



Consolidated Police and Firemen's Pension Fund of New Jersey

Actuarial Valuation Report as of July 1, 2022

Produced by Cheiron

February 2023

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LETTER OF TRANSMITTAL

February 3, 2023

Board of Trustees
Consolidated Police and Firemen's Pension Fund of New Jersey
State of New Jersey
Department of the Treasury
Division of Pension and Benefits, CN 295
Trenton, New Jersey 08625-0295

Dear Board Members:

At your request, we have performed the July 1, 2022 Actuarial Valuation of the Consolidated Police and Firemen's Pension Fund of New Jersey (CPFPPF or Fund).

In preparing our report, we relied on information (some oral and some written) supplied by the Division of Pensions and Benefits. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality.

The results of this report are only applicable to the Fund's contribution for Fiscal Year Ending 2024. Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

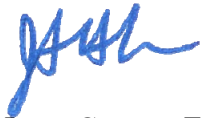
The actuarial assumptions are based on the 2022 Experience Study dated November 9, 2022 and approved by the Division of Pensions and Benefits (DPB). The assumptions reflect our understanding of the likely future experience of the Fund and each of the assumptions represents a best estimate of future experience.

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

This actuarial valuation report was prepared exclusively for the Consolidated Police and Firemen's Pension Fund of New Jersey for the purposes described herein and for the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Sincerely,

Cheiron



Janet Cranna, FSA, FCA, MAAA, EA
Principal Consulting Actuary



Anu Patel, FSA, MAAA, EA
Principal Consulting Actuary



Jonathan B. Chipko, FSA, MAAA, EA
Consulting Actuary

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION I – BOARD SUMMARY

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

- The financial condition of the Consolidated Police and Firemen's Pension Fund of New Jersey,
- Past trends and risks to the Fund's financial condition, and
- The State's Pension Contribution for Fiscal Year Ending (FYE) 2024.

In this Section we present a summary of the principal valuation results. This includes the basis upon which the July 1, 2022 valuation was completed and an examination of the current financial condition of the Fund. In addition, we present a review of the key historical trends.

This report does not include information required under GASB Statement No. 67 which was provided in a separate report.

Results shown in this report for years prior to July 1, 2018 are based on the prior actuary's valuation reports.

Valuation Basis

The July 1, 2022 valuation results are based on the same actuarial methods as used in the July 1, 2021 valuation. The July 1, 2022 valuation results are also based on the recommended assumptions shown in the 2022 Experience Study dated November 9, 2022 and approved by the Division of Pensions and Benefits. The assumptions reflect our understanding of the likely future experience of the Fund and each of the assumptions represents a best estimate of future experience.

Beginning with the July 1, 2021 valuation, the results include assets and liabilities associated with cost-of-living adjustments. The cost-of-living adjustments were previously separately funded on a pay-as-you-go basis through the Pension Adjustment Fund, which was established pursuant to Chapter 143, P.L. 1958. In FYE 2021, a portion of the Pension Adjustment Fund assets related to CPFPPF was transferred into the CPFPPF and cost-of-living adjustments were paid directly from the CPFPPF, instead of through annual contributions from the Pension Adjustment Fund. Effective with FYE 2023, any ongoing contributions required to fund the cost-of-living adjustments are included with the Statutory Contribution.

This report was prepared using census data and financial information as of the valuation date, July 1, 2022. Events following that date are not, and should not be, reflected in this report.

The valuation reflects a plan closed to new entrants since 1944 and at this time only covers beneficiaries. All risks and assumptions are a reflection of the nature of a wasting trust to meet the obligation to these remaining beneficiaries.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION I – BOARD SUMMARY

Key Results

Table I-1 below summarizes the key results of the valuation with respect to the Fund's membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior year.

Table I-1				
Consolidated Police and Firemen's Pension Fund				
Summary of Key Valuation Results				
Valuation Date	July 1, 2022	July 1, 2021	%	
Fiscal Year Ending (FYE)	2024	2023	Change	
Member Data				
Actives	0	0	N/A	
Deferred Vested Members	0	0	N/A	
Retirees and Beneficiaries	24	33	-27.3%	
Total Members	24	33	-27.3%	
Annual Retirement Allowances in Pay	\$ 407,282	\$ 624,143	-34.7%	
Assets and Liabilities				
Actuarial Liability	\$ 1,916,246	\$ 2,845,637	-32.7%	
Actuarial Value of Assets (AVA) ¹	2,748,796	2,260,738	21.6%	
Unfunded Actuarial Liability/(Surplus)	\$ (832,550)	\$ 584,899	-242.3%	
Funded Ratio	143.4%	79.4%	64.0%	
Contribution Amounts				
Total Statutory Contribution for FYE	\$ 0	\$ 596,597	-100.0%	

¹ Includes discounted State appropriations receivable;
Actuarial Value of Assets is equal to Market Value of Assets.

The key results of the July 1, 2022 actuarial valuation are as follows:

- The Statutory Contribution decreased from \$597 thousand in FYE 2023 to \$0 for FYE 2024.
- The funded ratio, the ratio of the actuarial value of assets over liabilities, increased from 79.4% as of July 1, 2021 to 143.4% as of July 1, 2022.
- The unfunded actuarial liability/(surplus) decreased from a liability of \$585 thousand as of July 1, 2021 to a surplus of \$(833) thousand as of July 1, 2022.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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SECTION I – BOARD SUMMARY

- There was a total actuarial experience gain of \$435 thousand, consisting of a liability gain of \$475 thousand offset by an asset loss of \$40 thousand. The liability gain is primarily driven by higher than expected mortality.
- The updated mortality assumption decreased the actuarial liability by \$34 thousand.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

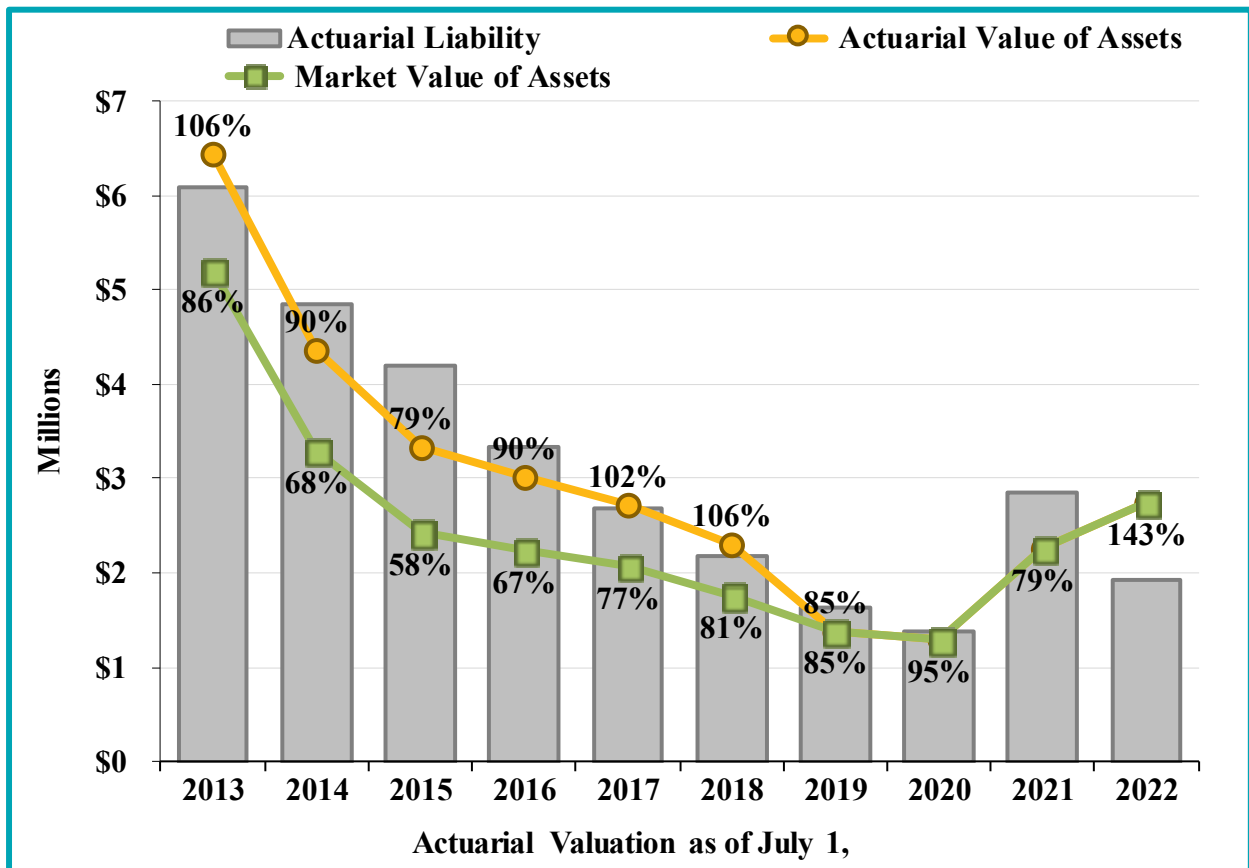
SECTION I – BOARD SUMMARY

Recent Trends

It is important to take a step back from these latest results and view them in the context of the Fund's recent history. Below, we present a series of graphs which display key factors in the valuations of the last 10 years. Additionally, in Appendix D we provide the numerical values of the historical unfunded actuarial liability, funded ratio, and contribution amounts.

Assets and Liabilities

The gray bars represent the Actuarial Liability (AL). The green line is the Market Value of Assets (MVA) and the gold line is the Actuarial Value of Assets (AVA). The Fund's funded ratio (ratio of assets to liabilities) is shown next to the lines. Effective with the July 1, 2019 valuation, the AVA was set equal to the MVA. The assets and liabilities have been decreasing every year except for 2021. This is to be expected because the Fund only has beneficiaries. The increase in both assets and liabilities in 2021 is due to the method change of reflecting the assets and liabilities associated with the cost-of-living adjustments in the valuation.



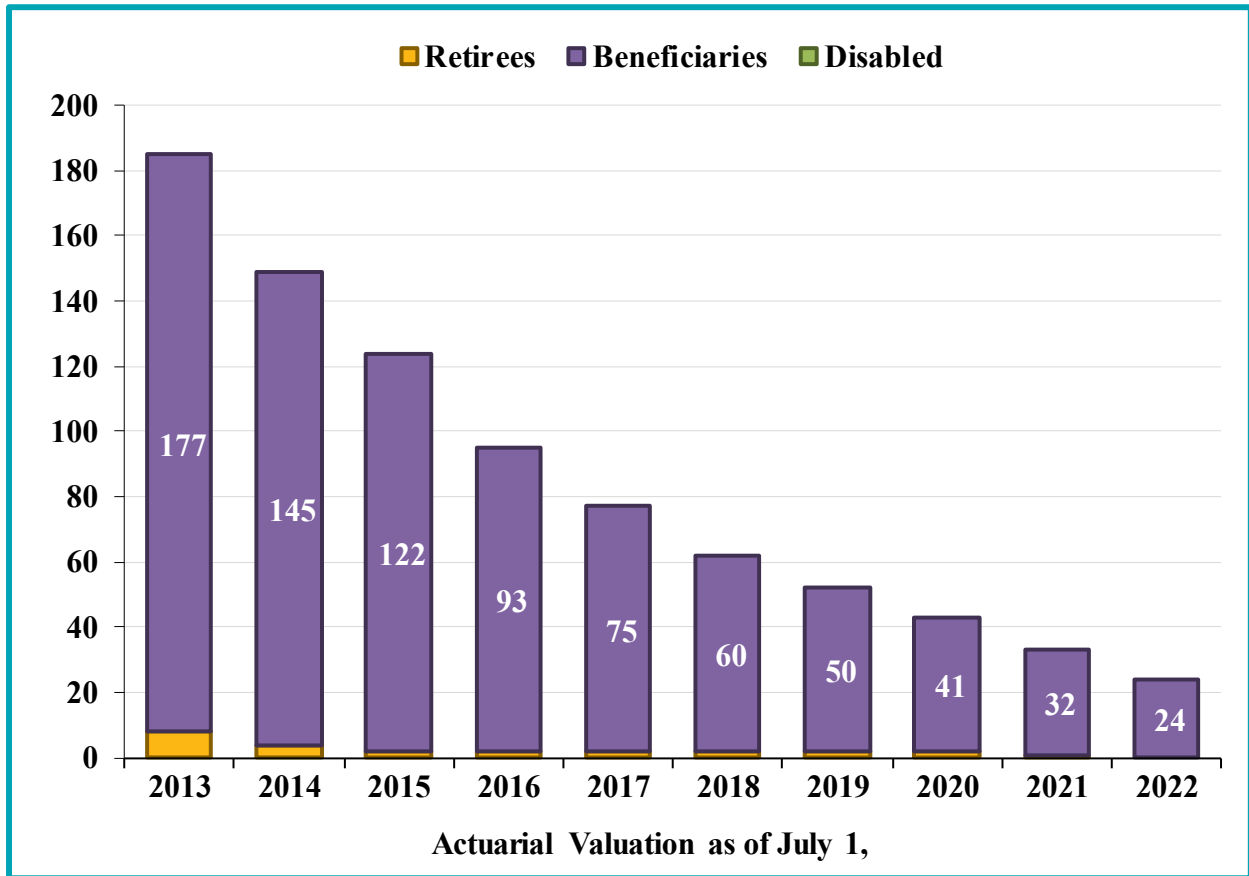
The information above is based on the final actuarial valuation reports for the given years. The amounts do not reflect differences between the discounted State appropriations receivable and the actual State contribution amounts that became known after the issuance of the reports.

CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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SECTION I – BOARD SUMMARY

Membership Trends

The graph below shows the membership counts of the Fund for the last ten valuations. The numbers that are shown in the middle of the bars represent the number of beneficiaries. As of 2022, there are no retirees and 24 beneficiaries remaining.



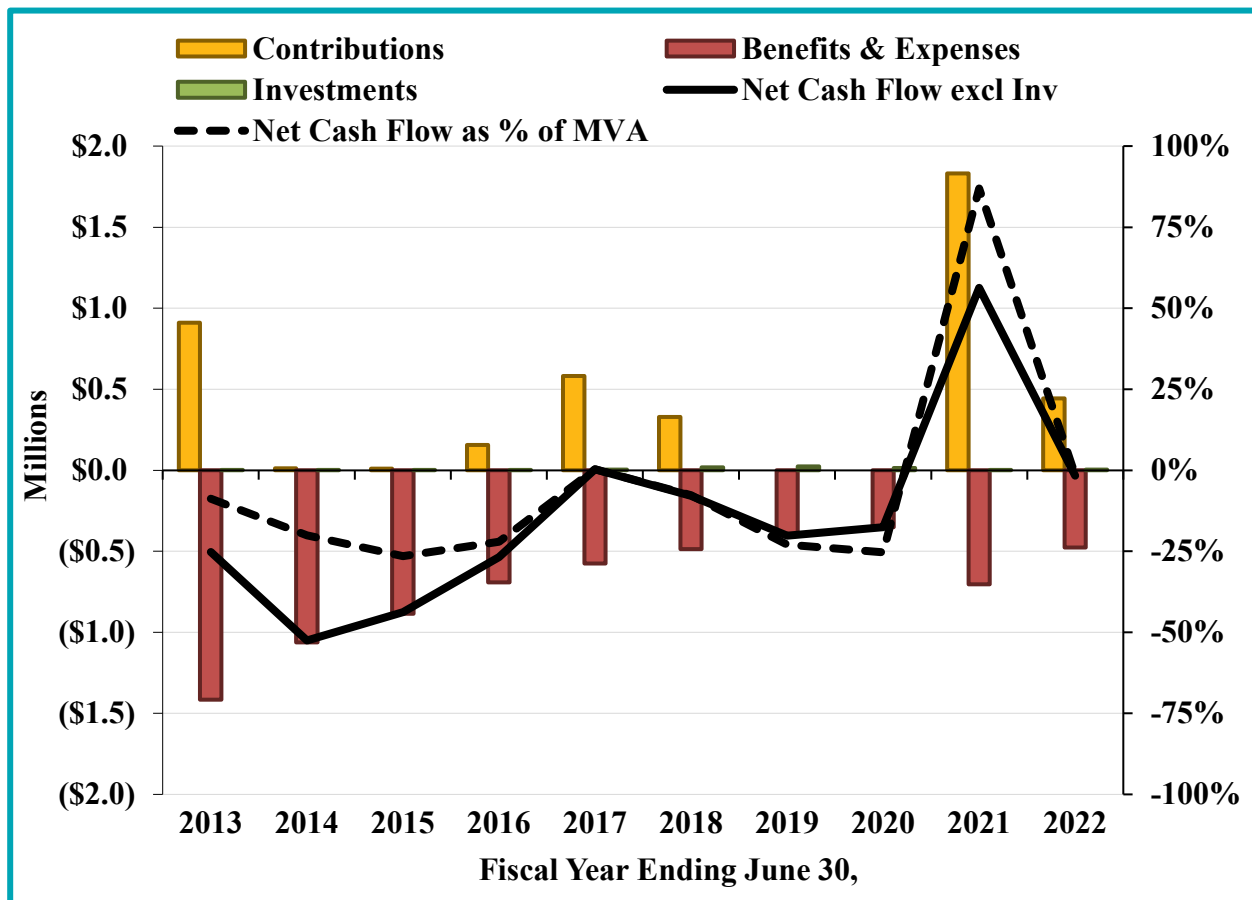
**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION I – BOARD SUMMARY

Cash Flows

The following graph shows the Fund net cash flow (contributions less benefit payments and expenses) at the end of each valuation year. The net cash flow excluding investments has been negative every year except for 2021. This is an expected result of a wasting trust dedicated to pay out benefits the remaining annuitants. The black dotted line shows the net cash flow as a percent of the market value of assets and goes with the axis on the right. A major implication of a negative cash flow is that the difference each year must be paid out of the principal assets, meaning there will be less to invest during periods of favorable investment experience. Given the conservative nature of the asset allocation, this is not the typical risk.

As expected, the benefits and expenses have decreased during this period as the membership declines. The fluctuation in the net cash flow is a result of the varying contributions. Currently the unfunded actuarial liability is amortized over one year resulting in cost volatility. In FYE 2021, the Pension Adjustment Fund was transferred into CPFPPF and cost-of-living adjustments were paid directly out of the CPFPPF, instead of through annual contributions from the Pension Adjustment Fund. This resulted in a large positive net cash flow for FYE 2021.



**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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SECTION II – IDENTIFICATION AND ASSESSMENT OF RISK

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

Identification of Risks

The fundamental risk to a pension fund is that the contributions needed to pay the benefits become unaffordable. Due to the size of the Fund relative to the State, we do not believe there is a material risk that the benefits become unaffordable.

CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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SECTION III – ASSETS

The Fund uses the market value of assets for funding. The market value represents the value of the assets if they were liquidated on the valuation date.

On the following pages, we present detailed information on the Fund's assets:

- Disclosure of assets at June 30, 2021 and June 30, 2022,
- Statement of cash flows during the year, and
- Disclosure of investment performance for the year.

Disclosure

The market value of assets represents a “snap-shot” value as of the last day of the fiscal year that provides the principal basis for measuring financial performance from one year to the next. Table III-1 on the following page presents the market value as of June 30, 2021 and June 30, 2022. Table III-2 presents the Fund's net cash flows from June 30, 2021 to June 30, 2022. Table III-3 shows the historical asset returns for the Fund for the past ten years.

For this Fund, the actuarial value of assets is equal to the market value of assets.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION III – ASSETS

Table III-1		
Statement of Assets at Market Value		
	June 30, 2022	June 30, 2021
Assets		
Cash	\$ 197,388	\$ 50,990
Cash Management Fund	1,855,804	2,038,584
Accrued Interest on Investments	3	3
Administrative Expenses Receivable	5,955	6,734
Employers' Contributions Receivable - Pension Adjustment and Local	155,413	153,049
Other Accounts Receivable	0	8,352
Total Assets	\$ 2,214,563	\$ 2,257,712
Liabilities		
Pension Payroll Payable	\$ (17,950)	\$ (25,647)
Pension Adjustment Payroll Payable	(32,787)	(42,267)
Withholdings Payable	(904)	(1,798)
Administrative Expense Payable	(3,394)	(2,535)
Other Accounts Payable	0	0
Total Liabilities	\$ (55,035)	\$ (72,247)
Preliminary Market Value of Assets	\$ 2,159,528	\$ 2,185,465
Discounted State Appropriations Receivable	589,268	75,273
Market Value of Assets	\$ 2,748,796	\$ 2,260,738

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION III – ASSETS

Fund Cash Flows from June 30, 2021 to June 30, 2022

Table III-2	
Changes in Market Values for FYE June 30, 2022	
Additions	
Contributions	
State Appropriations	\$ 76,000
Employer Contribution - Local	368,072
Administrative Revenue - Local	2,451
Net Investment Income	4,203
Total Additions	\$ 450,726
Deductions	
Retirement Allowances	\$ 178,095
Benefit Expense - Pension Adjustment	295,342
Miscellaneous Expense	0
Administrative Expense	3,226
Total Deductions	\$ 476,663
Net Increase/(Decrease)	\$ (25,937)
Preliminary Market Value of Assets Beginning of Year	\$ 2,185,465
Preliminary Market Value of Assets End of Year	\$ 2,159,528
Discounted State Appropriations Receivable	589,268
Market Value of Assets End of Year	\$ 2,748,796
Approximate Return	0.19%

Actuarial Value of Assets

For this Fund, the actuarial value of assets equals the market value of assets.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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SECTION III – ASSETS

Investment Performance

The market value of assets rate of return was 0.19% for the year ending June 30, 2022. This is compared to an assumed return of 2.00% for the same period. Table III-3 shows the historical asset returns and the investment return assumption for the last ten years.

The prior actuary did not calculate a market value return prior to 2017.

Table III-3 Annual Rates of Return			
Year Ended June 30	Investment Return		
	Assumption	Market Value	Actuarial Value
2013	2.00%		-3.24%
2014	2.00%		-3.25%
2015	2.00%		-3.81%
2016	2.00%		-4.36%
2017	2.00%	0.34%	-4.35%
2018	2.00%	0.97%	-3.64%
2019	2.00%	1.57%	1.57%
2020	2.00%	1.16%	N/A
2021	2.00%	0.16%	N/A
2022	2.00%	0.19%	N/A
5-Year Compound Average		0.81%	N/A

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION IV – LIABILITIES

In this section, we present detailed information on the liabilities of the Fund, including:

- Disclosure of the liabilities at July 1, 2021 and July 1, 2022, and
- The development of the actuarial gain and loss.

Disclosure

The actuarial liability is used for determining employer contributions. For CPFPPF, the funding method employed is the Projected Unit Credit (PUC) Actuarial Cost Method. Under this funding method, the actuarial liability is calculated as the actuarial present value of the projected benefits allocated to periods prior to the valuation year.

This liability is determined for funding purposes and is not appropriate for measuring the cost of settling plan liabilities by purchasing annuities or paying lump sums.

Cost-of-living adjustments are granted to retired members and their eligible survivors in accordance with the Pension Adjustment Act. The additional liability due to the pension adjustment was previously paid by the Pension Adjustment Fund, which was established pursuant to Chapter 143, P.L. 1958. Chapter 78, P.L. 2011 suspended further cost-of-living adjustments for current and future retirees and beneficiaries until reactivated as permitted by law. In FYE 2021, the Pension Adjustment Fund was transferred into the CPFPPF and cost-of-living adjustments were paid directly from the CPFPPF, instead of through annual contributions from the Pension Adjustment Fund. As a result, beginning with the July 1, 2021 valuation, the actuarial liability reflects the present value of the cost-of-living adjustments based on the census data provided by the DPB.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION IV – LIABILITIES

Table IV-1 shows the actuarial liability, funded ratio, and unfunded actuarial liability as of July 1, 2022, and July 1, 2021 for the Fund.

Table IV-1 Actuarial Liabilities		
	July 1, 2022	July 1, 2021
Actuarial Liability		
Actives	\$ 0	\$ 0
Deferred Vested	0	0
Retirees	0	160,003
Disabled	0	0
Beneficiaries	1,916,246	2,685,634
Total	\$ 1,916,246	\$ 2,845,637
Actuarial Value of Assets	\$ 2,748,796	\$ 2,260,738
Unfunded Actuarial Liability/(Surplus)	\$ (832,550)	\$ 584,899
Funded Ratio	143.4%	79.4%

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

SECTION IV – LIABILITIES

Table IV-2 presents the change in the actuarial liability, actuarial assets, and unfunded actuarial liability during the plan year. In general, the unfunded actuarial liability (UAL) of any retirement system is expected to change at each subsequent valuation for a variety of reasons. In each valuation, we report on those elements of change in the UAL which are of particular significance, potentially affecting the long-term financial outlook of the Fund.

Table IV-2			
Development of 2022 Experience (Gain)/Loss			
	Actuarial Liability	Actuarial Value of Assets	Unfunded Actuarial Liability
1. Value as of July 1, 2021	\$ 2,845,637	\$ (2,260,738)	\$ 584,899
2. Additions			
a.) Normal Cost	\$ 0	\$ 0	\$ 0
b.) Statutory State Contributions	0	(596,597)	(596,597)
c.) Exp. Member Contributions	0	0	0
3. Decreases			
a.) Benefit Payments	\$ (473,437)	\$ 473,437	\$ 0
b.) Exp. Admin. Expenses	0	0	0
4. Expected Interest	\$ 52,202	\$ (40,504)	\$ 11,698
5. Expected Value as of July 1, 2022: (1+2+3+4)	\$ 2,424,402	\$ (2,424,402)	\$ 0
6. Impact of:			
a.) Appropriation Adjustment ¹	\$ 0	\$ (371,523)	\$ (371,523)
b.) Contribution Timing	0	7,329	7,329
c.) Actual Member Contributions	0	0	0
d.) Change in Methods/Assumptions	(33,532)	0	(33,532)
e.) Change in Benefits	0	0	0
7. Expected Value after Changes: (5+6)	\$ 2,390,870	\$ (2,788,596)	\$ (397,726)
8. Actual Value as of July 1, 2022	\$ 1,916,246	\$ (2,748,796)	\$ (832,550)
9. Actuarial (Gain)/Loss: (8-7)	\$ (474,624)	\$ 39,800	\$ (434,824)

¹ Includes impact of Employer Contribution - Local

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SECTION IV – LIABILITIES

Table IV-3 shows the components of the actuarial (gain)/loss for the Fund as of July 1, 2022 and July 1, 2021.

Table IV-3 Actuarial (Gain)/Loss Analysis		
Components	July 1, 2022	July 1, 2021
Actuarial Value of Assets		
Investment Return	\$ 39,018	\$ 40,512
Administrative Expenses	782	(695)
Total	\$ 39,800	\$ 39,817
Actuarial Liability		
Inactive Demographic Experience	\$ (474,624)	\$ (121,005)
Actuarial (Gain)/Loss	\$ (434,824)	\$ (81,188)

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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SECTION V - CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funded status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

Under the current funding policy, the State funding requirement contains two components: the employer normal cost and an amortization of the unfunded actuarial liability. Since CPFPPF does not have any active members, there is no normal cost component. The funding methodology prescribed by NJ State Statute does not include a cost component for administrative expenses, and therefore administrative expenses are implicitly covered by the investment rate of return assumption.

For CPFPPF, the funding method employed is the Projected Unit Credit (PUC) Actuarial Cost Method. Under this funding method, the actuarial liability is calculated as the actuarial present value of the projected benefits allocated to periods prior to the valuation year. The unfunded actuarial liability is the actuarial liability on the valuation date less the actuarial value of assets.

The unfunded actuarial liability as of June 30, 1990 was amortized over a closed period of nine years. We have assumed that any future unfunded actuarial liability will be amortized over one year as all members are inactive and receiving benefits.

Table V-1 shows the development of the Statutory Pension Contribution for the current and prior year.

Table V-1 Development of Statutory Pension Contribution				
Valuation Date Fiscal Year Ending	July 1, 2022 2024		July 1, 2021 2023	
1. Actuarial Liability	\$	1,916,246	\$	2,845,637
2. Actuarial Value of Assets		<u>2,748,796</u>		<u>2,260,738</u>
3. Unfunded Actuarial Liability: (1-2)	\$	(832,550)	\$	584,899
4. Amortization Period (years)		1		1
5. Total Statutory Pension Contribution as of Beginning of Fiscal Year: (3 x 1.02)	\$	0	\$	596,597

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

The data for this valuation was provided by the New Jersey Division of Pensions and Benefits as of July 1, 2022. Cheiron did not audit any of the data. However, we did perform an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23, Data Quality. The following is a list of data charts contained in this section:

- A-1 and A-2: Inactive Member Data by Age
- A-3: Reconciliation of Plan Membership

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

APPENDIX A – MEMBERSHIP INFORMATION

Table A-1 Counts by Age As of July 1, 2022		
Attained Age	Status Beneficiary	Total
Under 45	0	0
45-49	0	0
50-54	0	0
55-59	0	0
60-64	0	0
65-69	1	1
70-74	2	2
75-79	2	2
80-84	1	1
85 & Over	18	18
Total	24	24

Table A-2 Annual Retirement Allowances by Age As of July 1, 2022		
Attained Age	Status Beneficiary	Total
Under 45	\$ 0	\$ 0
45-49	0	0
50-54	0	0
55-59	0	0
60-64	0	0
65-69	7,678	7,678
70-74	21,202	21,202
75-79	10,342	10,342
80-84	15,526	15,526
85 & Over	352,535	352,535
Total	\$ 407,282	\$ 407,282

CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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APPENDIX A – MEMBERSHIP INFORMATION

Table A-3			
Reconciliation of Plan Membership from July 1, 2021 to July 1, 2022			
	Retired	Beneficiaries	Total
1. July 1, 2021	1	32	33
2. Reductions			
a. Died without beneficiary	(1)	(8)	(9)
3. Changes in Status			
a. Died with beneficiary			0
4. July 1, 2022	0	24	24

CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION

APPENDIX B – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

- 1. Investment Rate of Return** 2.00% compounded annually.
- 2. Administrative Expenses** No explicit assumption is made for administrative expenses for funding purposes per the funding methodology prescribed by NJ State Statute.
- 3. Mortality**

Healthy retirees: The Pub-2010 Public Safety Healthy Retiree mortality table [*PubS-2010 Healthy Retiree*] as published by the Society of Actuaries (SOA), unadjusted, and with future improvement from the base year of 2010 on a generational basis using the SOA's Scale MP-2021.

Beneficiaries: The Pub-2010 General Healthy Retiree mortality table [*PubG-2010 Healthy Retiree*] as published by the SOA, unadjusted, and with future improvement from the base year of 2010 on a generational basis using the SOA's Scale MP-2021.
- 4. Family Composition Assumptions**

For those participants with listed beneficiaries, the beneficiary allowance was assumed to be the greater of twice the amount contained in the record or the minimum of \$4,500/yr. (The information contained in the record has not been updated for the change from 25% to 50% payment to the survivor.)

For those participants without listed beneficiaries, 65% were assumed to be married and the beneficiary amount was assumed to be the minimum benefit payable (\$4,500/yr.).

Males are assumed to be four years older than females.

No assumption was made for children.
- 5. Rationale for Assumptions** The assumptions are based on the 2022 Experience Study dated November 9, 2022 and approved by the Division of Pensions and Benefits.
- 6. Changes in Actuarial Assumptions since Last Valuation** The mortality assumptions were updated to use Projection Scale MP-2021 instead of MP-2018. For a detailed description of the assumptions before and after the changes reflected in the valuation, please reference the Experience Study.

APPENDIX B – SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

The actuarial methods used for determining State contributions are described below.

1. Actuarial Cost Method

The actuarial cost method for funding calculations is the Projected Unit Credit Cost Method.

The actuarial liability is calculated as the actuarial present value of the projected benefits allocated to periods prior to the valuation year. The unfunded actuarial liability is the actuarial liability on the valuation date less the actuarial value of assets.

The unfunded actuarial liability as of June 30, 1990 was amortized over a closed period of nine years. Without additional guidance, we assumed that if there is an unfunded actuarial liability in the future it will be amortized over one year.

Beginning with the July 1, 2021 valuation, liabilities associated with cost-of-living adjustments are included in the valuation based on the amounts provided in the census data by the DPB. Previously, the cost-of-living adjustments were separately funded on a pay-as-you-go basis through the Pension Adjustment Fund and the associated liabilities were excluded from the valuation.

2. Asset Valuation Method

The actuarial value of assets is equal to the market value of assets.

In FYE 2021, the Pension Adjustment Fund was transferred into the CPFPPF and cost-of-living adjustments are now paid directly from the CPFPPF.

3. State Contribution Payable Dates

Chapter 83, P.L. 2016 requires the State to make the required pension contributions on a quarterly basis in each fiscal year according to the following schedule: at least 25% by September 30, at least 50% by December 31, at least 75% by March 31, and at least 100% by June 30. As such, contributions are assumed to be made on a quarterly basis.

4. Valuation Software

Cheiron utilizes ProVal, an actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this actuarial valuation.

5. Changes in Actuarial Methods Since Last Valuation

None.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

APPENDIX C – SUMMARY OF PLAN PROVISIONS

This summary of Plan provisions provides an overview of the major provisions of the CPFPPF used in the actuarial valuation. It is not intended to replace the more precise language of the NJ State Statutes, Title 43, Chapter 16, and if there is any difference between the description of the plan herein and the actual language in the NJ State Statutes, the NJ State Statutes will govern. This valuation is prepared based on the plan provisions in effect as of July 1, 2022 and does not reflect the impact of any changes in the benefits that may have been approved after the valuation date.

1. Eligibility of Membership

Member of a municipal police department, a municipal paid or part-paid fire department, a county police department, or a paid or part-paid fire department of a fire district located in a township who has contributed to this pension fund and who is not covered by the Police and Firemen's Retirement System, which became effective on July 1, 1944.

2. Active Member

Any member who is a policeman, fireman, detective, lineman, driver of police van, fire alarm operator, or inspector of combustibles, and who is subject to call for active service as such.

3. Employee Member

Any member who is not subject to active service or duty.

4. Plan Year

The 12-month period beginning on July 1 and ending on June 30.

5. Service Credit

Service rendered while a member as described above.

6. Compensation

Base salary, not including individual salary adjustments which are granted primarily in anticipation of retirement or additional remuneration for performing temporary duties beyond the regular workday. (Effective June 30, 1996, Chapter 113, P.L. 1997 provided that the amount of compensation used for employer and member contributions and benefits under the program cannot exceed the compensation limitation of Section 401(a)(17) of the Internal Revenue Code.)

7. Final Compensation

Compensation received during the last 12 months of service preceding retirement or other termination of service.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

8. Average Salary

Salary averaged over the last three years prior to retirement or other termination of service.

9. Contributions

Each active member contributes 7% of his salary to the pension fund.

10. Benefits

a) Service Retirements:

Mandatory retirement at age 65 with 25 years of service (a municipality may retain the Chief of Police until age 70). Voluntary retirement after 25 years of service for an active member and after age 60 with 25 years of experience for an employee member. Benefit is life annuity equal to 60% of final compensation, plus 1% of final compensation for years of service in excess of 25.

b) Death Benefits

(1) While on Duty

Immediate life annuity equal to 70% of average salary payable to the spouse. If there is no spouse, or if the spouse dies or remarries, 20% of final compensation will be payable to one surviving child, 35% to two surviving children, or 50% to three surviving children. If is no surviving spouse or child, 25% of the member's average salary will be payable to one dependent parent or 40% to two dependent parents. The minimum spousal benefit is \$4,500 per annum.

(2) While not on duty after retirement

Life annuity equal to 50% of the member's average salary payable to the spouse, plus 15% to one surviving child or 25% to two or more surviving children. If there is no surviving spouse or if the surviving spouse dies or remarries, 20% of the member's average salary to one child, 35% to two surviving children, or 50% to three or more surviving children. If is no surviving spouse or child, 25% of the member's average salary will be payable to one dependent parent or 40% to two dependent parents. The minimum spousal benefit is \$4,500 per annum.

c) Ordinary Disability Retirement

Totally and permanently incapacitated from service for any cause other than as a direct result of a traumatic event occurring during the performance of a duty. Benefit is an immediate life annuity equal to ½ of average salary.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
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APPENDIX C – SUMMARY OF PLAN PROVISIONS

d) Accidental Disability Retirement

Totally and permanently incapacitated as a direct result of a traumatic event occurring while performing regular or assigned duties. Benefit is an immediate life annuity equal to $\frac{2}{3}$ of average salary.

e) Cost-of-Living Adjustments

Cost-of-living increases are granted to retired members and their eligible survivors in accordance with the Pension Adjustment Act. The additional liability due to the pension adjustment was previously paid by the Pension Adjustment Fund, which was established pursuant to Chapter 143, P.L. 1958. Chapter 78, P.L. 2011 suspended the cost-of-living adjustments for current and future retirees and beneficiaries until reactivated as permitted by law. In FYE 2021, the Pension Adjustment Fund was transferred into the CPFPPF and cost-of-living adjustments were paid directly from the CPFPPF, instead of through annual contributions from the Pension Adjustment Fund.

11. Changes in Plan Provisions Since Last Valuation

None.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

APPENDIX D – HISTORICAL DATA AND REQUIRED EXHIBITS

Table D-1 Historical Summary of Assets and Liabilities¹							
Valuation Date July 1,	Market Value of Assets	Actuarial Value of Assets	Actuarial Liability	Funded Ratio		Market Value	Actuarial Value
2022	\$ 2,748,796	\$ 2,748,796	\$ 1,916,246	143.45%		143.45%	
2021	2,260,738	2,260,738	2,845,637	79.45%		79.45%	
2020	1,295,217	1,295,217	1,369,932	94.55%		94.55%	
2019	1,387,550	1,387,550	1,628,242	85.22%		85.22%	
2018	1,763,463	2,313,665	2,186,581	80.65%		105.81%	
2017	2,065,094	2,721,368	2,674,728	77.21%		101.74%	
2016	2,241,861	3,017,928	3,336,743	67.19%		90.45%	
2015	2,427,950	3,340,908	4,208,241	57.70%		79.39%	
2014	3,303,631	4,366,457	4,848,499	68.14%		90.06%	
2013	5,217,857	6,445,847	6,102,292	85.51%		105.63%	

¹ Values prior to July 1, 2021 valuation do not include assets and liabilities associated with cost-of-living adjustments

Table D-2 Historical Summary of State Appropriations¹					
Fiscal Year Ending June 30,	Actuarially Determined Contribution	Actual Pension Contributions	Contribution Deficiency (Excess)	Percentage of Contribution Covered	
2023 ²	\$ 596,597	\$ 596,597	\$ 0	100.00%	
2022	76,209	76,000	209	99.73%	
2021	245,506	248,000	(2,494)	101.02%	
2020	0	0	0	100.00%	
2019	0	0	0	100.00%	
2018	325,191	325,000	191	99.94%	
2017	884,680	575,000	309,680	65.00%	
2016	491,683	148,000	343,683	30.10%	
2015	0	0	0	100.00%	
2014	864,041	0	864,041	0.00%	

¹ State Appropriations do not include Pension Adjustment

² Reflects the State's planned appropriation of 100% of the Statutory contribution

The information above is based on the final actuarial valuation reports for the given years. The amounts do not reflect differences between the discounted State appropriations receivable and the actual State contribution amounts that became known after the issuance of the reports.

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

APPENDIX D – HISTORICAL DATA AND REQUIRED EXHIBITS

In accordance with the Government Finance Officers Association (GFOA) and their recommended checklist for Annual Comprehensive Financial Reports, we prepared the following schedules for the Fund. The GFOA checklist uses the term Actuarial Accrued Liability, which is the same as the Actuarial Liability used elsewhere in this report.

**Table D-3
Schedule Retirees and Beneficiaries Added to and Removed from Rolls¹**

Valuation Date July 1,	Added to Rolls		Removed from Rolls		Rolls at End of Year		Average Annual Allowance	% Increase/ (Decrease) in Average Annual Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
2022	0	\$ 0	9	\$ 216,861	24	\$ 407,282	\$ 16,970	(10.27%)
2021	0	0	10	79,329	33	624,143	18,913	151.34%
2020	0	0	9	63,449	43	323,589	7,525	1.10%
2019	0	0	10	57,040	52	387,038	7,443	3.91%
2018	0	0	15	96,452	62	444,078	7,163	2.04%
2017	0	0	18	117,408	77	540,530	7,020	1.36%
2016	0	0	29	164,935	95	657,938	6,926	4.37%
2015	0	0	25	210,952	124	822,873	6,636	(4.35%)
2014	0	0	36	268,424	149	1,033,825	6,938	(1.43%)
2013	0	0	56	414,903	185	1,302,249	7,039	(1.21%)

¹Annual allowances do not include cost-of-living adjustments prior to July 1, 2021 valuation

**Table D-4
Schedule of Funding Progress**

Valuation Date July 1,	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability ² (b)	(Surplus)/Unfunded Actuarial Accrued Liability (c) = (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (d)	(Surplus)/Unfunded Actuarial Accrued Liability as % of Covered Payroll (c) / (d)
2022	\$ 2,748,796	\$ 1,916,246	\$ (832,550)	143.45%	\$ 0	N/A
2021	2,260,738	2,845,637	584,899	79.45%	0	N/A
2020	1,295,217	1,369,932	74,715	94.55%	0	N/A
2019	1,387,550	1,628,242	240,692	85.22%	0	N/A
2018	2,313,665	2,186,581	(127,084)	105.81%	0	N/A
2017	2,721,368	2,674,728	(46,640)	101.74%	0	N/A
2016	3,017,928	3,336,743	318,815	90.45%	0	N/A
2015	3,340,908	4,208,241	867,333	79.39%	0	N/A
2014	4,366,457	4,848,499	482,042	90.06%	0	N/A
2013	6,445,847	6,102,292	(343,555)	105.63%	0	N/A

¹Includes receivable amounts. Values from valuations prior to July 1, 2021 do not include assets associated with cost-of-living adjustments

²Values from valuations prior to July 1, 2021 do not include liabilities associated with cost-of-living adjustments

**CONSOLIDATED POLICE AND FIREMEN'S PENSION FUND OF NEW JERSEY
JULY 1, 2022 ACTUARIAL VALUATION**

APPENDIX D – HISTORICAL DATA AND REQUIRED EXHIBITS

**Table D-5
Schedule of Funded Liabilities by Type (Solvency Test)**

Valuation Date July 1,	Actuarial Accrued Liability for				Actuarial Value of Assets ²	Portion of Actuarial Accrued Liabilities Covered by Actuarial Value of Assets		
	Contributing & Non-Contributing Active Member Contributions (1)	Retirees, Beneficiaries & Deferred Vesteds ¹ (2)	Contributing & Non-Contributing Active Member Benefits Financed by Employer (3)			(1)	(2)	(3)
2022	\$ 0	\$ 1,916,246	\$ 0	\$ 2,748,796	N/A	100.00%	N/A	
2021	0	2,845,637	0	2,260,738	N/A	79.45%	N/A	
2020	0	1,369,932	0	1,295,217	N/A	94.55%	N/A	
2019	0	1,628,242	0	1,387,550	N/A	85.22%	N/A	
2018	0	2,186,581	0	2,313,665	N/A	100.00%	N/A	
2017	0	2,674,728	0	2,721,368	N/A	100.00%	N/A	
2016	0	3,336,743	0	3,017,928	N/A	90.45%	N/A	
2015	0	4,208,241	0	3,340,908	N/A	79.39%	N/A	
2014	0	4,848,499	0	4,366,457	N/A	90.06%	N/A	
2013	0	6,102,292	0	6,445,847	N/A	100.00%	N/A	

¹Values from valuations prior to July 1, 2021 do not include liabilities associated with cost-of-living adjustments

²Includes receivable amounts. Values from valuations prior to July 1, 2021 do not include assets associated with cost-of-living adjustments

**Table D-6
Analysis of Financial Experience
Change in Unfunded Actuarial Accrued Liability**

Valuation Date July 1,	Actuarial Value Of Assets Investment (Gain)/Loss	Actuarial Accrued Liability (Gain)/Loss	Assumption & Method Changes	Plan Changes	Contributions ¹	Change in Unfunded Actuarial Accrued Liability
2022	\$ 39,018	\$ (474,624)	\$ (33,532)	\$ 0	\$ (948,311)	\$ (1,417,449)
2021	40,512	(121,005)	667,664	0	(76,987)	510,184
2020	10,163	61,238	0	0	(237,378)	(165,977)
2019	113,583	(31,761)	289,436	0	(3,482)	367,776
2018	137,551	(63,930)	10,670	0	(164,735)	(80,444)
2017	164,069	(154,174)	0	0	(375,350)	(365,455)
2016	194,017	(264,949)	0	0	(477,586)	(548,518)
2015	228,240	(201,179)	348,589	0	9,641	385,291
2014	265,707	(314,561)	0	0	874,451	825,597
2013	306,998	(650,553)	0	0	(847,099)	(1,190,654)

¹Change due to contributions (greater)/less than normal cost plus interest on the Unfunded Actuarial Accrued Liability.

APPENDIX E – GLOSSARY OF TERMS

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disability, and retirement; changes in compensation; inflation; rates of investment earnings, and asset appreciation or depreciation; and other relevant items.

2. Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a Normal Cost and an Actuarial Liability.

3. Actuarial Gain/(Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

4. Actuarial Liability

The portion of the Actuarial Present Value of Projected Benefits which will not be paid by future Normal Costs. It represents the value of the past Normal Costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The Actuarial Present Value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made. As a simple example: assume you owe \$100 to a friend one year from now. Also, assume there is a 1% probability of your friend dying over the next year, in which case you won't be obligated to pay him. If the assumed investment return is 10%, the actuarial present value is:

$$\frac{\text{Amount}}{\text{Payment}} \times \frac{\text{Probability of}}{(1 - .01)} \times \frac{1}{(1 + \text{Investment Return})} = \$90$$

6. Actuarial Valuation

The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

7. Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan as used by the actuary for the purpose of an Actuarial Valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values. This way long-term costs are not distorted by short-term fluctuations in the market.

APPENDIX E – GLOSSARY OF TERMS

8. Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

9. Amortization Payment

The portion of the pension plan contribution which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Funded Ratio

The ratio of the Actuarial Value of Assets to the Actuarial Liabilities.

11. Investment Return Assumption

The assumed interest rate used for projecting dollar related values in the future.

12. Mortality Table

A set of percentages which estimate the probability of death at a particular point in time. Typically, the rates are annual and based on age and sex.

13. Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses, which is allocated to a valuation year by the Actuarial Cost Method.

14. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and increases in future compensation and service credits.

15. Projected Unit Credit Cost Method

A method under which the Actuarial Liability is calculated as the Actuarial Present Value of the Projected Benefits allocated to periods prior to the valuation year.

16. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.