



City of Ludington Police Retirement System

Actuarial Valuation

*As of December 31, 2024
Contributions Applicable to the Plan/
Fiscal Year Beginning January 1, 2025*

*P.A. 202 Valuation
As of December 31, 2024*

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

March 28, 2025

Board of Trustees
City of Ludington Police Retirement System

Re: Police Retirement System Actuarial Valuation Report

Dear Board,

This report details the annual actuarial valuation of the Police Retirement System as of December 31, 2024.

The valuation was performed to measure the plan's liability and funding levels and to determine the actuarially appropriate funding requirements for the plan year ending December 31, 2025. This report was prepared for use by the Board. Use of the results for other purposes may not be applicable and could produce significantly different results.

DATA AND ASSUMPTIONS

In preparing this report, we have relied on personnel and plan design supplied by the Board. Assets were determined based on audited financial reports supplied by the Board. In our opinion, the assumptions used in the valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated fund experience. Other sets of assumptions and methods could also be reasonable and could produce materially different results. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

DISCLOSURES AND LIMITATIONS

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law. Due to the limited scope of this report, we did not provide an analysis of these potential differences.

The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of its liabilities.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the

software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

ACTUARIAL CERTIFICATION

The valuation has been conducted in accordance with all applicable laws and regulations, as well as generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board; specifically No. 4 for Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, No. 23 for Data Quality, No. 27 for Selection of Economic Assumptions for Measuring Pension Obligations, No. 35 for Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations, No. 44, Selection and Use of Asset Valuation Methods for Pension Valuations, and No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations.

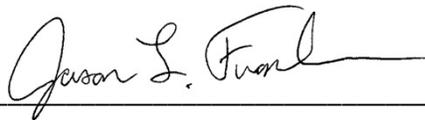
In our opinion, the Minimum Required Contribution set forth in this report constitutes a reasonable actuarially determined contribution under Actuarial Standard of Practice No. 4.

The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on this report has any direct financial interest or indirect material interest in the City of Ludington, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Police Retirement System. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

Respectfully submitted,

Foster & Foster, Inc.



Jason L. Franken, FSA, EA, MAAA

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SUMMARY

The regular annual actuarial valuation of the City of Ludington Police Retirement System, performed as of December 31, 2024, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year beginning January 1, 2025.

The contribution requirements, compared with those set forth in the December 31, 2023 actuarial report, are as follows:

Valuation Date	12/31/2024	12/31/2023
Applicable to Fiscal Year Beginning	1/1/2025	1/1/2024
Total Recommended Contribution	\$526,936	\$497,694
% of Projected Annual Payroll	49.35%	46.77%
Member Contributions (Est.)	(79,847)	(79,576)
% of Projected Annual Payroll	(7.48%)	(7.48%)
City Recommended Contribution	447,089	418,118
% of Projected Annual Payroll	41.87%	39.29%

As you can see, the Total Recommended Contribution shows an increase from the December 31, 2023 actuarial valuation report. The increase is attributable to higher administrative expenses than expected, the natural increase in the amortization payment due to the payroll growth assumption, and unfavorable plan experience as detailed below.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an investment return of 4.03% (Actuarial Asset Basis) which fell short of the 6.85% assumption, more retirements than expected, and an average salary increase of 29.76% which exceeded the 6.88% assumption. These losses were offset in part by gains associated with higher than expected inactive mortality and more turnover than expected.

CHANGES SINCE PRIOR VALUATION

The valuation reflects no plan changes.

The valuation reflects no assumption or method changes

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

Valuation Date	12/31/2024	12/31/2023
A. Participant Data		
Number Included		
Actives	12	14
Service Retirees	15	15
Beneficiaries	6	4
Disability Retirees	0	0
Terminated Vested	<u>6</u>	<u>4</u>
Total	39	37
Total Projected Annual Payroll	\$1,067,538	\$1,149,163
Payroll Under Assumed Ret. Age	1,067,538	1,063,915
Annual Rate of Payments to:		
Service Retirees	594,923	529,341
Beneficiaries	81,945	48,247
Disability Retirees	0	0
Terminated Vested	100,911	46,922
B. Assets		
Actuarial Value	7,757,620	7,554,690
Market Value	7,599,983	7,009,351
C. Liabilities		
Present Value of Benefits (PVB)		
Actives		
Retirement Benefits	2,983,108	4,627,788
Disability Benefits	308,963	278,492
Death Benefits	105,330	80,440
Vested Benefits	526,273	451,203
Service Retirees	7,117,202	6,129,352
Beneficiaries	738,064	434,690
Disability Retirees	0	0
Terminated Vested	<u>1,074,164</u>	<u>427,678</u>
Total	12,853,104	12,429,643

	12/31/2024	12/31/2023
C. Liabilities - (Continued)		
Present Value of Future Salaries	13,870,939	11,921,858
Normal Cost (Retirement)	145,598	150,240
Normal Cost (Disability)	25,243	24,849
Normal Cost (Death)	6,999	5,296
Normal Cost (Vesting)	<u>33,802</u>	<u>30,852</u>
Total Normal Cost (EAN)	211,642	211,237
Present Value of Future Normal Costs	2,609,116	2,278,916
Accrued Liability (Retirement)	1,094,262	2,973,828
Accrued Liability (Disability)	26,201	22,184
Accrued Liability (Death)	27,053	22,833
Accrued Liability (Vesting)	167,042	140,162
Accrued Liability (Inactives)	<u>8,929,430</u>	<u>6,991,720</u>
Total Actuarial Accrued Liability	10,243,988	10,150,727
Unfunded Actuarial Accrued Liability (UAAL)	2,486,368	2,596,037
Funded Ratio (AVA / AL)	75.7%	74.4%

	12/31/2024	12/31/2023
D. Actuarial Present Value of Accrued Benefits		
Vested Accrued Benefits		
Inactives	8,929,430	6,991,720
Actives	325,833	1,884,298
Member Contributions	<u>297,823</u>	<u>553,637</u>
Total	9,553,086	9,429,655
Non-vested Accrued Benefits	<u>110,587</u>	<u>181,449</u>
Total Present Value Accrued Benefits	9,663,673	9,611,104
Funded Ratio (MVA / PVAB)	78.6%	72.9%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	75,363	
Benefits Paid	(658,598)	
Interest	635,804	
Other	<u>0</u>	
Total	52,569	

Valuation Date	12/31/2024	12/31/2023
Applicable to Fiscal Year Beginning	1/1/2025	1/1/2024

E. Pension Cost

Normal Cost ¹	\$226,139	\$225,707
% of Total Annual Payroll ¹	21.18	21.21
Administrative Expenses ¹	32,055	8,548
% of Total Annual Payroll ¹	3.00	0.80
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 12 years (as of 12/31/2024) ¹	268,742	263,439
% of Total Annual Payroll ¹	25.17	24.76
Total Recommended Contribution	526,936	497,694
% of Total Annual Payroll ¹	49.35	46.77
Expected Member Contributions ¹	(79,847)	(79,576)
% of Total Annual Payroll ¹	(7.48)	(7.48)
Expected City Contribution	447,089	418,118
% of Total Annual Payroll ¹	41.87	39.29

F. Past Contributions

Plan Years Ending:	<u>12/31/2024</u>
Total Recommended Contribution	487,097
City	418,118
Actual Contributions Made:	
Members (excluding buyback)	68,979
City	<u>544,630</u>
Total	613,609

G. Net Actuarial (Gain)/Loss 121,381

¹ Contributions developed as of 12/31/2024 displayed above have been adjusted to account for assumed interest.

H. Schedule Illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of:

Year	Projected Unfunded Accrued Liability
2024	2,486,368
2025	2,387,943
2026	2,274,714
2029	1,833,166
2031	1,439,135
2034	663,848
2036	0

I. (i) 3 Year Comparison of Actual and Assumed Salary Increases

		Actual	Assumed
Year Ended	12/31/2024	29.76%	6.88%
Year Ended	12/31/2023	5.84%	5.37%
Year Ended	12/31/2022	14.24%	5.33%

(ii) 3 Year Comparison of Investment Return on Actuarial Value

		Actual	Assumed
Year Ended	12/31/2024	4.03%	6.85%
Year Ended	12/31/2023	3.43%	7.00%
Year Ended	12/31/2022	5.22%	7.00%

DEVELOPMENT OF AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of December 31, 2023	\$2,596,037
(2)	Sponsor Normal Cost developed as of December 31, 2023	136,763
(3)	Expected administrative expenses for the year ended December 31, 2024	8,000
(4)	Expected interest on (1), (2) and (3)	187,471
(5)	Sponsor contributions to the System during the year ended December 31, 2024	544,630
(6)	Expected interest on (5)	18,654
(7)	Expected Unfunded Actuarial Accrued Liability as of December 31, 2024, (1)+(2)+(3)+(4)-(5)-(6)	2,364,987
(8)	Change to UAAL due to Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	121,381
(10)	Unfunded Accrued Liability as of December 31, 2024	2,486,368
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	2,486,368

Date Established	Years Remaining	UAAL	Amortization Amount
12/31/2024	12	2,486,368	251,513

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of December 31, 2023	\$2,596,037
(2) Expected UAAL as of December 31, 2024	2,364,987
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	211,397
Salary Increases	65,281
Active Decrements	(33,907)
Inactive Mortality	(195,383)
Other	<u>73,993</u>
Change in UAAL due to (Gain)/Loss	121,381
Change to UAAL due to Assumption Change	<u>0</u>
(4) Actual UAAL as of December 31, 2024	\$2,486,368

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of December 31, 2023	\$ 418,118
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	432
Change in Assumed Administrative Expense	23,507
Investment Return (Actuarial Asset Basis)	22,849
Salary Increases	7,056
New Entrants	1,424
Active Decrements	(3,665)
Inactive Mortality	(21,118)
Contributions (More) or Less than Recommended	(14,143)
Increase in Amortization Payment Due to Payroll Growth Assumption	7,903
Change in Expected Member Contributions	(271)
Assumption Change	-
Other	<u>4,997</u>
Total Change in Contribution	28,971
(3) Contribution Determined as of December 31, 2024	\$447,089

P.A. 202 REPORTING

Michigan Public Act 202 of 2017 requires municipal retirement systems in the state to submit information concerning their actuarial accrued liabilities and funded status based on uniform assumptions. The information is to be furnished by the municipality on Form 5572.

Form 5572		
Line		12/31/2024
24	Actuarial Value of Assets	7,757,620
25	Actuarial Accrued Liabilities	10,389,959
26	Funded Ratio	74.7%
27	Actuarially Determined Contribution	548,822

The information was calculated based on the following assumptions, in compliance with the Uniform Assumptions pursuant to PA 202, applicable for fiscal year 2024. All other assumptions are as described in the Actuarial Assumptions and Methods section of this report.

Investment Rate of Return	6.85%
Discount Rate (equivalent single rate used)	6.85%
Periods with sufficient assets	6.85%
Periods without sufficient assets	3.65%
Salary Increase	Experience-based rates
Mortality Table	Pub-2010 with MP-2021
Amortization Period for Unfunded	
Actuarial Accrued Liability	12 years
Cost Method	Entry Age Normal
Amortization Method	Level percent of pay
Payroll Growth Assumption	3.00%

FUNDING HISTORY

Valuation Date	Applicable Fiscal Year Beginning	Valuation Assets ¹	Actuarial Accrued Liabilities ¹	Funded Ratio	Unfunded Actuarial Accrued Liabilities ¹	Recommended Employer Contribution	Recommended Employer Contribution - as a% of Payroll
12/31/2005	1/1/2007	3,232	5,060	63.9%	1,828	236,368	30.40%
12/31/2006	1/1/2008	3,421	5,099	67.1%	1,678	234,150	30.12%
12/31/2007	1/1/2009	3,614	5,282	68.4%	1,668	244,483	30.31%
12/31/2008	1/1/2010	3,659	5,569	65.7%	1,910	276,744	30.66%
12/31/2009	1/1/2011	3,715	5,705	65.1%	1,990	283,358	31.62%
12/31/2010	1/1/2012	3,726	5,983	62.3%	2,257	301,133	35.25%
12/31/2011	1/1/2013	3,728	5,963	62.5%	2,235	288,543	38.71%
12/31/2012	1/1/2014	4,015	6,027	66.6%	2,012	274,617	33.00%
12/31/2013	1/1/2015	4,357	5,907	73.8%	1,550	236,203	29.19%
12/31/2014	1/1/2016	4,744	6,472	73.3%	1,728	259,963	29.27%
12/31/2015	1/1/2017	5,038	6,714	75.0%	1,676	252,182	29.59%
12/31/2016	1/1/2018	5,342	7,255	73.6%	1,913	253,896	28.68%
12/31/2017	1/1/2019	5,629	7,662	73.5%	2,033	253,337	27.13%
12/31/2018	1/1/2020	5,822	7,809	74.6%	1,987	255,227	28.09%
12/31/2019	1/1/2021	6,261	8,358	74.9%	2,097	282,029	28.42%
12/31/2020	1/1/2022	6,605	9,074	72.8%	2,469	319,978	31.47%
12/31/2021	1/1/2023	6,998	9,113	76.8%	2,115	301,743	29.22%
12/31/2022	1/1/2024	7,302	9,139	79.9%	1,838	286,992	27.94%
12/31/2023	1/1/2025	7,555	10,151	74.4%	2,596	418,118	39.29%
12/31/2024	1/1/2026	7,758	10,244	75.7%	2,486	447,089	41.87%

¹Dollar values reported in thousands.

PROJECTION OF BENEFIT PAYMENTS

Year	Payments for Current Actives	Payments for Current Inactives	Total Payments
2024	10,604	693,699	704,303
2025	13,863	701,968	715,831
2026	17,021	736,419	753,440
2027	18,075	730,038	748,113
2028	18,983	723,068	742,051
2029	18,932	725,352	744,284
2030	19,925	727,075	747,000
2031	23,077	718,430	741,507
2032	24,425	709,252	733,677
2033	24,773	699,538	724,311
2034	36,124	689,273	725,397
2035	42,939	678,444	721,383
2036	104,652	667,036	771,688
2037	183,693	655,037	838,730
2038	209,117	642,430	851,547
2039	212,579	629,206	841,785
2040	216,645	615,360	832,005
2041	227,794	600,897	828,691
2042	266,338	585,837	852,175
2043	309,739	570,774	880,513
2044	401,843	560,762	962,605
2045	485,001	544,181	1,029,182
2046	649,719	523,977	1,173,696
2047	795,434	503,280	1,298,714
2048	902,759	485,656	1,388,415
2049	970,783	467,763	1,438,546
2050	998,361	449,657	1,448,018
2051	1,000,755	431,213	1,431,968
2052	996,769	412,345	1,409,114
2053	1,049,120	392,955	1,442,075
2054	1,061,234	372,959	1,434,193
2055	1,055,165	352,290	1,407,455
2056	1,048,361	330,922	1,379,283
2057	1,038,970	308,887	1,347,857
2058	1,028,121	286,272	1,314,393
2059	1,015,590	259,837	1,275,427
2060	1,001,727	213,466	1,215,193
2061	989,585	165,485	1,155,070
2062	976,516	140,542	1,117,058
2063	962,064	120,033	1,082,097

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate 6.85% per year compounded annually, net of investment related expenses.

Mortality Rate

Active Lives:
PubS-2010 Employee mortality, projected 5 years past the valuation date with Scale MP-2021. 100% of deaths are assumed to be non-duty.

Inactive Lives:
PubS-2010 Healthy Retiree mortality, projected 5 years past the valuation date with Scale MP-2021.

Beneficiaries:
PubS-2010 Survivor mortality, projected 5 years past the valuation date with Scale MP-2021.

Disabled Lives:
PubS-2010 Disabled mortality, projected 5 years past the valuation date with Scale MP-2021.

The mortality assumptions sufficiently accommodate anticipated future mortality improvements.

Retirement Age Rates are based on an experience study performed in 2023.

% Retiring During Service	
Service	Rate
<24	15%
24	30%
25	80%
26	60%
27+	100%

Disability Rate 0.30% for all employees. 90% of disabilities are assumed to be in the line of duty. This is based on an experience study performed in 2023.

Termination Rate

Rates are based on an experience study performed in 2023.

Age	% Terminating During Year Service					
	0	1	2	3	4	5+
20	12.00%	9.00%	7.00%	5.00%	4.50%	4.50%
25	12.00%	9.00%	7.00%	5.00%	4.50%	4.50%
30	12.00%	9.00%	7.00%	5.00%	4.50%	4.25%
35	12.00%	9.00%	7.00%	5.00%	4.50%	3.00%
40	12.00%	9.00%	7.00%	5.00%	4.50%	2.00%
45+	12.00%	9.00%	7.00%	5.00%	4.50%	1.00%

Inflation

2.50%.

Salary Increases

Rates inclusive of inflation. Rates are based on an experience study performed in 2023.

Service	Rate	Service	Rate
0	9.00%	6	6.00%
1	8.80%	7	5.50%
2	8.50%	8	5.00%
3	8.00%	9	4.50%
4	7.00%	10-14	4.00%
5	6.50%	15+	3.80%

Marital Status

100% of Members are assumed to be married.

Spouse's Age

Males are assumed to be three years older than females.

Member Contribution Interest

2.00%.

Funding Method

Entry Age Normal Cost Method.

Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation. The normal cost accrual rate equals:

(i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by

(ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.

In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future.

Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

Actuarial Asset Method

Investment gains and losses are smoothed over a 4-year period. In the first year, 25% of the gain or loss is recognized. In the second year 50%, in the third year 75%, and in the fourth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of the Market Value of Assets.

Funding Policy Amortization Method

The unfunded present value of benefits is amortized according to a level percentage of payroll method over a closed period. 12 years as of December 31, 2024.

Payroll Growth

3.00%. This is based on an experience study performed in 2023.

Administrative Expenses

Expenses paid out of the fund other than investment-related expenses are assumed to be equal to the average of the expenses paid out of fund over the previous 3 years, rounded to the nearest thousand.

GLOSSARY

Accrued Benefit	The benefit earned as of a specific date based on the provisions of the plan and the member's age, service, and salary as of that date.
Actuarial Accrued Liability	The portion of the anticipated future benefits allocated to years prior to the valuation date determined according to the plan's Actuarial Cost Method.
Actuarial Value of Assets	The asset value used in the valuation to determine contribution requirements. It represents the plan's Market Value of Assets (see below), with adjustments according to the plan's Actuarial Asset Method. These adjustments produce a "smoothed" value that is likely to be less volatile from year to year than the Market Value of Assets.
Actuarial Assumptions	Assumptions regarding the occurrence of future events affecting plan costs. These assumptions include rates of investment earnings, changes in compensation, rates of mortality, withdrawal, disablement, and retirement as well as statistics related to marriage and family composition.
Actuarial Cost Method	A method of determining the portion of the cost of a plan to be allocated to each year; sometimes referred to as the "actuarial funding method." Each cost method allocates a certain portion of the actuarial present value of benefits between the Actuarial Accrued Liability and future normal costs to ensure the plan is adequately and systematically funded.
Actuarial Gain or Loss	The change in Unfunded Actuarial Accrued Liability resulting from experience different from Actuarial Assumptions. Gains decrease the Unfunded Actuarial Accrued Liability and losses increase the Unfunded Actuarial Accrued Liability.

Actuarial Present Value	The estimated amount of funds required as of a specified date to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payments between the specified date and the expected date of payment.
Amortization Payment	The portion of the plan contribution designated to pay interest and reduce the outstanding principal balance of Unfunded Actuarial Accrued Liability. If the amortization payment is less than the accrued interest on the Unfunded Actuarial Accrued Liability the outstanding principal balance will increase.
Decrements	Events which result in the termination of membership in the system such as retirement, disability, withdrawal, or death.
Funded Ratio	A measure of the ratio of the plan assets to liabilities of the system. Typically, the assets used in the measure are the Actuarial Value of Assets as determined by the asset valuation method. The Funded Ratio depends not only on the financial strength of the plan but also on the asset valuation method used to determine the assets and on the Actuarial Cost Method used to determine the liabilities
Interest Rate	The assumed long-term rate of return on plan assets.
Market Value of Assets	The fair market value of plan assets as of the valuation date.
Normal Cost	The portion of the Actuarial Present Value of Benefits allocated to the current year determined according to the plan's Actuarial Cost Method.
Present Value of Benefits	The single sum value on the valuation date of all future benefits to be paid to current plan participants.
Projected Annual Payroll	The salary expected for the year after the valuation date, excluding members over the 100% assumed retirement age.

Projected Benefits	The benefits expected to be paid in the future based on the provisions of the plan and the Actuarial Assumptions. The projected values are based on anticipated future advancement in age and accrual of service as well as increases in salary paid to the participant.
Total Annual Payroll	The salary expected for the year after the valuation date.
Ultimate Cost	<p>The total cost to the plan once the last benefit has been paid. The Ultimate Cost equals</p> <p>Benefit Payments Plus: Expenses Less: Investment Income</p> <p>The Ultimate Cost is independent of the Actuarial Cost Method selected.</p>
Unfunded Actuarial Accrued Liability	The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.
Vested Benefit	Benefits members are entitled to regardless of employment status.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.

- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.
- Contribution Risk: This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions, which are determined in accordance with the Board's funding policy. The funding policy is intended to result in contribution requirements that if paid when due, will result in a reasonable expectation that assets will accumulate to be sufficient to pay plan benefits when due. Contribution deficits, particularly large deficits and those that occur repeatedly, increase future contribution requirements and put the plan at risk for not being able to pay plan benefits when due.

IMPACT OF PLAN MATURITY ON RISK

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature plans with a substantial inactive liability. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled “Plan Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased from 63.6% on December 31, 2021 to 44.4% on December 31, 2024, indicating that the plan has been maturing.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 87.2%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors will need to be made up for over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has decreased from 76.8% on December 31, 2021 to 75.7% on December 31, 2024, due mainly to the shortfall in Actual Sponsor Contributions. If the contribution deficit continues, the funded ratio will continue to decrease even if all assumptions are met.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from December 31, 2021 to December 31, 2024. The current Net Cash Flow Ratio of -1.3% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses.

LOW DEFAULT-RISK OBLIGATION MEASURE

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, was revised as of December 2021 to include a “low-default-risk obligation measure” (LDRM). This liability measure is consistent with the determination of the actuarial accrued liability shown on page 8 in terms of member data, plan provisions, and assumptions/methods, including the use of the Entry Age Normal Cost Method, except that the interest rate is tied to low-default-risk fixed income securities. The S&P Municipal Bond 20 Year High Grade Rate Index (daily rate closest to, but not later than, the measurement date) was selected to represent a current market rate of low risk but longer-term investments that could be included in a low-risk asset portfolio. The interest rate used in this valuation was 4.28% resulting in an LDRM of \$13,956,893. The LDRM should not be considered the “correct” liability measurement; it simply shows a possible outcome if the Board elected to hold a very low risk asset portfolio. Given that plan benefits are paid over time through the combination of contributions and investment returns, prudent investments selected by the Board help to balance asset accumulation through these two sources.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	12/31/2024	12/31/2023	12/31/2022	12/31/2021
<u>Support Ratio</u>				
Total Actives	12	14	13	14
Total Inactives	27	23	21	22
Actives / Inactives	44.4%	60.9%	61.9%	63.6%
<u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	7,599,983	7,009,351	6,469,704	7,254,215
Total Annual Payroll	1,067,538	1,149,163	1,027,162	1,032,593
MVA / Total Annual Payroll	711.9%	610.0%	629.9%	702.5%
<u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	8,929,430	6,991,720	6,731,268	6,990,198
Total Accrued Liability	10,243,988	10,150,727	9,139,416	9,112,666
Inactive AL / Total AL	87.2%	68.9%	73.7%	76.7%
<u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	7,757,620	7,554,690	7,301,838	6,997,915
Total Accrued Liability	10,243,988	10,150,727	9,139,416	9,112,666
AVA / Total Accrued Liability	75.7%	74.4%	79.9%	76.8%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow ¹	(99,753)	2,039	(59,912)	(108,837)
Market Value of Assets (MVA)	7,599,983	7,009,351	6,469,704	7,254,215
Ratio	-1.3%	0.0%	-0.9%	-1.5%

¹ Determined as total contributions minus benefit payments and administrative expenses.

ASSET INFORMATION

STATEMENT OF FIDUCIARY NET POSITION

	MARKET VALUE December 31, 2024
ASSETS	
Cash and Cash Equivalents	163,971
Total Cash and Equivalents	163,971
Receivables:	
Accounts Receivable-Other	543,795
Total Receivable	543,795
Investments:	
Equity Securities	7,436,012
Total Investments	7,436,012
Total Assets	8,143,778
LIABILITIES	
Liabilities:	
Payable:	
Accrued Expenses	543,795
Total Liabilities	543,795
Net Assets:	
Active and Retired Members' Equity	7,599,983
NET POSITION RESTRICTED FOR PENSIONS	7,599,983

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

		YEAR ENDED 12/31/2024
ADDITIONS		
Contributions:		
Member	68,979	
City	544,630	
Total Contributions		613,609
Investment Income:		
Net Increase in Fair Value of Investments		690,385
Less Expenses ¹		0
Net Investment Income		690,385
Total Additions		1,303,994
DEDUCTIONS		
Distributions to Members:		
Benefit Payments	658,598	
Refunds	0	
Total Distributions		658,598
Administrative Expenses		54,764
Total Deductions		713,362
Net Increase in Net Position		590,632
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		7,009,351
End of the Year		7,599,983

¹ Expenses include investment advisory, custodial and performance monitoring fees

DEVELOPMENT OF ACTUARIAL ASSET VALUATION

		12/31/2024	
Actuarial Value of Assets			
Market Value of Assets		7,599,983	
Total Deferred Investment (Gains)/Losses		<u>157,637</u>	
Preliminary Actuarial Value of Assets		7,757,620	
Limited Actuarial Value of Assets (20% corridor)		7,757,620	
Development of Investment (Gain)/Loss			
Market Value of Assets, Prior Year		7,009,351	
Actuarial Value of Assets, Prior Year		7,554,690	
Contributions		613,609	
Benefit Payments		(658,598)	
Administrative Expenses		(54,764)	
Expected Investment Earnings		514,080	
Actual Net Investment Earnings		<u>(690,385)</u>	
2024 Actuarial Investment Gain/(Loss)		(176,305)	
Deferred Investment (Gains)/Losses			
Year Ended:	(Gain)/Loss	Percentage Deferred	Deferred (Gain)/Loss
12/31/2024	(176,305)	75%	(132,229)
12/31/2023	(26,445)	50%	(13,223)
12/31/2022	1,212,356	25%	303,089
12/31/2021	(164,022)	0%	<u>0</u>
Total Deferred Investment (Gains)/Losses			157,637
Approximate Rates of Return			
Basis		Rate of Return	
Actuarial Asset Rate of Return:		4.03%	
Market Value of Assets Rate of Return:		9.92%	

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS - ACTUARIAL ASSET BASIS

		YEAR ENDED 12/31/2024
ADDITIONS		
Contributions:		
Member	68,979	
City	544,630	
Total Contributions		613,609
Earnings from Investments		
Interest & Dividends	0	
Miscellaneous Income	0	
Net Realized Gain (Loss)	690,385	
Change in Actuarial Value	(387,702)	
Total Earnings and Investment Gains		302,683
DEDUCTIONS		
Administrative Expenses:		
Investment Related ¹	0	
Other	54,764	
Total Administrative Expenses		54,764
Distributions to Members:		
Benefit Payments	658,598	
Refunds	0	
Total Distributions		658,598
Change in Net Assets for the Year		202,930
Net Assets Beginning of the Year		7,554,690
Net Assets End of the Year		7,757,620

¹ Investment Related expenses include investment advisory, custodial and performance monitoring fees.

STATISTICAL DATA

Valuation Date	12/31/2024	12/31/2023	12/31/2022	12/31/2021
<u>Actives</u>				
Number	12	14	13	14
Average Current Age	34.6	36.6	36.9	37.7
Average Age at Employment	29.6	27.6	27.9	29.8
Average Past Service	5.0	9.0	9.0	7.9
Average Annual Salary	\$83,198	\$77,170	\$75,007	\$67,679
<u>Service Retirees</u>				
Number	15	15	15	15
Average Current Age	64.7	66.5	65.5	66.0
Average Annual Benefit	\$39,662	\$35,289	\$35,088	\$34,543
<u>Beneficiaries</u>				
Number	6	4	4	4
Average Current Age	68.1	64.7	63.7	62.7
Average Annual Benefit	\$13,657	\$12,062	\$12,062	\$12,062
EDROs incl. in Beneficiaries	2	2	2	2
<u>Disability Retirees</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Terminated Vested</u>				
Number	6	4	2	3
Average Current Age	41.6	43.2	50.3	N/A
Average Annual Benefit	\$33,637	\$23,461	\$19,385	\$22,953

AGE AND SERVICE DISTRIBUTION

ACTIVE EMPLOYEES

TOTAL

AGE	PAST SERVICE											Total	Total Pay ¹
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+		
20 - 24	1	0	0	0	0	0	0	0	0	0	0	1	\$ 71,492
25 - 29	0	0	0	0	1	2	0	0	0	0	0	3	\$ 283,311
30 - 34	0	1	0	1	0	0	0	0	0	0	0	2	\$ 156,129
35 - 39	0	0	0	1	0	0	1	0	0	0	0	2	\$ 163,376
40 - 44	0	1	0	0	0	0	1	0	0	0	0	2	\$ 177,398
45 - 49	1	0	0	0	0	1	0	0	0	0	0	2	\$ 146,666
50 - 54	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
55 - 59	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
60 - 64	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
65+	0	0	0	0	0	0	0	0	0	0	0	0	\$ 0
Total	2	2	0	2	1	3	2	0	0	0	0	12	\$ 998,372

¹ Total Pay is salaries for the period ending 12/31/2024.

AGE DISTRIBUTION
RETIREES, DISABLEDS AND BENEFICIARIES

AGE	Count	<u>Total</u>	
			Annual Pensions
< 45	1	\$	8,021
45 - 49	0	\$	0
50 - 54	4	\$	198,756
55 - 59	4	\$	157,045
60 - 64	1	\$	48,179
65 - 69	1	\$	43,311
70 - 74	5	\$	114,982
75 - 79	2	\$	50,128
80 - 84	1	\$	24,440
85 - 89	2	\$	32,006
90 - 94	0	\$	0
95 - 99	0	\$	0
100 +	0	\$	0
Total	21	\$	676,868

AGE DISTRIBUTION
INACTIVE VESTED MEMBERS

		<u>Total</u>	
AGE	Count		Annual Pensions
< 45	2	\$	1,495
45 - 49	3	\$	80,351
50 - 54	0	\$	0
55 - 59	1	\$	19,065
60 +	0	\$	0
Total	6	\$	100,911

PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 12/31/2023	14
b. Terminations	
i. Vested (partial or full) with deferred benefits	(1)
ii. Non-vested or full lump sum distribution received	0
iii. Refunded	(1)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(2)
f. Continuing participants	10
g. New entrants	<u>2</u>
h. Total active life participants in valuation	12

2. Non-Active lives (including beneficiaries receiving benefits)

	Service Retirees, Vested Receiving Benefits	Receiving Death Benefits	Receiving Disability Benefits	Vested Deferred	Total
a. Number prior valuation	15	4	0	4	23
Retired	2	0	0	0	2
Vested Deferred	0	0	0	1	1
Death, With Survivor	(2)	2	0	0	0
Death, No Survivor	0	0	0	0	0
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	0	0
Rehires	0	0	0	0	0
New EDROs	0	0	0	0	0
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	1	1
b. Number current valuation	15	6	0	6	27

PLAN PROVISIONS

Plan Administration	<p>The Plan is a single employer defined benefit pension plan administered by a Board of Trustees comprised of five members:</p> <ul style="list-style-type: none">a.) The City treasurer,b.) Two members elected by the Police Department, andc.) Two members appointed by City Council.
Average Final Compensation (AFC)	Average of top 3 years of past 10 years of compensation.
Regular Retirement Eligibility	<p>Hired before January 1, 2015: Age 50 with 25 years of service or age 60 regardless of service. Effective December 31, 1993, any age with 25 years of service</p> <p>Hired on or after January 1, 2015: Age 50 with 25 years of service.</p>
Annual Benefit	<p>Hired before January 1, 2015: Straight life pension equals 2.70% of AFC times first 25 years of service plus 1.00% of AFC times years of service in excess of 25 years.</p> <p>Hired on or after January 1, 2015: Straight life pension equals 2.50% of AFC times first 25 years of service plus 1.00% of AFC times years of service in excess of 25 years.</p>
Duty Disability Retirement Eligibility	Payable upon the total and permanent disability of a member in the line of duty.
Benefit	<p>To age 55: 50% of AFC.</p> <p>At age 55: Same as Service Retirement Pension with service credit from date of disability to age 55.</p>
Non-Duty Disability Retirement Eligibility	Payable upon the total and permanent disability of a member with 5 or more years of service
Benefit	<p>To Age 55: 1.50% of AFC times years of service.</p> <p>At Age 55: Same as service retirement pension.</p>

Deferred Retirement

Eligibility 10 years of credited service.

Benefit Computed as service retirement but based upon service, AFC and benefit provisions in effect at termination. Benefit begins at date retirement would have occurred had member remained in employment.

Duty Death in Service Survivor's Pension

Eligibility Payable upon the expiration of a worker's compensation to the survivors of a member who died in the line of duty.

Benefit Same amount that was paid by worker's compensation.

Non-Duty Death in Service Survivor's Pension

Eligibility Payable to a surviving spouse, if any, upon the death of a member with 20 or more years of service.

Benefit Accrued straight life pension actuarially reduced in accordance with an Option I election.

Death After Retirement Survivor's Pension

Eligibility Payable to an eligible surviving spouse, if any, upon the death of a retired member who was receiving a straight life pension which was effective July 1, 1974 or later.

Benefit Spouse's pension equals 60% of the straight life pension the deceased retiree was receiving.

Normal Payment Form

60% Joint Life Annuity.

Contributions

The obligation to contribute to the system for the police employees was established by negotiations between the City Council and the police bargaining unit (union contract).

Members - the contract requires the employees to contribute to the plan at a rate of 7% of eligible payroll.

City - the City is required to contribute based on a property tax levy of 1.7500 mills.
