63	29	2,447,794	5	421,198	34	2,868,992
64	25	2,053,061	2	148,049	27	2,201,110
65	14	1,257,004	1	96,206	15	1,353,210
66	11	962,168	-	-	11	962,168
67	9	809,589	-	-	9	809,589
68	6	540,103	-	-	6	540,103
69	2	194,419	-	-	2	194,419
70	1	46,304	-	-	1	46,304
71	2	162,289	-	-	2	162,289
72	3	278,385	-	-	3	278,385
73	1	94,581	-	-	1	94,581
74	-	-	-	-	-	-
75	-	-	-	-	-	-
76	-	-	-	-	-	-
77	1	43,161	-	-	1	43,161
Total	13,778	\$ 1,126,948,713	1,683	\$ 130,075,646	15,461	\$ 1,257,024,359



EXHIBIT I – 1b

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Years of Service
 POLICE

Service	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
0	709	\$ 36,589,011	155	\$ 8,361,932	864	\$ 44,950,943
1	785	44,685,340	163	9,360,350	948	54,045,690
2	792	49,362,253	157	9,828,944	949	59,191,196
3	626	42,216,909	80	5,329,730	706	47,546,639
4	573	41,659,754	96	7,110,754	669	48,770,508
5	570	44,106,718	73	5,446,908	643	49,553,626
6	534	41,806,993	52	3,588,129	586	45,395,121
7	508	39,001,757	37	2,761,597	545	41,763,354
8	436	35,218,659	37	2,917,675	473	38,136,334
9	356	29,501,039	20	1,731,040	376	31,232,079
10	269	23,415,709	17	1,287,776	286	24,703,484
11	191	15,511,676	20	1,643,584	211	17,155,261
12	330	27,235,934	32	2,747,780	362	29,983,713
13	473	40,638,115	59	5,138,164	532	45,776,279
14	366	32,530,303	51	4,486,632	417	37,016,934
15	271	23,815,560	30	2,624,464	301	26,440,024
16	296	26,548,716	38	3,497,180	334	30,045,895
17	275	25,018,328	29	2,439,981	304	27,458,308
18	340	30,176,640	39	3,454,027	379	33,630,666
19	389	34,241,438	50	4,583,360	439	38,824,797
20	370	33,068,786	28	2,539,166	398	35,607,951
21	395	36,139,750	49	4,565,245	444	40,704,995
22	455	41,350,790	44	3,934,373	499	45,285,163
23	434	40,199,566	44	4,189,397	478	44,388,963
24	464	43,392,680	43	4,191,702	507	47,584,382
25	454	43,404,920	50	4,338,358	504	47,743,278



EXHIBIT I – 1b

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Years of Service
 POLICE (continued)

Service	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
26	387	\$ 37,396,664	32	\$ 2,997,422	419	\$ 40,394,086
27	332	32,243,731	40	3,595,773	372	35,839,504
28	291	27,196,879	33	3,088,472	324	30,285,351
29	262	25,138,905	22	2,019,573	284	27,158,479
30	295	28,570,716	27	2,699,995	322	31,270,711
31	197	19,672,512	17	1,639,729	214	21,312,241
32	192	19,505,884	13	1,332,768	205	20,838,652
33	78	7,984,454	4	398,254	82	8,382,709
34	28	2,576,092	-	-	28	2,576,092
35	19	1,975,420	2	205,414	21	2,180,834
36	16	1,768,155	-	-	16	1,768,155
37	3	303,668	-	-	3	303,668
38	5	599,373	-	-	5	599,373
39	3	222,660	-	-	3	222,660
40	1	96,545	-	-	1	96,545
41	1	84,345	-	-	1	84,345
42	1	118,533	-	-	1	118,533
43	4	404,511	-	-	4	404,511
44	-	-	-	-	-	-
45	-	-	-	-	-	-
46	-	-	-	-	-	-
47	-	-	-	-	-	-
48	1	98,754	-	-	1	98,754
49	-	-	-	-	-	-
50	1	153,568	-	-	1	153,568
Total	13,778	\$ 1,126,948,713	1,683	\$ 130,075,646	15,461	\$ 1,257,024,358



EXHIBIT I – 2a

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Age
 FIREFIGHTERS'

Age	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
19 & Under	4	\$ 177,429	1	\$ 49,181	5	\$ 226,610
20	23	1,212,340	1	53,071	24	1,265,411
21	68	3,823,609	1	55,540	69	3,879,150
22	95	5,447,294	2	109,627	97	5,556,921
23	110	6,461,603	10	568,692	120	7,030,295
24	172	10,601,986	11	671,216	183	11,273,202
25	197	12,574,944	6	357,840	203	12,932,784
26	244	15,578,579	16	1,042,792	260	16,621,371
27	262	17,902,548	13	793,819	275	18,696,368
28	307	21,349,603	13	759,903	320	22,109,506
29	321	22,717,671	24	1,540,294	345	24,257,965
30	364	26,107,538	20	1,302,130	384	27,409,669
31	361	26,570,466	19	1,292,540	380	27,863,006
32	359	26,773,817	18	1,421,906	377	28,195,723
33	416	31,842,497	19	1,308,519	435	33,151,016
34	408	31,889,813	14	974,637	422	32,864,450
35	427	33,397,609	11	874,989	438	34,272,598
36	399	32,235,309	17	1,256,800	416	33,492,108
37	390	31,907,482	14	1,088,674	404	32,996,157
38	399	33,026,432	12	981,550	411	34,007,982
39	390	32,571,361	9	745,059	399	33,316,421
40	385	32,743,177	13	1,216,414	398	33,959,590
41	412	35,450,562	10	964,647	422	36,415,209
42	399	35,304,162	14	1,137,055	413	36,441,218
43	351	30,899,385	11	897,610	362	31,796,995
44	373	33,741,614	11	905,215	384	34,646,829
45	385	35,708,664	13	1,159,026	398	36,867,690
46	387	36,240,814	6	601,251	393	36,842,064
47	376	34,750,294	11	1,019,253	387	35,769,547



APPENDIX C – DETAILED TABULATIONS OF THE DATA

EXHIBIT I – 2a

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Age
 FIREFIGHTERS’ (continued)

Age	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
48	428	\$ 40,332,581	10	\$ 891,511	438	\$ 41,224,092
49	439	40,998,575	10	874,628	449	41,873,203
50	462	44,005,753	6	551,489	468	44,557,242
51	446	43,599,875	12	1,157,470	458	44,757,345
52	391	37,360,147	12	1,172,299	403	38,532,445
53	347	33,342,897	4	428,172	351	33,771,069
54	346	33,375,383	6	658,499	352	34,033,882
55	346	33,297,359	5	492,369	351	33,789,728
56	308	29,037,457	6	546,929	314	29,584,386
57	233	22,044,647	5	366,524	238	22,411,172
58	195	18,756,537	3	255,838	198	19,012,375
59	146	14,070,772	2	155,461	148	14,226,234
60	118	11,289,329	3	280,895	121	11,570,224
61	78	7,073,843	2	151,978	80	7,225,821
62	74	6,945,896	1	88,021	75	7,033,917
63	38	3,504,301	3	277,066	41	3,781,367
64	20	1,753,421	1	113,929	21	1,867,350
65	16	1,420,560	1	120,289	17	1,540,849
66	11	987,864	1	98,486	12	1,086,350
67	3	254,676	-	-	3	254,676
68	4	359,401	-	-	4	359,401
69	2	160,687	-	-	2	160,687
70	3	205,410	-	-	3	205,410
71	1	105,044	-	-	1	105,044
72	2	177,369	-	-	2	177,369
73	1	67,095	-	-	1	67,095
74	1	75,555	-	-	1	75,555
75	-	-	-	-	-	-
76	1	70,922	-	-	1	70,922
Total	13,244	\$ 1,123,681,957	433	\$ 33,831,105	13,677	\$ 1,157,513,062



EXHIBIT I – 2b

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Salaries Distributed by Years of Service
FIREFIGHTERS'

Service	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
0	574	\$ 31,721,623	52	\$ 2,947,568	626	\$ 34,669,191
1	702	41,834,525	64	3,843,979	766	45,678,503
2	650	43,056,127	27	1,785,788	677	44,841,915
3	661	46,699,183	25	1,638,863	686	48,338,046
4	567	42,752,501	14	1,074,974	581	43,827,475
5	488	37,226,704	11	859,883	499	38,086,588
6	489	38,918,972	20	1,623,847	509	40,542,819
7	469	37,927,810	17	1,398,183	486	39,325,993
8	369	30,911,342	10	783,173	379	31,694,515
9	357	30,264,432	11	930,694	368	31,195,126
10	331	28,962,582	9	778,780	340	29,741,362
11	257	21,384,811	6	543,871	263	21,928,682
12	363	31,185,484	7	664,131	370	31,849,615
13	323	27,228,056	8	750,328	331	27,978,384
14	322	29,439,370	14	1,257,328	336	30,696,698
15	249	21,973,182	8	673,730	257	22,646,912
16	262	24,179,960	8	683,123	270	24,863,082
17	410	35,907,846	7	539,506	417	36,447,352
18	333	30,507,773	11	1,046,749	344	31,554,521
19	392	36,223,821	13	1,134,510	405	37,358,331
20	454	42,272,461	18	1,669,547	472	43,942,008
21	478	44,989,757	15	1,455,301	493	46,445,057
22	472	45,902,707	18	1,736,294	490	47,639,001
23	439	42,922,927	4	353,593	443	43,276,520
24	449	43,601,367	14	1,389,681	463	44,991,048
25	356	34,381,367	2	201,162	358	34,582,529



APPENDIX C – DETAILED TABULATIONS OF THE DATA

EXHIBIT I – 2b

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Salaries Distributed by Years of Service
FIREFIGHTERS’ (continued)

Service	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
26	305	\$ 30,357,884	3	\$ 380,918	308	\$ 30,738,802
27	276	27,289,750	1	100,691	277	27,390,441
28	288	27,995,242	3	328,252	291	28,323,494
29	265	26,269,235	3	324,984	268	26,594,219
30	208	20,075,189	4	382,084	212	20,457,273
31	305	29,805,911	3	248,198	308	30,054,108
32	193	19,544,575	2	202,910	195	19,747,485
33	77	8,451,824	-	-	77	8,451,824
34	53	5,404,811	-	-	53	5,404,811
35	31	3,329,493	1	98,486	32	3,427,979
36	4	416,049	-	-	4	416,049
37	5	526,245	-	-	5	526,245
38	7	664,257	-	-	7	664,257
39	7	721,582	-	-	7	721,582
40	1	86,149	-	-	1	86,149
41	1	117,580	-	-	1	117,580
42	-	-	-	-	-	-
43	2	249,492	-	-	2	249,492
44	-	-	-	-	-	-
45	-	-	-	-	-	-
46	-	-	-	-	-	-
47	-	-	-	-	-	-
48	-	-	-	-	-	-
49	-	-	-	-	-	-
50	-	-	-	-	-	-
Total	13,244	\$ 1,123,681,957	433	\$ 33,831,105	13,677	\$ 1,157,513,062



EXHIBIT I – 3a

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Age
 TOTAL

Age	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
19 & Under	4	\$ 177,429	1	\$ 49,181	5	\$ 226,610
20	27	1,380,313	2	88,040	29	1,468,352
21	94	4,984,897	6	314,817	100	5,299,715
22	181	9,823,334	11	572,320	192	10,395,654
23	270	15,214,075	57	3,216,171	327	18,430,247
24	424	25,290,238	55	3,144,757	479	28,434,995
25	471	28,913,059	59	3,699,409	530	32,612,467
26	581	36,408,763	66	4,175,357	647	40,584,119
27	622	41,243,083	74	4,648,138	696	45,891,221
28	674	46,022,833	91	5,850,567	765	51,873,400
29	705	49,183,731	96	6,436,447	801	55,620,178
30	770	54,611,429	90	5,971,057	860	60,582,485
31	776	56,444,199	95	6,190,469	871	62,634,668
32	782	58,181,272	60	4,232,670	842	62,413,942
33	843	64,197,601	63	4,255,405	906	68,453,007
34	810	62,661,437	61	4,361,455	871	67,022,892
35	852	66,319,333	48	3,657,811	900	69,977,144
36	806	65,050,407	58	4,435,269	864	69,485,675
37	772	63,130,422	55	4,286,192	827	67,416,613
38	775	63,299,419	48	3,963,860	823	67,263,279
39	733	61,695,093	49	4,067,823	782	65,762,917
40	757	63,871,725	56	4,733,935	813	68,605,660
41	744	63,882,204	52	4,363,552	796	68,245,756
42	712	62,397,572	48	4,115,524	760	66,513,096
43	719	63,260,242	33	2,655,896	752	65,916,138
44	715	63,529,212	49	4,020,418	764	67,549,629
45	772	69,991,109	49	4,364,725	821	74,355,834
46	782	71,500,859	45	4,016,599	827	75,517,458
47	804	73,312,049	64	5,774,824	868	79,086,873



APPENDIX C – DETAILED TABULATIONS OF THE DATA

EXHIBIT I – 3a

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Age
 TOTAL (continued)

Age	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
48	920	\$ 85,005,438	55	\$ 4,860,602	975	\$ 89,866,040
49	980	89,580,798	61	5,590,066	1,041	95,170,864
50	1,041	96,862,386	73	6,785,261	1,114	103,647,647
51	942	89,196,103	66	5,956,243	1,008	95,152,346
52	854	80,754,655	51	4,722,795	905	85,477,449
53	752	70,570,290	48	4,503,046	800	75,073,336
54	698	66,414,706	54	5,081,292	752	71,495,999
55	658	63,172,675	34	2,888,809	692	66,061,484
56	548	51,409,656	38	3,509,057	586	54,918,713
57	401	37,534,288	28	2,481,116	429	40,015,404
58	332	31,100,763	14	1,207,431	346	32,308,193
59	254	23,533,325	14	1,299,828	268	24,833,153
60	202	18,624,492	13	1,144,887	215	19,769,379
61	143	12,592,627	5	378,811	148	12,971,439
62	113	10,269,970	7	559,596	120	10,829,566
63	67	5,952,095	8	698,264	75	6,650,359
64	45	3,806,482	3	261,978	48	4,068,460
65	30	2,677,564	2	216,495	32	2,894,058
66	22	1,950,031	1	98,486	23	2,048,517
67	12	1,064,265	-	-	12	1,064,265
68	10	899,505	-	-	10	899,505
69	4	355,106	-	-	4	355,106
70	4	251,714	-	-	4	251,714
71	3	267,332	-	-	3	267,332
72	5	455,754	-	-	5	455,754
73	2	161,675	-	-	2	161,675
74	1	75,555	-	-	1	75,555
75	-	-	-	-	-	-
76	1	70,922	-	-	1	70,922
77	1	43,161	-	-	1	43,161
Total	27,022	\$ 2,250,630,670	2,116	\$ 163,906,750	29,138	\$ 2,414,537,420



EXHIBIT I – 3b

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Salaries Distributed by Years of Service
TOTAL

Service	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
0	1,283	\$ 68,310,634	207	\$ 11,309,500	1,490	\$ 79,620,134
1	1,487	86,519,865	227	13,204,328	1,714	99,724,193
2	1,442	92,418,380	184	11,614,731	1,626	104,033,112
3	1,287	88,916,091	105	6,968,594	1,392	95,884,685
4	1,140	84,412,255	110	8,185,727	1,250	92,597,983
5	1,058	81,333,422	84	6,306,791	1,142	87,640,214
6	1,023	80,725,965	72	5,211,975	1,095	85,937,940
7	977	76,929,567	54	4,159,780	1,031	81,089,347
8	805	66,130,001	47	3,700,848	852	69,830,849
9	713	59,765,471	31	2,661,734	744	62,427,205
10	600	52,378,291	26	2,066,555	626	54,444,846
11	448	36,896,487	26	2,187,455	474	39,083,943
12	693	58,421,418	39	3,411,910	732	61,833,328
13	796	67,866,171	67	5,888,492	863	73,754,663
14	688	61,969,673	65	5,743,959	753	67,713,632
15	520	45,788,742	38	3,298,194	558	49,086,936
16	558	50,728,675	46	4,180,302	604	54,908,978
17	685	60,926,173	36	2,979,487	721	63,905,660
18	673	60,684,412	50	4,500,775	723	65,185,188
19	781	70,465,259	63	5,717,870	844	76,183,129
20	824	75,341,247	46	4,208,712	870	79,549,959
21	873	81,129,507	64	6,020,545	937	87,150,052
22	927	87,253,497	62	5,670,667	989	92,924,165
23	873	83,122,493	48	4,542,990	921	87,665,483
24	913	86,994,048	57	5,581,383	970	92,575,430
25	810	77,786,287	52	4,539,520	862	82,325,807



EXHIBIT I – 3b

ACTIVE MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Salaries Distributed by Years of Service
 TOTAL (continued)

Service	Male		Female		Total	
	Number	Compensation	Number	Compensation	Number	Compensation
26	692	\$ 67,754,548	35	\$ 3,378,340	727	\$ 71,132,888
27	608	59,533,481	41	3,696,464	649	63,229,945
28	579	55,192,121	36	3,416,724	615	58,608,845
29	527	51,408,140	25	2,344,557	552	53,752,697
30	503	48,645,905	31	3,082,079	534	51,727,983
31	502	49,478,423	20	1,887,926	522	51,366,349
32	385	39,050,459	15	1,535,677	400	40,586,137
33	155	16,436,278	4	398,254	159	16,834,533
34	81	7,980,903	-	-	81	7,980,903
35	50	5,304,913	3	303,900	53	5,608,813
36	20	2,184,204	-	-	20	2,184,204
37	8	829,913	-	-	8	829,913
38	12	1,263,631	-	-	12	1,263,631
39	10	944,242	-	-	10	944,242
40	2	182,694	-	-	2	182,694
41	2	201,925	-	-	2	201,925
42	1	118,533	-	-	1	118,533
43	6	654,003	-	-	6	654,003
44	-	-	-	-	-	-
45	-	-	-	-	-	-
46	-	-	-	-	-	-
47	-	-	-	-	-	-
48	1	98,754	-	-	1	98,754
49	-	-	-	-	-	-
50	1	153,568	-	-	1	153,568
Total	27,022	\$ 2,250,630,670	2,116	\$ 163,906,750	29,138	\$ 2,414,537,420



EXHIBIT II - 1a

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Retirement Allowances Distributed by Age
POLICE SERVICE RETIREES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
48	14	\$ 661,410	3	\$ 178,275	17	\$ 839,685
49	41	1,928,351	5	237,260	46	2,165,611
50	62	2,995,709	9	474,982	71	3,470,691
51	80	3,748,034	7	342,650	87	4,090,684
52	98	4,003,037	14	686,065	112	4,689,102
53	98	4,465,656	13	605,190	111	5,070,846
54	163	7,279,159	12	539,964	175	7,819,123
55	189	9,137,805	20	928,653	209	10,066,458
56	239	11,396,631	22	1,045,514	261	12,442,145
57	238	11,619,109	25	1,111,147	263	12,730,256
58	257	13,433,056	25	1,226,921	282	14,659,976
59	259	13,485,852	36	1,893,444	295	15,379,296
60	227	12,490,789	23	1,208,046	250	13,698,835
61	263	14,728,140	25	1,421,408	288	16,149,548
62	277	15,463,744	38	2,090,147	315	17,553,891
63	302	16,714,270	35	1,728,216	337	18,442,486
64	349	19,323,054	38	2,018,166	387	21,341,220
65	360	20,036,338	30	1,720,024	390	21,756,362
66	363	20,377,958	37	2,012,681	400	22,390,639
67	319	17,678,362	26	1,405,172	345	19,083,534
68	329	18,072,660	26	1,446,912	355	19,519,572
69	335	18,519,500	21	1,176,174	356	19,695,674
70	333	17,992,429	17	913,599	350	18,906,029
71	324	17,760,641	17	874,421	341	18,635,061
72	350	19,630,727	12	659,911	362	20,290,638
73	392	21,745,017	15	868,567	407	22,613,584
74	325	16,828,600	4	219,341	329	17,047,941



EXHIBIT II - 1a

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 POLICE SERVICE RETIREES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
75	232	\$ 12,051,817	10	\$ 509,118	242	\$ 12,560,935
76	224	11,519,193	8	444,994	232	11,964,187
77	226	11,255,862	2	71,486	228	11,327,347
78	227	10,956,537	4	181,737	231	11,138,274
79	210	9,794,225	3	156,754	213	9,950,979
80	151	6,538,763	3	114,197	154	6,652,960
81	129	5,465,708	-	-	129	5,465,708
82	122	5,005,410	-	-	122	5,005,410
83	102	4,237,174	-	-	102	4,237,174
84	73	3,130,421	2	66,564	75	3,196,985
85	76	2,963,696	1	42,319	77	3,006,015
86	58	2,161,417	-	-	58	2,161,417
87	62	2,315,621	2	40,623	64	2,356,243
88	42	1,408,497	3	81,064	45	1,489,561
89	29	914,726	-	-	29	914,726
90	25	905,695	-	-	25	905,695
91	20	629,139	-	-	20	629,139
92	24	735,708	-	-	24	735,708
93	15	452,716	-	-	15	452,716
94	16	432,671	-	-	16	432,671
95	10	312,681	-	-	10	312,681
96	8	203,416	-	-	8	203,416
97	3	71,239	-	-	3	71,239
98	1	23,374	-	-	1	23,374
99	6	150,127	-	-	6	150,127
Total	8,677	\$ 445,151,872	593	\$ 30,741,704	9,270	\$ 475,893,576



EXHIBIT II – 1b

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 POLICE DISABILITY RETIREES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
32 & Under	1	\$ 27,111	-	\$ -	1	\$ 27,111
33	-	-	-	-	-	-
34	-	-	-	-	-	-
35	3	111,864	-	-	3	111,864
36	2	43,122	-	-	2	43,122
37	2	38,650	1	33,188	3	71,838
38	5	140,810	3	101,134	8	241,944
39	4	126,231	1	35,029	5	161,260
40	7	254,305	2	38,272	9	292,577
41	11	299,118	3	60,554	14	359,671
42	11	360,466	2	65,294	13	425,760
43	13	519,068	4	161,541	17	680,608
44	15	481,007	3	93,347	18	574,354
45	24	919,844	10	336,481	34	1,256,324
46	34	1,170,967	5	180,135	39	1,351,102
47	26	1,004,704	13	455,417	39	1,460,121
48	44	1,726,258	11	326,497	55	2,052,755
49	54	2,253,871	11	443,380	65	2,697,251
50	64	2,609,878	20	810,945	84	3,420,823
51	57	2,129,221	15	575,718	72	2,704,939
52	79	3,398,618	20	770,207	99	4,168,825
53	89	3,706,776	12	411,122	101	4,117,898
54	76	3,136,803	16	597,994	92	3,734,797
55	82	3,695,197	21	832,312	103	4,527,509
56	86	3,612,758	25	946,200	111	4,558,958
57	64	2,794,080	19	855,682	83	3,649,762
58	58	2,711,057	19	787,038	77	3,498,095
59	76	3,398,016	16	638,138	92	4,036,155
60	72	3,398,742	10	476,423	82	3,875,165
61	64	3,042,637	12	542,487	76	3,585,125
62	77	3,616,103	19	905,799	96	4,521,901
63	104	5,127,922	27	1,244,883	131	6,372,805
64	72	3,316,468	27	1,103,361	99	4,419,829



EXHIBIT II – 1b

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 POLICE DISABILITY RETIREES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
65	75	\$ 3,376,356	23	\$ 1,013,504	98	\$ 4,389,860
66	107	5,079,661	17	628,166	124	5,707,827
67	94	4,469,253	25	1,127,631	119	5,596,884
68	101	4,614,014	18	832,905	119	5,446,918
69	111	4,753,582	10	474,322	121	5,227,904
70	96	4,134,179	15	650,703	111	4,784,881
71	95	4,051,974	17	718,060	112	4,770,034
72	101	4,446,734	11	506,385	112	4,953,119
73	139	6,006,989	9	316,690	148	6,323,680
74	104	4,330,047	10	389,605	114	4,719,652
75	80	3,444,536	2	71,343	82	3,515,880
76	64	2,597,066	4	164,067	68	2,761,133
77	88	3,436,603	1	36,987	89	3,473,591
78	61	2,149,178	3	90,369	64	2,239,547
79	50	1,908,637	1	42,825	51	1,951,462
80	41	1,613,788	-	-	41	1,613,788
81	44	1,546,126	-	-	44	1,546,126
82	36	1,162,683	2	112,294	38	1,274,976
83	30	1,087,588	-	-	30	1,087,588
84	21	736,003	-	-	21	736,003
85	24	735,507	-	-	24	735,507
86	14	446,678	-	-	14	446,678
87	5	116,665	-	-	5	116,665
88	6	146,526	-	-	6	146,526
89	8	207,431	-	-	8	207,431
90	11	309,822	-	-	11	309,822
91	4	92,775	-	-	4	92,775
92	3	87,906	-	-	3	87,906
93	3	80,469	-	-	3	80,469
94	4	78,223	-	-	4	78,223
95	-	-	-	-	-	-
96	2	56,442	-	-	2	56,442
97	1	20,362	-	-	1	20,362
98	1	18,480	-	-	1	18,480
Total	3,000	\$ 126,513,951	515	\$ 21,004,435	3,515	\$ 147,518,387



EXHIBIT II – 1c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 POLICE SURVIVORS AND BENEFICIARIES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
1	-	\$ -	1	\$ 2,920	1	\$ 2,920
2	-	-	2	11,177	2	11,177
3	1	2,920	-	-	1	2,920
4	1	2,920	-	-	1	2,920
5	1	2,920	-	-	1	2,920
6	1	2,920	2	5,839	3	8,759
7	-	-	2	5,839	2	5,839
8	6	17,518	-	-	6	17,518
9	2	5,839	1	2,920	3	8,759
10	1	2,920	4	15,829	5	18,748
11	1	2,920	1	2,920	2	5,839
12	5	14,598	6	21,668	11	36,266
13	9	26,276	3	8,759	12	35,035
14	11	32,116	8	23,357	19	55,472
15	7	20,437	8	23,357	15	43,794
16	8	23,357	7	20,437	15	43,794
17	11	32,116	8	23,357	19	55,472
18	8	41,515	12	35,035	20	76,550
19	15	89,322	9	26,276	24	115,598
20	13	37,955	18	52,366	31	90,320
21	13	37,955	10	29,048	23	67,003
22	3	22,495	1	8,467	4	30,962
23	1	22,493	1	14,328	2	36,821
24	5	13,626	1	2,596	6	16,222
25	-	-	1	2,704	1	2,704
26	1	2,664	-	-	1	2,664
27	3	8,017	-	-	3	8,017
28	1	2,866	-	-	1	2,866
29	1	2,920	1	10,705	2	13,625
30	4	10,289	-	-	4	10,289
31	2	5,083	1	2,920	3	8,003
32	1	2,326	-	-	1	2,326
33	-	-	2	13,625	2	13,625
34	4	74,455	3	32,116	7	106,571
35	1	2,758	4	24,042	5	26,800
36	3	7,873	4	68,678	7	76,552
37	-	-	1	10,705	1	10,705



EXHIBIT II – 1c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 POLICE SURVIVORS AND BENEFICIARIES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
38	1	\$ 2,920	3	\$ 32,116	4	\$ 35,035
39	1	14,140	2	21,410	3	35,551
40	3	34,345	4	27,250	7	61,594
41	2	5,839	1	10,705	3	16,544
42	-	-	2	21,410	2	21,410
43	1	2,920	6	64,714	7	67,633
44	1	1,416	9	163,415	10	164,831
45	-	-	8	95,445	8	95,445
46	2	4,336	9	96,347	11	100,682
47	2	2,832	14	188,996	16	191,828
48	3	19,329	10	140,068	13	159,396
49	2	32,892	17	239,303	19	272,195
50	2	4,248	22	391,800	24	396,048
51	5	43,702	24	352,453	29	396,156
52	3	5,752	22	286,504	25	292,256
53	5	58,029	35	567,096	40	625,125
54	4	23,642	22	337,267	26	360,909
55	1	2,920	34	535,795	35	538,714
56	-	-	51	691,831	51	691,831
57	3	24,330	33	471,979	36	496,309
58	1	2,920	54	725,670	55	728,590
59	3	23,396	47	659,093	50	682,488
60	6	98,709	48	632,063	54	730,772
61	3	53,256	50	684,240	53	737,496
62	2	13,625	78	1,189,100	80	1,202,724
63	4	52,401	88	1,267,790	92	1,320,191
64	4	48,829	64	843,957	68	892,786
65	1	10,705	82	1,010,363	83	1,021,069
66	-	-	79	1,017,998	79	1,017,998
67	1	10,705	126	1,684,340	127	1,695,045
68	-	-	126	1,664,037	126	1,664,037
69	1	10,705	128	1,695,321	129	1,706,026
70	4	66,477	113	1,349,643	117	1,416,120
71	2	21,410	168	2,270,998	170	2,292,409
72	-	-	164	2,172,198	164	2,172,198



EXHIBIT II – 1c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 POLICE SURVIVORS AND BENEFICIARIES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
73	1	\$ 10,705	176	\$ 2,082,229	177	\$ 2,092,934
74	1	10,705	134	1,572,299	135	1,583,004
75	1	32,416	83	980,254	84	1,012,670
76	-	-	140	1,698,799	140	1,698,799
77	-	-	165	2,002,972	165	2,002,972
78	1	10,705	163	1,829,589	164	1,840,294
79	-	-	156	1,854,657	156	1,854,657
80	1	2,920	138	1,547,963	139	1,550,883
81	1	27,081	122	1,392,466	123	1,419,546
82	-	-	131	1,443,665	131	1,443,665
83	1	10,705	132	1,478,903	133	1,489,609
84	-	-	126	1,361,607	126	1,361,607
85	-	-	143	1,561,182	143	1,561,182
86	1	10,705	81	862,440	82	873,145
87	-	-	91	975,376	91	975,376
88	-	-	75	828,990	75	828,990
89	1	10,705	83	926,697	84	937,403
90	-	-	87	935,485	87	935,485
91	1	10,705	72	766,575	73	777,281
92	-	-	65	670,317	65	670,317
93	-	-	51	535,849	51	535,849
94	-	-	44	472,451	44	472,451
95	-	-	20	195,756	20	195,756
96	-	-	23	248,439	23	248,439
97	-	-	15	149,783	15	149,783
98	-	-	3	25,388	3	25,388
99	-	-	4	42,623	4	42,623
100	-	-	5	46,477	5	46,477
101	-	-	-	-	-	-
102	-	-	-	-	-	-
103	-	-	1	10,705	1	10,705
104	-	-	-	-	-	-
105	-	-	2	21,410	2	21,410
106	-	-	1	10,705	1	10,705
Total	227	\$ 1,408,467	4,397	\$ 52,636,754	4,624	\$ 54,045,222



EXHIBIT II – 2a

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 FIREFIGHTERS’ SERVICE RETIREES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
46	-	\$ -	-	\$ -	-	\$ -
47	-	-	-	-	-	-
48	7	250,447	-	-	7	250,447
49	23	1,153,167	1	25,600	24	1,178,767
50	24	1,153,888	1	45,353	25	1,199,242
51	30	1,381,685	-	-	30	1,381,685
52	30	1,409,586	1	36,461	31	1,446,048
53	57	2,573,126	1	46,863	58	2,619,989
54	74	3,489,722	2	100,164	76	3,589,887
55	111	5,179,745	2	87,961	113	5,267,707
56	175	8,747,828	7	322,784	182	9,070,613
57	185	9,218,621	9	469,496	194	9,688,117
58	223	11,813,960	5	257,903	228	12,071,863
59	267	14,324,271	10	492,134	277	14,816,405
60	270	14,922,717	7	340,571	277	15,263,288
61	281	15,474,964	7	402,316	288	15,877,281
62	300	17,124,013	6	340,957	306	17,464,970
63	309	17,543,580	2	89,152	311	17,632,732
64	305	17,417,407	2	117,660	307	17,535,067
65	320	17,971,274	5	245,628	325	18,216,902
66	306	17,248,595	1	43,527	307	17,292,121
67	295	16,409,965	5	263,006	300	16,672,971
68	263	14,717,763	2	92,178	265	14,809,941
69	276	15,624,996	1	29,679	277	15,654,675
70	254	13,921,620	2	92,969	256	14,014,589
71	223	12,155,602	1	54,506	224	12,210,108
72	217	11,913,869	1	43,499	218	11,957,368
73	262	13,448,881	-	-	262	13,448,881



EXHIBIT II – 2a

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Retirement Allowances Distributed by Age
FIREFIGHTERS' SERVICE RETIREES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
74	225	\$ 11,690,009	-	\$ -	225	\$ 11,690,009
75	136	7,095,261	2	92,532	138	7,187,793
76	171	8,571,769	-	-	171	8,571,769
77	175	8,534,795	-	-	175	8,534,795
78	181	8,894,409	-	-	181	8,894,409
79	142	6,907,150	-	-	142	6,907,150
80	138	6,520,022	-	-	138	6,520,022
81	109	4,907,380	-	-	109	4,907,380
82	105	4,637,719	-	-	105	4,637,719
83	80	3,889,905	-	-	80	3,889,905
84	81	3,275,634	-	-	81	3,275,634
85	78	3,198,064	-	-	78	3,198,064
86	64	2,498,605	-	-	64	2,498,605
87	49	1,753,750	-	-	49	1,753,750
88	43	1,365,054	-	-	43	1,365,054
89	51	1,734,145	-	-	51	1,734,145
90	42	1,423,112	-	-	42	1,423,112
91	34	1,052,420	-	-	34	1,052,420
92	31	902,304	-	-	31	902,304
93	21	610,257	-	-	21	610,257
94	14	419,870	-	-	14	419,870
95	9	261,099	-	-	9	261,099
96	7	184,495	-	-	7	184,495
97	4	101,666	-	-	4	101,666
98	1	22,733	-	-	1	22,733
99	1	27,654	-	-	1	27,654
Total	7,079	\$ 367,070,577	83	\$ 4,132,900	7,162	\$ 371,203,477



EXHIBIT II – 2b

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 FIREFIGHTERS’ DISABILITY RETIREES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
32 & Under	1	\$ 37,454	-	\$ -	1	\$ 37,454
33	1	45,521	-	-	1	45,521
34	1	37,025	-	-	1	37,025
35	2	53,649	-	-	2	53,649
36	2	90,551	-	-	2	90,551
37	1	29,886	-	-	1	29,886
38	3	82,457	-	-	3	82,457
39	6	713,835	3	67,342	9	781,177
40	2	50,441	1	42,169	3	92,610
41	3	112,739	2	31,980	5	144,720
42	8	223,302	-	-	8	223,302
43	11	418,526	1	34,640	12	453,166
44	5	153,283	2	40,703	7	193,986
45	10	388,086	-	-	10	388,086
46	22	908,342	2	90,003	24	998,345
47	19	766,370	-	-	19	766,370
48	21	815,050	2	60,313	23	875,363
49	36	1,509,432	3	68,053	39	1,577,485
50	45	2,831,914	1	45,411	46	2,877,324
51	29	1,359,181	7	249,447	36	1,608,627
52	33	1,625,730	3	167,265	36	1,792,995
53	46	1,831,761	6	689,022	52	2,520,783
54	39	1,852,813	4	122,882	43	1,975,695
55	49	2,021,584	6	266,902	55	2,288,486
56	64	2,987,952	8	312,700	72	3,300,652
57	48	2,094,507	3	129,930	51	2,224,437
58	54	2,495,804	7	255,808	61	2,751,612
59	63	2,749,917	4	166,128	67	2,916,045
60	61	3,048,165	5	207,898	66	3,256,064
61	60	2,964,840	2	122,929	62	3,087,769
62	68	3,350,195	7	256,622	75	3,606,817
63	69	3,348,459	11	411,133	80	3,759,592
64	86	4,139,690	4	124,162	90	4,263,852



EXHIBIT II – 2b

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 FIREFIGHTERS' DISABILITY RETIREES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
65	74	\$ 3,740,444	3	\$ 136,801	77	\$ 3,877,245
66	76	3,702,990	5	224,491	81	3,927,481
67	88	4,498,065	3	148,821	91	4,646,886
68	90	4,128,212	4	124,909	94	4,253,121
69	77	3,755,099	1	59,169	78	3,814,269
70	79	3,784,359	2	62,282	81	3,846,641
71	94	4,523,510	2	93,485	96	4,616,995
72	81	3,801,689	2	72,731	83	3,874,420
73	94	4,652,903	-	-	94	4,652,903
74	76	3,405,583	-	-	76	3,405,583
75	56	2,416,686	-	-	56	2,416,686
76	54	2,325,039	-	-	54	2,325,039
77	63	2,624,558	-	-	63	2,624,558
78	57	2,448,947	-	-	57	2,448,947
79	56	2,336,671	-	-	56	2,336,671
80	45	1,935,513	-	-	45	1,935,513
81	40	1,762,728	-	-	40	1,762,728
82	33	1,239,070	-	-	33	1,239,070
83	27	917,826	-	-	27	917,826
84	21	774,332	-	-	21	774,332
85	18	592,872	-	-	18	592,872
86	15	515,835	-	-	15	515,835
87	11	340,520	-	-	11	340,520
88	8	275,653	-	-	8	275,653
89	7	191,925	-	-	7	191,925
90	7	220,778	-	-	7	220,778
91	3	80,410	-	-	3	80,410
92	6	188,062	-	-	6	188,062
93	4	111,233	-	-	4	111,233
94	3	85,760	-	-	3	85,760
95	2	56,542	-	-	2	56,542
96	-	-	-	-	-	-
Total	2,333	\$ 106,572,275	116	\$ 4,886,131	2,449	\$ 111,458,406



EXHIBIT II – 2c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 FIREFIGHTERS’ SURVIVORS AND BENEFICIARIES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
1	-	\$ -	-	\$ -	-	\$ -
2	-	-	-	-	-	-
3	2	5,839	1	2,920	3	8,759
4	-	-	1	2,920	1	2,920
5	1	2,920	-	-	1	2,920
6	1	2,920	-	-	1	2,920
7	3	8,759	1	2,920	4	11,678
8	4	11,678	2	5,839	6	17,518
9	2	5,839	1	2,920	3	8,759
10	3	8,759	3	8,759	6	17,518
11	1	2,920	3	8,759	4	11,678
12	6	17,518	2	5,839	8	23,357
13	2	5,839	6	17,518	8	23,357
14	1	2,920	4	11,678	5	14,598
15	7	20,437	4	11,678	11	32,116
16	8	58,354	3	8,759	11	67,113
17	9	26,276	9	137,835	18	164,112
18	15	56,370	11	32,116	26	88,486
19	5	14,504	8	99,918	13	114,422
20	10	29,196	11	32,022	21	61,218
21	11	40,456	9	26,276	20	66,732
22	1	2,920	1	8,759	2	11,678
23	-	-	-	-	-	-
24	1	2,812	1	2,596	2	5,407
25	1	2,920	-	-	1	2,920
26	-	-	-	-	-	-
27	1	2,488	1	2,650	2	5,137
28	-	-	2	29,991	2	29,991
29	1	2,326	1	10,705	2	13,031
30	-	-	2	22,362	2	22,362
31	-	-	2	13,625	2	13,625
32	-	-	1	10,705	1	10,705
33	1	2,920	1	10,705	2	13,625
34	-	-	2	21,410	2	21,410
35	-	-	2	12,707	2	12,707
36	-	-	4	35,773	4	35,773



EXHIBIT II – 2c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 FIREFIGHTERS' SURVIVORS AND BENEFICIARIES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
37	2	\$ 9,684	4	\$ 27,250	6	\$ 36,934
38	1	2,920	4	47,858	5	50,778
39	-	-	2	21,410	2	21,410
40	1	1,894	2	21,410	3	23,304
41	1	1,800	1	10,705	2	12,505
42	-	-	2	51,710	2	51,710
43	1	1,416	3	32,116	4	33,532
44	1	2,920	2	21,410	3	24,330
45	1	1,416	7	95,794	8	97,210
46	-	-	1	10,705	1	10,705
47	-	-	9	234,930	9	234,930
48	2	7,080	17	279,250	19	286,330
49	4	7,168	11	196,992	15	204,160
50	1	2,920	11	220,700	12	223,619
51	1	2,920	12	188,649	13	191,568
52	4	25,446	11	147,841	15	173,287
53	3	7,255	18	401,993	21	409,248
54	1	2,920	20	250,628	21	253,548
55	-	-	24	323,373	24	323,373
56	1	2,920	29	472,033	30	474,953
57	1	2,920	27	460,395	28	463,315
58	1	2,920	32	495,027	33	497,947
59	1	2,920	20	280,721	21	283,641
60	1	2,920	28	374,542	29	377,462
61	4	54,031	31	475,643	35	529,674
62	-	-	39	609,230	39	609,230
63	-	-	55	802,258	55	802,258
64	1	2,920	39	553,422	40	556,341
65	1	2,920	50	760,971	51	763,890
66	-	-	50	617,049	50	617,049
67	-	-	44	530,949	44	530,949
68	-	-	67	936,736	67	936,736
69	-	-	68	988,222	68	988,222
70	-	-	64	790,468	64	790,468
71	-	-	76	984,998	76	984,998



EXHIBIT II – 2c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 FIREFIGHTERS' SURVIVORS AND BENEFICIARIES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
72	-	\$ -	89	\$ 1,116,187	89	\$ 1,116,187
73	1	2,920	98	1,221,827	99	1,224,747
74	-	-	99	1,257,601	99	1,257,601
75	2	21,410	78	937,956	80	959,367
76	1	2,920	93	1,119,681	94	1,122,601
77	-	-	94	1,109,068	94	1,109,068
78	-	-	107	1,236,745	107	1,236,745
79	-	-	114	1,282,130	114	1,282,130
80	-	-	123	1,403,010	123	1,403,010
81	-	-	124	1,377,012	124	1,377,012
82	-	-	84	902,053	84	902,053
83	-	-	109	1,214,619	109	1,214,619
84	-	-	87	953,275	87	953,275
85	-	-	100	1,062,779	100	1,062,779
86	-	-	102	1,114,526	102	1,114,526
87	-	-	112	1,200,901	112	1,200,901
88	-	-	86	926,444	86	926,444
89	-	-	67	690,500	67	690,500
90	-	-	115	1,227,895	115	1,227,895
91	-	-	64	705,230	64	705,230
92	-	-	70	942,755	70	942,755
93	-	-	66	700,691	66	700,691
94	-	-	47	467,485	47	467,485
95	-	-	43	436,293	43	436,293
96	-	-	22	238,038	22	238,038
97	-	-	16	192,763	16	192,763
98	-	-	9	109,367	9	109,367
99	-	-	9	80,162	9	80,162
100	-	-	2	21,410	2	21,410
101	-	-	5	53,526	5	53,526
102	-	-	1	10,705	1	10,705
103	-	-	2	21,410	2	21,410
104	-	-	-	-	-	-
105	-	-	-	-	-	-
106	-	-	-	-	-	-
Total	136	\$ 517,362	3,216	\$ 38,652,097	3,352	\$ 39,169,459



EXHIBIT III – 1a

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 TOTAL SERVICE RETIREES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
46	-	\$ -	-	\$ -	-	\$ -
47	-	-	-	-	-	-
48	21	911,857	3	178,275	24	1,090,132
49	64	3,081,518	6	262,860	70	3,344,378
50	86	4,149,597	10	520,335	96	4,669,932
51	110	5,129,720	7	342,650	117	5,472,370
52	128	5,412,623	15	722,526	143	6,135,150
53	155	7,038,782	14	652,053	169	7,690,835
54	237	10,768,882	14	640,128	251	11,409,010
55	300	14,317,550	22	1,016,615	322	15,334,165
56	414	20,144,460	29	1,368,298	443	21,512,758
57	423	20,837,730	34	1,580,643	457	22,418,373
58	480	25,247,016	30	1,484,824	510	26,731,840
59	526	27,810,123	46	2,385,578	572	30,195,700
60	497	27,413,507	30	1,548,616	527	28,962,123
61	544	30,203,105	32	1,823,724	576	32,026,829
62	577	32,587,757	44	2,431,104	621	35,018,861
63	611	34,257,850	37	1,817,368	648	36,075,219
64	654	36,740,461	40	2,135,826	694	38,876,287
65	680	38,007,613	35	1,965,651	715	39,973,264
66	669	37,626,552	38	2,056,208	707	39,682,760
67	614	34,088,328	31	1,668,178	645	35,756,506
68	592	32,790,422	28	1,539,090	620	34,329,513
69	611	34,144,496	22	1,205,853	633	35,350,349
70	587	31,914,049	19	1,006,569	606	32,920,618
71	547	29,916,243	18	928,926	565	30,845,169
72	567	31,544,596	13	703,411	580	32,248,006
73	654	35,193,898	15	868,567	669	36,062,465



EXHIBIT III – 1a

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 TOTAL SERVICE RETIREES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
74	550	\$ 28,518,609	4	\$ 219,341	554	\$ 28,737,950
75	368	19,147,078	12	601,650	380	19,748,728
76	395	20,090,962	8	444,994	403	20,535,956
77	401	19,790,657	2	71,486	403	19,862,142
78	408	19,850,947	4	181,737	412	20,032,684
79	352	16,701,375	3	156,754	355	16,858,129
80	289	13,058,785	3	114,197	292	13,172,982
81	238	10,373,087	-	-	238	10,373,087
82	227	9,643,130	-	-	227	9,643,130
83	182	8,127,079	-	-	182	8,127,079
84	154	6,406,055	2	66,564	156	6,472,618
85	154	6,161,760	1	42,319	155	6,204,079
86	122	4,660,023	-	-	122	4,660,023
87	111	4,069,371	2	40,623	113	4,109,994
88	85	2,773,552	3	81,064	88	2,854,615
89	80	2,648,871	-	-	80	2,648,871
90	67	2,328,808	-	-	67	2,328,808
91	54	1,681,559	-	-	54	1,681,559
92	55	1,638,013	-	-	55	1,638,013
93	36	1,062,973	-	-	36	1,062,973
94	30	852,541	-	-	30	852,541
95	19	573,780	-	-	19	573,780
96	15	387,911	-	-	15	387,911
97	7	172,905	-	-	7	172,905
98	2	46,106	-	-	2	46,106
99	7	177,780	-	-	7	177,780
Total	15,756	\$ 812,222,449	676	\$ 34,874,604	16,432	\$ 847,097,053



EXHIBIT III – 1b

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 TOTAL DISABILITY RETIREES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
32 & Under	2	\$ 64,566	-	\$ -	2	\$ 64,566
33	1	45,521	-	-	1	45,521
34	1	37,025	-	-	1	37,025
35	5	165,512	-	-	5	165,512
36	4	133,673	-	-	4	133,673
37	3	68,536	1	33,188	4	101,724
38	8	223,267	3	101,134	11	324,401
39	10	840,066	4	102,371	14	942,437
40	9	304,745	3	80,441	12	385,186
41	14	411,857	5	92,534	19	504,391
42	19	583,769	2	65,294	21	649,062
43	24	937,594	5	196,180	29	1,133,774
44	20	634,290	5	134,050	25	768,340
45	34	1,307,930	10	336,481	44	1,644,411
46	56	2,079,308	7	270,138	63	2,349,446
47	45	1,771,074	13	455,417	58	2,226,491
48	65	2,541,309	13	386,809	78	2,928,118
49	90	3,763,302	14	511,434	104	4,274,736
50	109	5,441,792	21	856,355	130	6,298,147
51	86	3,488,402	22	825,165	108	4,313,567
52	112	5,024,348	23	937,472	135	5,961,820
53	135	5,538,537	18	1,100,144	153	6,638,681
54	115	4,989,616	20	720,876	135	5,710,492
55	131	5,716,781	27	1,099,214	158	6,815,995
56	150	6,600,711	33	1,258,900	183	7,859,610
57	112	4,888,587	22	985,612	134	5,874,199
58	112	5,206,861	26	1,042,847	138	6,249,708
59	139	6,147,933	20	804,266	159	6,952,199
60	133	6,446,907	15	684,321	148	7,131,228
61	124	6,007,477	14	665,417	138	6,672,894
62	145	6,966,297	26	1,162,421	171	8,128,718
63	173	8,476,381	38	1,656,016	211	10,132,397
64	158	7,456,158	31	1,227,523	189	8,683,681



EXHIBIT III – 1b

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 TOTAL DISABILITY RETIREES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
65	149	\$ 7,116,801	26	\$ 1,150,305	175	\$ 8,267,106
66	183	8,782,651	22	852,657	205	9,635,308
67	182	8,967,317	28	1,276,452	210	10,243,770
68	191	8,742,226	22	957,814	213	9,700,040
69	188	8,508,682	11	533,491	199	9,042,173
70	175	7,918,538	17	712,985	192	8,631,522
71	189	8,575,484	19	811,545	208	9,387,030
72	182	8,248,423	13	579,115	195	8,827,539
73	233	10,659,893	9	316,690	242	10,976,583
74	180	7,735,630	10	389,605	190	8,125,235
75	136	5,861,222	2	71,343	138	5,932,566
76	118	4,922,105	4	164,067	122	5,086,172
77	151	6,061,161	1	36,987	152	6,098,149
78	118	4,598,125	3	90,369	121	4,688,494
79	106	4,245,308	1	42,825	107	4,288,133
80	86	3,549,301	-	-	86	3,549,301
81	84	3,308,854	-	-	84	3,308,854
82	69	2,401,752	2	112,294	71	2,514,046
83	57	2,005,414	-	-	57	2,005,414
84	42	1,510,335	-	-	42	1,510,335
85	42	1,328,378	-	-	42	1,328,378
86	29	962,513	-	-	29	962,513
87	16	457,186	-	-	16	457,186
88	14	422,179	-	-	14	422,179
89	15	399,357	-	-	15	399,357
90	18	530,600	-	-	18	530,600
91	7	173,185	-	-	7	173,185
92	9	275,968	-	-	9	275,968
93	7	191,702	-	-	7	191,702
94	7	163,983	-	-	7	163,983
95	2	56,542	-	-	2	56,542
96	2	56,442	-	-	2	56,442
97	1	20,362	-	-	1	20,362
98	1	18,480	-	-	1	18,480
Total	5,333	\$ 233,086,227	631	\$ 25,890,566	5,964	\$ 258,976,793



EXHIBIT III – 1c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Retirement Allowances Distributed by Age
TOTAL SURVIVORS AND BENEFICIARIES

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
1	-	\$ -	1	\$ 2,920	1	\$ 2,920
2	-	-	2	11,177	2	11,177
3	3	8,759	1	2,920	4	11,678
4	1	2,920	1	2,920	2	5,839
5	2	5,839	-	-	2	5,839
6	2	5,839	2	5,839	4	11,678
7	3	8,759	3	8,759	6	17,518
8	10	29,196	2	5,839	12	35,035
9	4	11,678	2	5,839	6	17,518
10	4	11,678	7	24,588	11	36,266
11	2	5,839	4	11,678	6	17,518
12	11	32,116	8	27,507	19	59,623
13	11	32,116	9	26,276	20	58,392
14	12	35,035	12	35,035	24	70,070
15	14	40,874	12	35,035	26	75,910
16	16	81,711	10	29,196	26	110,907
17	20	58,392	17	161,192	37	219,584
18	23	97,885	23	67,151	46	165,036
19	20	103,826	17	126,194	37	230,021
20	23	67,151	29	84,388	52	151,538
21	24	78,411	19	55,325	43	133,736
22	4	25,414	2	17,226	6	42,640
23	1	22,493	1	14,328	2	36,821
24	6	16,438	2	5,191	8	21,629
25	1	2,920	1	2,704	2	5,623
26	1	2,664	-	-	1	2,664
27	4	10,505	1	2,650	5	13,154
28	1	2,866	2	29,991	3	32,856
29	2	5,245	2	21,410	4	26,656
30	4	10,289	2	22,362	6	32,651
31	2	5,083	3	16,544	5	21,628
32	1	2,326	1	10,705	2	13,031
33	1	2,920	3	24,330	4	27,250
34	4	74,455	5	53,526	9	127,981
35	1	2,758	6	36,749	7	39,507
36	3	7,873	8	104,452	11	112,325



EXHIBIT III – 1c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
Number and Annual Retirement Allowances Distributed by Age
TOTAL SURVIVORS AND BENEFICIARIES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
37	2	\$ 9,684	5	\$ 37,955	7	\$ 47,639
38	2	5,839	7	79,974	9	85,813
39	1	14,140	4	42,821	5	56,961
40	4	36,238	6	48,660	10	84,898
41	3	7,639	2	21,410	5	29,050
42	-	-	4	73,120	4	73,120
43	2	4,336	9	96,829	11	101,165
44	2	4,336	11	184,826	13	189,161
45	1	1,416	15	191,239	16	192,655
46	2	4,336	10	107,052	12	111,388
47	2	2,832	23	423,926	25	426,758
48	5	26,409	27	419,318	32	445,727
49	6	40,060	28	436,295	34	476,355
50	3	7,168	33	612,500	36	619,667
51	6	46,622	36	541,102	42	587,724
52	7	31,198	33	434,345	40	465,542
53	8	65,284	53	969,089	61	1,034,373
54	5	26,562	42	587,895	47	614,457
55	1	2,920	58	859,168	59	862,087
56	1	2,920	80	1,163,864	81	1,166,784
57	4	27,250	60	932,375	64	959,624
58	2	5,839	86	1,220,697	88	1,226,537
59	4	26,315	67	939,814	71	966,129
60	7	101,628	76	1,006,605	83	1,108,234
61	7	107,287	81	1,159,882	88	1,267,169
62	2	13,625	117	1,798,330	119	1,811,954
63	4	52,401	143	2,070,048	147	2,122,449
64	5	51,749	103	1,397,379	108	1,449,128
65	2	13,625	132	1,771,334	134	1,784,959
66	-	-	129	1,635,047	129	1,635,047
67	1	10,705	170	2,215,289	171	2,225,995
68	-	-	193	2,600,773	193	2,600,773
69	1	10,705	196	2,683,542	197	2,694,248
70	4	66,477	177	2,140,111	181	2,206,589
71	2	21,410	244	3,255,996	246	3,277,406
72	-	-	253	3,288,385	253	3,288,385



EXHIBIT III – 1c

RETIREE AND BENEFICIARY MEMBERSHIP DATA AS OF JANUARY 1, 2021
 Number and Annual Retirement Allowances Distributed by Age
 TOTAL SURVIVORS AND BENEFICIARIES (continued)

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
73	2	\$ 13,625	274	\$ 3,304,057	276	\$ 3,317,681
74	1	10,705	233	2,829,900	234	2,840,605
75	3	53,827	161	1,918,210	164	1,972,037
76	1	2,920	233	2,818,480	234	2,821,400
77	-	-	259	3,112,040	259	3,112,040
78	1	10,705	270	3,066,334	271	3,077,040
79	-	-	270	3,136,787	270	3,136,787
80	1	2,920	261	2,950,973	262	2,953,893
81	1	27,081	246	2,769,478	247	2,796,558
82	-	-	215	2,345,718	215	2,345,718
83	1	10,705	241	2,693,523	242	2,704,228
84	-	-	213	2,314,882	213	2,314,882
85	-	-	243	2,623,961	243	2,623,961
86	1	10,705	183	1,976,966	184	1,987,671
87	-	-	203	2,176,277	203	2,176,277
88	-	-	161	1,755,434	161	1,755,434
89	1	10,705	150	1,617,197	151	1,627,903
90	-	-	202	2,163,380	202	2,163,380
91	1	10,705	136	1,471,806	137	1,482,511
92	-	-	135	1,613,071	135	1,613,071
93	-	-	117	1,236,539	117	1,236,539
94	-	-	91	939,936	91	939,936
95	-	-	63	632,050	63	632,050
96	-	-	45	486,477	45	486,477
97	-	-	31	342,547	31	342,547
98	-	-	12	134,755	12	134,755
99	-	-	13	122,785	13	122,785
100	-	-	7	67,888	7	67,888
101	-	-	5	53,526	5	53,526
102	-	-	1	10,705	1	10,705
103	-	-	3	32,116	3	32,116
104	-	-	-	-	-	-
105	-	-	2	21,410	2	21,410
106	-	-	1	10,705	1	10,705
Total	363	\$ 1,925,829	7,613	\$ 91,288,851	7,976	\$ 93,214,681