City of Manchester Employees' Contributory Retirement System

Annual Actuarial Valuation Report

December 31, 2024

Contents

April 4, 2025

Board of Trustees
City of Manchester Employees'
Contributory Retirement System
1045 Elm Street, Suite 403
Manchester, New Hampshire 03101

Dear Board Members:

The results of the December 31, 2024 **Annual Actuarial Valuation of the City of Manchester Employees' Contributory Retirement System (MECRS)** are presented in this report. This report replaces our preliminary report dated March 4, 2025. The purposes of the valuation were:

- To measure the System's funding progress; and
- To calculate the employer contribution rate for the City's fiscal year ending June 30, 2026.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The actuarial assumptions used for this valuation produce results which, in aggregate, are reasonable. However, other assumptions and methods could also be reasonable and could result in materially different results. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that are deemed to be immaterial.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to actual plan experience differing from assumed; changes in economic or demographic assumptions; changes in funding policy; changes in plan provisions or applicable law; etc. An analysis of the potential range of such future measurement was beyond the scope of this valuation. If there is additional information needed in order to make an informed decision regarding the matters discussed in this report, please contact us.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section C of this report. This report includes risk metrics on page A-19 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. The actuarial assumptions used for the valuation produce results which, individually and in the aggregate, are reasonable. The combined effect of the assumptions, excluding prescribed assumptions or methods set by law, is expected to have no significant bias (i.e., not significantly optimistic or pessimistic).

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of this valuation.

The findings in this report are based on data and other information through December 31, 2024. The valuation was based upon information, furnished by the Retirement System, concerning Retirement System benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. Data was checked for year-to-year consistency, but was not audited.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation, and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We have assessed that the contribution rate calculated under the current funding policy is a reasonable Actuarially Determined Employer Contribution (ADEC) and it is consistent with the plan accumulating adequate assets to make benefit payments when due.

The calculations contained herein were not intended to satisfy the parameters of GASB Statement Nos. 67, 68, 74 or 75 and should not be used for that purpose. Separate calculations are needed for these GASB Statements, which will be provided in separate reports.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, this report is complete and accurate and was made in accordance with standards of practice promulgated by the Actuarial Standards Board of the American Academy of Actuaries. Heidi G. Barry and Kevin T. Noelke are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Heidi G Barry

Heidi G. Barry, ASA, FCA, MAAA

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SECTION A

VALUATION RESULTS

Executive Summary

Funding Objective

The funding objective of the Retirement System is to establish and receive contributions which, when expressed as percents of active member payroll, will remain approximately level from year to year and will accumulate sufficient assets over each member's working lifetime to finance promised benefits throughout retirement.

Contribution Rates

The Retirement System is supported by member contributions, City contributions and investment income from Retirement System assets.

Contributions which satisfy the funding objective are determined by the annual actuarial valuation and are sufficient to:

- Cover the actuarial present value of benefits allocated to the current year by the actuarial cost method described in Section C (i.e., the Normal Cost); and
- Finance over a period of future years the actuarial present value of benefits not covered by valuation assets and anticipated future Normal Costs (i.e., the Unfunded Actuarial Accrued Liability).

The computed pension contribution rate for the City's fiscal year ending June 30, 2026 is 32.24% of covered payroll.

The computed health subsidy contribution rate for the City's fiscal year ending June 30, 2026 is 1.62% of covered payroll.

The contribution rates are sufficient to finance the employer Normal Cost and to amortize the Unfunded Actuarial Accrued Liability as a level percent-of-payroll over a period of 15 years for pension and health subsidy benefits.

The computed contribution rates shown above are in compliance with the Board's funding policy. Users of this report should be aware that contributions made at these rates do not guarantee benefit security. Given the importance of benefit security to any retirement system, we recommend benefit security be considered when adopting a contribution rate. The Board is welcome to adopt higher contribution rates if they believe them to be appropriate and based on sound actuarial funding, methods and assumptions.

Computed Contributions for the City's Fiscal Year Ending June 30, 2026

Contributions For	Contributions Expressed as % of Active Member Payroll
Total Normal Cost	13.81%
Member Contributions	3.75%
Employer Normal Cost	10.06%
Unfunded Actuarial Accrued Liability*	22.18%
Employer Pension Total	32.24%
Health Contribution*	1.62%
Employer Total	**33.86%**
Valuation Payroll	$ 67,129,760
Projected Payroll	$ 69,662,795
Estimated Contribution Dollars	**$ 23,587,822**
Pension	
Unfunded Actuarial Accrued Liability	$171,415,562
Funded Status	63.9%
Health	
Unfunded Actuarial Accrued Liability	$ 11,794,968
Funded Status	67.6%

* *Financed as a level percent of payroll over a closed amortization period of 15 years.*

For each 1% ad hoc COLA increase above the assumed COLA, the Unfunded Actuarial Accrued Liability (UAAL) will increase by approximately $3.0M and the employer contribution rate will increase by approximately 0.38% (based on current payroll and a 15-year amortization period). In developing these costs for the ad hoc COLA increase, it was assumed that the increase would be a one-time permanent increase to all members retired as of December 31, 2024 and the additional liability would be amortized over 15 years. It was also assumed that the increase would be effective on January 1, 2025.

Computed Contributions for the City's Fiscal Year Ending June 30, 2026

Contribution Rate Reconciliation	% of Payroll		
	Pension	Health	Total
FYE June 30, 2025 Rate	32.98 %	1.73 %	34.71 %
Normal Cost Change*	0.06 %	N/A	0.06 %
Miscellaneous Changes in Group Demographics	(0.33)%	(0.05)%	(0.38)%
Assumption and Methodology Changes	0.00 %	0.00 %	0.00 %
Employer Portion of SB 402 Purchases (change in liability)	0.00 %	N/A	0.00 %
COLA (portion above/(below) the assumption)	0.00 %	0.00 %	0.00 %
Payroll Growth More Than Expected	(1.12)%	(0.08)%	(1.20)%
Experience (Gain) Loss	0.65 %	0.02 %	0.67 %
FYE June 30, 2026 Rate	**32.24 %**	**1.62 %**	**33.86 %**

* *Approximate change in Normal Cost due to SB 402 purchase.*

Historical Computed Contributions

Valuation Date December 31	Fiscal Year Ending June 30	Annual Contributions as a Percent-of-Payroll				
		Member		Employer		
		Pension	Health	Pension	Health	Total
2015	2017	3.75%	1.25%	22.48%	1.26%	23.74%
2016	2018	3.75%	1.25%	23.05%	1.40%	24.45%
2017#	2019	3.75%	1.25%	25.12%	1.75%	26.87%
2018	2020	3.75%	1.25%	27.13%	2.20%	29.33%
2019	2021	3.75%	1.25%	28.21%	2.29%	30.50%
2020#	2022	3.75%	1.25%	32.70%	2.76%	35.46%
2021	2023	3.75%	1.25%	32.02%	2.84%	34.86%
2022	2024	3.75%	1.25%	33.24%	2.86%	36.10%
2023#	2025	3.75%	1.25%	32.98%	1.73%	34.71%
2024	**2026**	**3.75%**	**1.25%**	**32.24%**	**1.62%**	**33.86%**

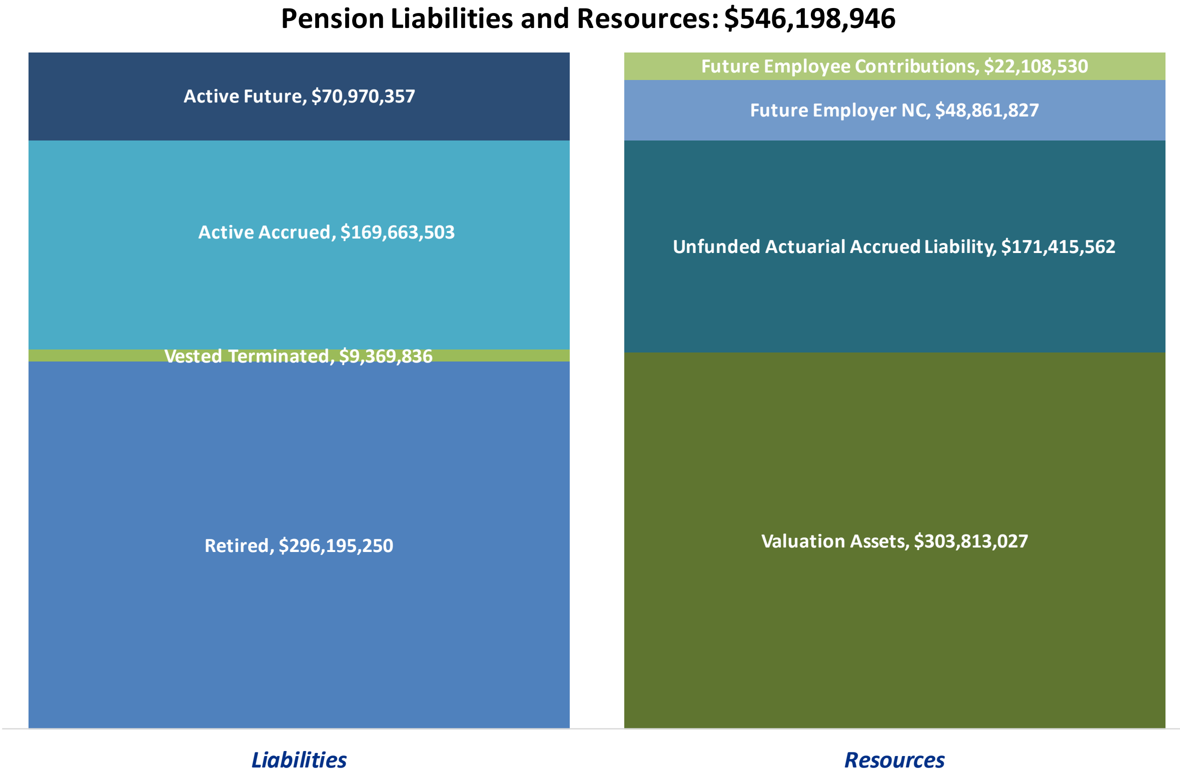
After changes in benefit provisions, or actuarial assumptions/methods.

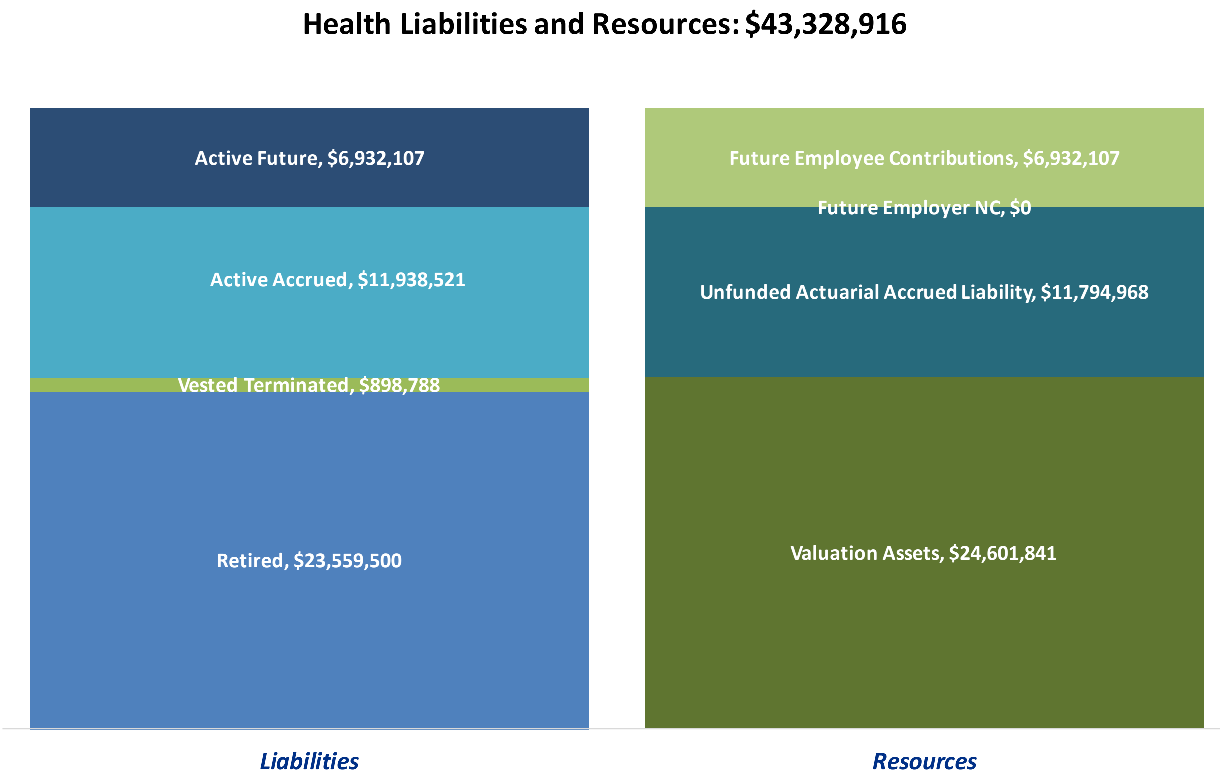
Unfunded Actuarial Accrued Liability (UAAL)
Amortization Schedule and Projected Funded Status (Pension Only)

						Contributions Calculated on the Valuation Date					
						Percent of Pay			Dollar Amounts		
Year	Valuation Date	Projected Assets	Projected UAAL	Projected Funded Status	Fiscal Year Ending	Total Contribution	Employee Contributions	Employer Contributions	Total Contribution	Employee Contributions	Employer Contributions
0	12/31/2024	$ 303,813,027	$ 171,415,562	64%	6/30/2026	35.99%	3.75%	32.24%	$ 25,071,640	$ 2,612,355	$ 22,459,285
1	12/31/2025	317,475,657	171,180,643	65%	6/30/2027	36.54%	3.75%	32.79%	26,091,155	2,677,664	23,413,491
2	12/31/2026	328,532,024	172,984,149	66%	6/30/2028	37.50%	3.75%	33.75%	27,446,052	2,744,605	24,701,447
3	12/31/2027	351,555,880	162,558,744	68%	6/30/2029	36.91%	3.75%	33.16%	27,689,590	2,813,220	24,876,370
4	12/31/2028	373,230,061	153,984,547	71%	6/30/2030	36.66%	3.75%	32.91%	28,189,594	2,883,551	25,306,043
5	12/31/2029	393,921,805	146,219,404	73%	6/30/2031	36.66%	3.75%	32.91%	28,894,334	2,955,640	25,938,694
6	12/31/2030	415,500,587	137,476,136	75%	6/30/2032	36.66%	3.75%	32.91%	29,616,692	3,029,531	26,587,161
7	12/31/2031	438,094,947	127,677,371	77%	6/30/2033	36.66%	3.75%	32.91%	30,357,109	3,105,269	27,251,840
8	12/31/2032	461,800,592	116,740,229	80%	6/30/2034	36.66%	3.75%	32.91%	31,116,037	3,182,901	27,933,136
9	12/31/2033	486,837,766	104,575,946	82%	6/30/2035	36.66%	3.75%	32.91%	31,893,938	3,262,473	28,631,465
10	12/31/2034	513,372,915	91,089,467	85%	6/30/2036	36.66%	3.75%	32.91%	32,691,286	3,344,035	29,347,251
11	12/31/2035	541,557,549	76,179,017	88%	6/30/2037	36.66%	3.75%	32.91%	33,508,568	3,427,636	30,080,932
12	12/31/2036	571,651,665	59,735,638	91%	6/30/2038	36.66%	3.75%	32.91%	34,346,283	3,513,327	30,832,956
13	12/31/2037	603,856,555	41,642,693	94%	6/30/2039	36.66%	3.75%	32.91%	35,204,940	3,601,160	31,603,780
14	12/31/2038	638,421,016	21,775,347	97%	6/30/2040	36.66%	3.75%	32.91%	36,085,063	3,691,189	32,393,874
15	12/31/2039	675,619,413	-	100%	6/30/2041	13.81%	3.75%	10.06%	13,933,254	3,783,469	10,149,785
16	12/31/2040	703,814,783	-	100%	6/30/2042	13.81%	3.75%	10.06%	14,281,585	3,878,055	10,403,530
17	12/31/2041	722,172,194	-	100%	6/30/2043	13.81%	3.75%	10.06%	14,638,625	3,975,007	10,663,618
18	12/31/2042	741,695,607	-	100%	6/30/2044	13.81%	3.75%	10.06%	15,004,591	4,074,382	10,930,209
19	12/31/2043	762,548,399	-	100%	6/30/2045	13.81%	3.75%	10.06%	15,379,705	4,176,241	11,203,464
20	12/31/2044	784,843,471	-	100%	6/30/2046	13.81%	3.75%	10.06%	15,764,198	4,280,648	11,483,550
21	12/31/2045	808,656,965	-	100%	6/30/2047	13.81%	3.75%	10.06%	16,158,303	4,387,664	11,770,639
22	12/31/2046	834,117,891	-	100%	6/30/2048	13.81%	3.75%	10.06%	16,562,260	4,497,355	12,064,905
23	12/31/2047	861,330,464	-	100%	6/30/2049	13.81%	3.75%	10.06%	16,976,317	4,609,789	12,366,528
24	12/31/2048	890,359,906	-	100%	6/30/2050	13.81%	3.75%	10.06%	17,400,725	4,725,034	12,675,691
25	12/31/2049	921,076,693	-	100%	6/30/2051	13.81%	3.75%	10.06%	17,835,743	4,843,160	12,992,583

This is an open group projection, meaning it maintains the current active population size by replacing exiting active members with new hires (which differs from the closed group projection in the GASB Statement Nos. 67/68 report). Projected Assets assume mid-year cash flows and are projected to increase at the current assumed market rate of return of 6.75%. The MECRS objective is to reach 100% funding by 2042. In addition, it is the intention of the MECRS to reach 75% funding on or before December 31, 2030. The Employer Contribution is projected to increase as a percent of pay over the next two years before falling for two years due to scheduled phase-in of losses and gains, respectively, in the Asset Valuation Method. While MECRS contributes a level percent of pay, the required dollar contribution for an open group is projected to increase with wage inflation (2.5% for MECRS). When the Retirement System is 100% funded, the Employer Contribution is equal to the Normal Cost. Projections do not predict the future. Rather, they provide an illustration of certain benchmarks under a certain set of assumptions.

Summary of System Liabilities and Resources as of December 31, 2024





Summary of Current Asset Information Furnished for the Valuation

Balance Sheet

Reported Assets - Funding Value as of December 31	2024	2023
Cash & Equivalents	$ 9,326,835	$ 8,154,372
Investments	314,451,211	287,375,255
Property, Plant, Equipment	2,652	6,716
Accrued Interest & Dividends	28,423	33,304
Receivable and Tax Reclaims	-	160,897
Employer Contributions Receivable	395,459	414,154
Employee Contributions Receivable	59,974	59,539
Accounts Payable	(173,199)	(143,369)
Benefits Payable	(2,222,288)	(2,113,963)
Additional Contribution Account	994,493	1,016,535
Market Value Total	$ 322,863,560	$ 294,963,440
Funding Value Adjustment	5,551,308	15,650,592
Total Valuation Assets	**$ 328,414,868**	**$ 310,614,032**

Revenues and Expenditures

	2024	2023
Funding Value - January 1	$ 310,614,032	$ 292,499,810
Revenues		
Employees' Contributions*	3,555,705	3,358,433
Employer Contributions	23,644,849	22,060,563
Recognized Investment Income	20,569,755	21,122,621
Total	$ 47,770,309	$ 46,541,617
Expenditures		
Benefit Payments	$ 27,643,108	$ 26,215,436
Refund of Member Contributions	554,205	598,493
Expenses and Fees	1,772,160	1,613,466
Total	$ 29,969,473	$ 28,427,395
Funding Value - December 31	**$ 328,414,868**	**$ 310,614,032**
Rate of Return Recognized	6.4 %	7.0 %

* *Includes service buybacks, service upgrades and additional employee contributions.*

Development of Funding Value of Assets

Year Ended December 31:	2022	2023	2024	2025	2026	2027	2028
Assumed Investment Return	6.75%	6.75%	6.75%	6.75%			
A. Funding Value Beginning of Year	$283,861,300	$292,499,810	$310,614,032				
B. Market Value End of Year	263,660,164	294,963,440	322,863,560				
C. Market Value Beginning of Year	307,390,606	263,660,164	294,963,440				
D. Non-Investment Net Cash Flow	(2,655,517)	(2,238,424)	(1,889,152)				
D1. Post-Valuation Adjustment	0	0	0				
E. Investment Income							
E1. Market Total: B - C - D - D1	(41,074,925)	33,541,700	29,789,272				
E2. Amount for Immediate Recognition	19,071,014	19,668,190	20,902,688				
E3. Amount for Phased-In Recognition: E1-E2	(60,145,939)	13,873,510	8,886,584				
F. Phased-In Recognition of Investment Income							
F1. Current Year: 0.20 x E3	(12,029,188)	2,774,702	1,777,317				
F2. First Prior Year	3,073,696	(12,029,188)	2,774,702	$ 1,777,317			
F3. Second Prior Year	3,190,773	3,073,696	(12,029,188)	2,774,702	$ 1,777,317		
F4. Third Prior Year	3,674,474	3,190,773	3,073,696	(12,029,188)	2,774,702	$ 1,777,317	
F5. Fourth Prior Year	(5,686,742)	3,674,473	3,190,773	3,073,694	(12,029,187)	2,774,702	$ 1,777,316
F6. Total Recognized Investment Gain (Loss)	(7,776,987)	684,456	(1,212,700)	(4,403,475)	(7,477,168)	4,552,019	1,777,316
G. Preliminary Funding Value End of Year: A + D + E2 + F6	292,499,810	310,614,032	328,414,868				
H. Funding Value after Application of 20% Corridor Limit	$292,499,810	$310,614,032	**$328,414,868**				
I. Difference between Market & Funding Value	(28,839,646)	(15,650,592)	(5,551,308)	(1,147,833)	6,329,335	1,777,316	0
J. Recognized Rate of Return	4.0 %	7.0 %	6.4 %				
K. Market Rate of Return	(13.4)%	12.8 %	10.1 %				
L. Ratio of Funding Value to Market Value	110.9 %	105.3 %	101.7 %				

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased-in over a closed five-year period. During periods when investment performance exceeds the assumed rate, the Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, the Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is unbiased with respect to Market Value. At any time, it may be either greater or less than Market Value. If actual and assumed rates of retirement income are exactly equal for four consecutive years, the Funding Value will become equal to Market Value.

Allocation of Funding Value of Assets
Year Ended December 31, 2024

(A) Total Market Value	$322,863,560
(B) Pension Market Value	$298,677,572
(C) Ratio: (B)/(A)	92.5089%
(D) Total Funding Value	$328,414,868
(E) Pension Funding Value: (D) x (C)	**$303,813,027**
(F) Health Funding Value: (D) - (E)	**$ 24,601,841**

Development of Unfunded Actuarial Accrued Liability
Year Ended December 31, 2024

	Pension	Health
Present Value of Future Benefits - Retirees	$296,195,250	$23,559,500
Present Value of Future Benefits - Deferreds	9,369,836	898,788
Present Value of Future Benefits - Actives	240,633,860	18,870,628
Present Value of Future Benefits - Total	$546,198,946	$43,328,916
Present Value of Future Normal Cost	70,970,357	6,932,107
Actuarial Accrued Liability	**$475,228,589**	**$36,396,809**
Funding Value of Assets	303,813,027	24,601,841
Unfunded Actuarial Accrued Liability	**$171,415,562**	**$11,794,968**
Funded Status	63.9%	67.6%
Prior Year Funded Status	62.7%	64.5%

Actuarial Accrued Liabilities and Valuation Assets
Comparative Statement – Pension Only

Valuation Date December 31	Actuarial Accrued Liability (AAL)	Funding Value of Assets	Unfunded Actuarial Accrued Liability (UAAL)	Funded Status *	Ratio of UAAL to Valuation Payroll
2015	$ 314,355,740	$ 198,932,682	$ 115,423,058	63.3 %	218.0 %
2016	321,887,981	205,115,203	116,772,778	63.7 %	220.8 %
2017#	344,418,296	217,083,942	127,334,354	63.0 %	238.6 %
2018	355,948,216	220,842,313	135,105,903	62.0 %	260.9 %
2019	370,984,435	229,353,610	141,630,825	61.8 %	267.8 %
2020#	413,910,761	245,208,013	168,702,748	59.2 %	310.9 %
2021	426,344,434	265,274,578	161,069,856	62.2 %	291.1 %
2022	439,499,792	272,459,445	167,040,347	62.0 %	293.2 %
2023#	459,815,673	288,109,669	171,706,004	62.7 %	276.1 %
2024	475,228,589	303,813,027	171,415,562	63.9 %	255.3 %

Actuarial Accrued Liabilities and Valuation Assets
Comparative Statement – Health Subsidy Only

Valuation Date December 31	Actuarial Accrued Liability (AAL)	Funding Value of Assets	Unfunded Actuarial Accrued Liability (UAAL)	Funded Status *	Ratio of UAAL to Valuation Payroll
2015	$ 21,646,019	$ 10,259,881	$ 11,386,138	47.4 %	21.5 %
2016	23,023,666	11,150,682	11,872,984	48.4 %	22.4 %
2017#	26,405,178	12,410,109	13,995,069	47.0 %	26.2 %
2018	28,712,126	13,284,952	15,427,174	46.3 %	29.8 %
2019	30,334,669	14,554,669	15,780,000	48.0 %	29.8 %
2020#	35,238,659	16,432,611	18,806,048	46.6 %	34.7 %
2021	37,693,363	18,586,722	19,106,641	49.3 %	34.5 %
2022	38,994,461	20,040,365	18,954,096	51.4 %	33.3 %
2023	34,864,381	22,504,363	12,360,018	64.5 %	19.9 %
2024	36,396,809	24,601,841	11,794,968	67.6 %	17.6 %

After changes in benefit provisions, or actuarial assumptions/methods.

* *The funded status shown herein is not appropriate for estimating the cost or ability to settle the System's obligations. A funded status of 100% or greater is not an indication of the need for future employer contributions. A funded status below 100% is an indication that future employer contributions are needed.*

Derivation of Experience Gain (Loss)
Year Ended December 31, 2024

Actual experience will never (except by coincidence) match exactly with assumed experience. Gains and losses often cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) is shown below, along with a year-by-year comparative schedule.

		Pension	Health
(1)	Unfunded Actuarial Accrued Liability at the start of the year	$171,706,004	$12,360,018
(2)	Total normal cost	8,431,498	886,406
(3)	Actual contributions (employer and employee)	24,793,241	2,352,901
(4)	Interest accrual: [(1) + 1/2 ((2) - (3))] x 0.0675	11,037,946	784,807
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	166,382,207	11,678,330
(6)	Change from new assumptions and methodology	0	0
(7)	Change from ad-hoc COLA increases (above or below assumed)	0	N/A
(8)	Change from Chapter 159 service upgrade	54,412	N/A
(9)	Expected UAAL after changes: (5) + (6) + (7) + (8)	166,436,619	11,678,330
(10)	Actual UAAL at end of year	171,415,562	11,794,968
(11)	Gain (loss): (9) - (10)	(4,978,943)	(116,638)
(12)	Gain (loss) as percent of actuarial accrued liabilities at start of year	(1.1)%	(0.3)%

Gain (Loss) Recent History								
	Pension				Health			
Year	Liability	Investment	Total	% of BOY AAL	Liability	Investment	Total	% of BOY AAL
2015	$ (3,964,735)	$ (4,711,077)	$ (8,675,812)	(2.9)%	$ (969,430)	$ (242,972)	$(1,212,402)	(6.2)%
2016	3,083,182	(1,964,143)	1,119,039	0.4	(71,051)	(106,777)	(177,828)	(0.8)
2017	(732,416)	261,022	(471,394)	0.0	117,601	14,922	132,523	0.6
2018	364,325	(7,734,810)	(7,370,485)	(2.1)	(881,014)	(465,294)	(1,346,308)	(5.1)
2019	(4,017,004)	(3,004,902)	(7,021,906)	(2.0)	(153,836)	(190,690)	(344,526)	(1.2)
2020	(2,866,787)	3,654,847	788,060	0.2	111,221	244,929	356,150	1.2
2021	(1,086,123)	7,052,902	5,966,779	1.4	(920,480)	494,168	(426,312)	(1.2)
2022	(1,568,280)	(7,244,154)	(8,812,433)	(2.1)	424,477	(532,833)	(108,356)	(0.3)
2023	(7,848,311)	558,266	(7,290,044)	(1.7)	5,968,432	126,189	6,094,621	15.6
2024	(3,840,335)	(1,138,608)	(4,978,943)	(1.1)	(42,546)	(74,092)	(116,638)	(0.3)
Five-Year Total	**$ (17,209,835)**	**$ 2,883,253**	**$ (14,326,582)**		**$ 5,541,103**	**$ 258,362**	**$ 5,799,465**	
Ten-Year Total	**$ (22,476,483)**	**$ (14,270,658)**	**$ (36,747,140)**		**$ 3,583,373**	**$ (732,449)**	**$ 2,850,924**	

Schedule of Changes in Unfunded Actuarial Accrued Liability Other Than Annual Gains (Losses) – Pension Only

Schedule of Changes in Pension UAAL Other Than Gains (Losses) #		
Date Established	Original Amount	Description
01/01/1991	$ 2,656,461	Initial Unfunded
01/01/1997	32,202	Plan Amendment
01/01/1997	588,165	1996 COLA
01/01/1998	602,888	1997 COLA
01/01/1999	4,750,497	Plan Amendment
01/01/1999	62,532	Assumption Change
01/01/1999	866,215	1998 COLA
01/01/2000	847,614	1999 COLA
01/01/2001	958,172	2000 COLA
01/01/2002	1,047,075	2001 COLA
01/01/2003	1,214,958	2002 COLA
01/01/2003	(3,319,777)	Assumption Change
01/01/2003	6,317,683	Plan Amendment
12/31/2004	231,803	Assumption Change
12/31/2004	1,809,405	2004 COLA
12/31/2005	1,310,995	2005 COLA
12/31/2005	5,368,777	Phase-in of COLA Assumption
12/31/2005	1,205,702	Chapter 159 Upgrade (Employer)
12/31/2006	787,237	2006 COLA
12/31/2006	7,794,903	Phase-in of COLA Assumption
12/31/2006	1,313,426	Chapter 159 Upgrade (Employer)
12/31/2006	2,025,864	Severance Load
12/31/2007	330,568	2007 COLA
12/31/2007	4,220,982	Phase-in of COLA Assumption
12/31/2007	223,538	Chapter 159 Upgrade (Employer)
12/31/2008	469,373	2008 COLA
12/31/2008	(839,918)	Miscellaneous Technical Change in Treatment of COLA Assumption
12/31/2008	193,614	Chapter 159 Upgrade (Employer)
12/31/2008	(122,243)	Retirement Eligibility Correction
12/31/2009	307,468	Chapter 159 Upgrade (Employer)
12/31/2009	10,706,101	Assumption and Methodology Change
12/31/2010	188,526	Chapter 159 Upgrade (Employer)
12/31/2010	(1,566,250)	No Ad-Hoc COLA this Year
12/31/2011	80,224	Chapter 159 Upgrade (Employer)
12/31/2012	(1,704,580)	No Ad-Hoc COLA this Year
12/31/2012	376,519	Chapter 159 Upgrade (Employer)
12/31/2012	(3,760,147)	Assumption and Methodology Change
12/31/2013	261,306	2013 COLA
12/31/2013	297,764	Chapter 159 Upgrade (Employer)
12/31/2014	293,410	2014 COLA
12/31/2014	373,599	Chapter 159 Upgrade (Employer)

 # Positive numbers indicate an increase in UAAL; negative numbers indicate a decrease in UAAL.

Schedule of Changes in Unfunded Actuarial Accrued Liability Other Than Annual Gains (Losses) – Pension Only

Schedule of Changes in Pension UAAL Other Than Gains (Losses) #		
Date Established	Original Amount	Description
12/31/2015	$ 498,682	Chapter 159 Upgrade (Employer)
12/31/2016	(1,979,746)	2016 COLA
12/31/2016	217,611	Chapter 159 Upgrade (Employer)
12/31/2017	(409,476)	2017 COLA
12/31/2017	203,132	Chapter 159 Upgrade (Employer)
12/31/2017	9,866,319	Assumption and Methodology Change
12/31/2018	194,165	Chapter 159 Upgrade (Employer)
12/31/2019	171,327	Chapter 159 Upgrade (Employer)
12/31/2020	126,923	Chapter 159 Upgrade (Employer)
12/31/2020	29,031,182	Assumption and Methodology Change
12/31/2021	205,713	Chapter 159 Upgrade (Employer)
12/31/2022	247,136	Chapter 159 Upgrade (Employer)
12/31/2022	381,764	2022 COLA
12/31/2023	118,639	Chapter 159 Upgrade (Employer)
12/31/2023	1,465,950	Assumption and Methodology Change
12/31/2024	54,412	Chapter 159 Upgrade (Employer)

 # Positive numbers indicate an increase in UAAL; negative numbers indicate a decrease in UAAL.

Comments

Comment A

Results: The Retirement System is 63.9% funded for pension benefits and 67.6% funded for health subsidy benefits as of December 31, 2024. The pension Unfunded Actuarial Accrued Liability (UAAL) of $171,415,562 and the health subsidy UAAL of $11,794,968 is amortized over a closed 15-year period.

Comment B

Pension: Experience during the year was less favorable than assumed. The primary source of the experience loss was higher-than-expected salary increases. On average for continuing active members, pays increased 5.3% versus 4.6% expected. In addition, there was a very small loss due to retiree mortality. Liability losses were partially offset by small gains due to more terminations than expected and lower benefits at retirement than expected for new retirees (despite the higher-than-expected FAE at retirement shown in Comment E).

In addition to liability losses, the plan also experienced an investment loss. While the plan experienced a 10.1% rate of return on a market value basis, on a funding value basis, the recognized return was only 6.4% compared to a 6.75% assumed rate of return. One-fifth of this year's market gain was recognized in this year's funding value and one-fifth of this year's market gain will be recognized in each of the next four years. Overall, the pension experience loss was approximately 1.1% of beginning of year liabilities. The pension funding status increased from 62.7% to 63.9%.

Health: Experience during the year was less favorable than assumed. The primary sources of health experience loss was due to lower-than-expected retiree mortality (4 deaths versus 8 expected). In addition, there was a loss due to investment return (6.4% recognized versus 6.75% assumed; see asset related comment under pension section).

Losses were partially offset by a gain due to lower-than-expected stipend benefits for post-65 retirees eligible to receive the full stipend (i.e., retirees with at least 20 years of service). The health stipend increases 4% each year, and is subject to a maximum of the plan's monthly premium (the full stipend was reported to be $405.16 for this valuation versus the Medicare Advantage premium for post-65 retirees of $302.62 for the City and $310.00 for the School District). Overall, the health experience loss was about 0.3% of beginning of year liabilities. The health funding status increased from 64.5% to 67.6%.

Comment C

Benefit Enhancements:

1. The previously adopted SB 402 allows for members to upgrade their benefit multiplier under Chapter 159 from 1.5% to 2.0% per year of service rendered prior to 1999 when they choose. Liabilities increased by $108,824 as a result of members electing to purchase this benefit during 2024. An additional $54,412 in member contributions was contributed as a result of these elections.
2. COLA increases during 2024 were assumed to be 1.00% of current pensions. In 2024, actual increases were 1.00% of current pensions.

Comments

Comment D

There were no changes in actuarial assumptions or methods for this valuation. However, we recommend that a 5-year experience study be completed prior to the December 31, 2025 valuation. The prior experience study was done after completion of the December 31, 2019 valuation.

When System experience deviates from expectations, a gain or loss is generated. This gain or loss is then applied to the expected unfunded liability and amortized over a period of future years in order to fund the System. Over time, it is expected that the gains and losses will offset each other. If they do not, then one or more of the actuarial assumptions may need to be modified to reflect actual emerging experience.

The experience study was approved at the March 19, 2025 Board meeting. We will present our findings to the Board and recommend that they be adopted for the 2025 valuation.

Comment E

The load for end of career payments affecting final average earnings is currently 13%. Below is a historical schedule of these increases over the last 10 years.

Year Ended December 31,	Average Increase in Final Average Earnings from Expected Amount
2015*	17.4%
2016	10.1%
2017	11.9%
2018	10.2%
2019	13.7%
2020#	13.2%
2021#	14.9%
2022#	13.4%
2023#	14.5%
2024#	16.9%
5-Year Average	**14.6%**
10-Year Average	**13.6%**

* *Final Average Earnings before and after lump sums in 2015 were calculated based on member data as well as option factors from the previous actuary. For all other years, this lump sum information was provided.*

\# *Excludes members with fewer than 3 years of full pay history.*

Comments

Comment F

Health Valuation: Effective with the December 31, 2007 valuation, the utilization assumption was set at 60% for the post-retirement health subsidy. Effective with the December 31, 2012 valuation, this assumption is 55%. Below is a 10-year historical schedule of the election percentage for new retirees.

New Retirements in Year	New Retirees	New Recipients Electing Health Care Subsidy	Election %
2015	89	55	61.8%
2016	53	27	50.9%
2017	55	32	58.2%
2018	57	34	59.6%
2019	60	30	50.0%
2020	68	33	48.5%
2021	66	40	60.6%
2022	46	26	56.5%
2023	58	34	58.6%
2024	53	23	43.4%

Comment G

Investment Return: The current version of ASOP No. 27 suggests that either the expected geometric return (i.e., 50th percentile) or the expected arithmetic return is suitable for use as a reasonable investment return assumption. Because GRS is a benefit consulting firm and does not develop or maintain capital market expectations, we request and monitor forward-looking expectations developed by several major forecasting firms. Our analysis based on the 2024 GRS Capital Market Assumption Modeler (CMAM) is that the current assumption of 6.75% is at the high end of this range. Therefore, the Board may wish to consider lowering this assumption for future valuations.

The higher the investment return assumption, the less margin that will exist for actuarial standards reasonability purposes in future years if capital market expectations are lowered from their current levels. In other words, if capital market assumptions are lowered from current levels, it may become necessary to lower the investment return assumption prior to the next assumption review. The Actuarial Standards of Practice require the investment return assumption to be reviewed on an annual basis.

Comments

Comment H

Retiree Health Benefits: Post-retirement health care benefits are funded in part by retired members (via co-pays, deductibles, etc.), but mostly by employer contributions to the Retirement System that are permitted (up to certain limits) by §401(h) of the U.S. Internal Revenue Code. IRC §401(h) permits a defined benefit plan to provide medical benefits for retired employees if, among other things:

- A separate medical care account is maintained.
- The benefits satisfy non-discrimination rules.
- The medical benefits, along with any life insurance provided by the plan, are subordinate to the retirement benefits. Benefits are considered subordinate if they do not exceed 25% of the aggregate contributions other than contributions to fund past service liabilities.

The health care contribution rate was determined to pass the 25% test for the 2026 City fiscal year as follows:

Employer Pension Rate (not more than normal cost)	10.06%
Employee Pension Rate	3.75%
Total Pension Rate*	13.81%
Maximum Health Rate (1/3 x Pension Rate)	4.60%
Employee Health Rate	1.25%
Maximum Employer Health Rate	3.35%
Actual Employer Health Rate	1.62%

* *Lesser of the actual contribution or projected unit credit normal cost rate.*

Although the IRC §401(h) allows for a much more complicated test, the results of the simplified approach illustrated above indicate that the more complicated test is not warranted.

Comment I

We certify that the valuation is complete and accurate and was made in accordance with generally recognized actuarial methods. The actuarial assumptions that will be summarized in Section C of the valuation report are, in aggregate, a reasonable representation of the past and anticipated future experience of the System.

Other Observations

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 6.75% on the Funding Value of Assets), it is expected that:

1) The employer Normal Cost as a percentage of pay will remain approximately level year to year*;
2) The Unfunded Actuarial Accrued Liability (UAAL) will be fully amortized after 15 years; and
3) The funded status of the plan will increase gradually towards 100%.

* *Service rendered on or after January 1, 1999 has a higher benefit multiplier than service rendered beforehand, unless members elect to upgrade their pre-1999 service. Normal Costs are gradually increasing to the post-1999 benefit level as members with pre-1999 service are replaced or upgrade their service.*

Limitations of Funded Status Measurement

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
2) The measurement is inappropriate for assessing the need for or the amount of future employer contributions.
3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; 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, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability Mismatch Risk** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base. The continuing ability of the plan sponsor to make the contributions necessary to fund the plan is outside our scope of expertise and was not performed by GRS;
4. **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

Plan Maturity Measures

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	Pension		Health	
	2024	2023	2024	2023
Ratio of the market value of assets to total payroll	4.45	4.40	0.36	0.34
Ratio of actuarial accrued liability to payroll	7.08	7.39	0.54	0.56
Ratio of actives to retirees and beneficiaries	1.06	1.03	2.45	2.44
Ratio of net cash flow to market value of assets	-0.84%	-1.17%	2.61%	4.46%
Duration of the actuarial accrued liability	13.46	13.42	14.97	14.95

Ratio of Market Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 4.0 times the payroll, a return on assets 5% different than assumed would equal 20% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 7.5 times the payroll, a change in liability 2% other than assumed would equal 15% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

Ratio of Actives to Retirees and Beneficiaries

A young plan with many active members and few retirees will have a high ratio of actives to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Low-Default-Risk Obligation Measure (LDROM)

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the "Low-Default-Risk Obligation Measure" (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> "The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan**. The calculation and disclosure of this additional measure is **not intended to suggest that this is the "right" liability measure** for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.**"

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the Retirement System is to finance each member's retirement benefits over the period from the member's date of hire until the member's projected date of retirement (entry age actuarial cost method) as a level percentage of payroll. To fulfill this objective, the discount rate that is used to value the accrued liabilities of the Retirement System is set equal to the **expected return** on the Plan's diversified portfolio of assets (referred to sometimes as the investment return assumption). For MECRS, the investment return assumption is 6.75%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. The LDROM results presented in this report are based on the entry age actuarial cost method and discount rates based upon the December 2024 Treasury Yield Curve Spot Rates (monthly average). The 1-, 5-, 10- and 30-year rates follow: 4.29%, 4.29%, 4.37% and 4.64%. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The difference between the two measures (Valuation and LDROM) is one illustration of the savings the sponsor anticipates by taking on risk in a diversified portfolio:

Valuation Accrued Liabilities (Pension Only)	LDROM (Pension Only)
$475,228,589	$610,930,601

SECTION B

BENEFIT PROVISIONS AND VALUATION DATA

Summary of Benefit Provisions as of December 31, 2024

Eligibility	Amount
NORMAL RETIREMENT	
Members are eligible to retire at age 60.	Straight life pension equals 2.0% of 3-year Final Average Earnings (FAE) times service on and after January 1, 1999 *plus* 1.5% of FAE times service before January 1, 1999.
Members with at least 20 years of service at retirement are eligible for a minimum benefit if employed on or before January 1, 1974.	Minimum benefit for eligible members is 50% of FAE.
EARLY RETIREMENT	
Members are eligible to retire early if the sum of age and service is at least 80, or at age 55 with at least 20 years of service.	Computed as a normal retirement pension. If the early retirement occurs prior to the member attaining age 60, the benefit is reduced by 1/6 of 1% for each month that the early retirement precedes age 60.
DEFERRED RETIREMENT	
Members are eligible to retire with a deferred benefit after attaining at least 5 years of service, provided they do not take a refund of member contributions.	Pension is computed as a normal retirement pension, based on service and FAE on date of termination. Commencement of benefits begins at age 60.
NON-DUTY DISABILITY	
Members are eligible upon attainment of 15 years of service.	Pension is computed as a normal retirement pension based on service and FAE as of date of disability.
DUTY DISABILITY	
No age or service requirement.	Pension is computed as a normal retirement pension based on service and FAE as of date of disability. Minimum duty disability benefit is 50% of FAE.

Summary of Benefit Provisions
as of December 31, 2024

Eligibility	Amount
ORDINARY DEATH-IN-SERVICE	
(1) Any age with fewer than 5 years of service.	Beneficiary receives member's contributions and accumulated interest, and an additional lump sum equal to one year's salary.
(2) Any age with 5 or more years of service.	Beneficiary receives the option of (1) the greater of (a) 50% of the accrued service retirement benefit (without any early retirement reduction); or (b) pension computed as normal or early retirement benefit (depending on eligibility), actuarially reduced as if the member had elected the 100% Joint & Survivor benefit; or (2) lump sum equal to 100% of base salary plus the member's accumulated contributions (including interest).
DUTY DEATH-IN-SERVICE	
Death as a result of a work-related accident; not caused by willful neglect of the member.	The option of (1) the greater of (a) 50% of FAE, or (b) pension computed as an early retirement benefit actuarially reduced as if the member had elected the 100% Joint & Survivor benefit; or (2) a lump sum as described below; options payable to the spouse or child(ren) under age 18. If no spouse or child(ren) are alive at the time of the member's death, a lump sum is payable to the member's estate in the amount of 100% of base salary plus the member's accumulated contributions (including interest) plus accrued fringe benefits not paid at the time of death.
MEMBER CONTRIBUTIONS	
	3.75% of pay for service on and after January 1, 1999. 2.5% of pay for service prior to January 1, 1999. Contributions are credited with 5.0% interest per annum. Members may elect to contribute additional contributions which are accounted for separately. At retirement, the additional contribution balance is annuitized to provide an additional benefit within certain limits.

Summary of Benefit Provisions
as of December 31, 2024

OPTIONAL FORMS OF PAYMENT

In lieu of the straight life benefit, a member may elect an actuarially reduced benefit in one of the following forms:

100% Joint & Survivor with pop-up
66 2/3 % Joint & Survivor with pop-up
50% Joint & Survivor with pop-up
10-year Certain & Life Option

The actuarial factors for optional forms of payment are based on the 1983 Group Annuity Mortality Table and 7.5% interest.

SERVICE UPGRADE

Members may elect to purchase an increase in their benefit multiplier for service rendered before 1999 under Chapter 159 (or Senate Bill 402). The cost to the member is ½ of the actuarially determined increase in System costs and results in a benefit based on 2% of FAE for the time purchased.

HEALTH SUBSIDY

Current and future retired members who are in receipt of an annuity benefit may elect to participate in a monthly health insurance subsidy. Spouses, dependents, and/or beneficiaries are not eligible for any subsidy. The full amount of the monthly health insurance subsidy is $200 as of January 1, 2006 and increases by 4% annually beginning January 1, 2007, subject to a maximum of the plan's monthly premium. The full $200 is prorated based on the member's service at retirement, as shown in the schedule below. Members who were already retired as of March 2006 are entitled to 50% of the subsidy available to members retired after March 2006. Active members must contribute 1.25% of pay. Member contributions for the health subsidy are non-refundable.

	% of Full Subsidy Payable	
Service at Retirement	**Active on or after March 1, 2006**	**Terminated Vested or Retired on March 1, 2006**
Fewer than 10 years	25.0%	12.5%
10 years or more, but fewer than 15 years	50.0%	25.0%
15 years or more, but fewer than 20 years	75.0%	37.5%
20 years or more	100.0%	50.0%

Comparative Statement – Retiree Valuation Data

Year Ended December 31	Added to Rolls		Removed from Rolls		Rolls End of Year		Average Pension
	No.	Annual Pensions*	No.	Annual Pensions	No.	Annual Pensions	
2015	89	$ 2,910,593	24	$ 323,204	821	$ 15,493,622	$ 18,872
2016	53	818,730	18	240,803	856	16,071,550	18,775
2017	55	1,372,546	29	410,260	882	17,033,836	19,313
2018	60	1,740,534	28	312,406	914	18,461,964	20,199
2019	70	1,812,195	29	368,448	955	19,905,711	20,844
2020	78	1,685,470	45	650,232	988	20,940,949	21,195
2021	79	2,146,964	26	469,767	1,041	22,618,146	21,727
2022	54	1,710,897	37	487,028	1,058	23,842,015	22,535
2023	64	1,854,474	34	494,015	1,088	25,202,474	23,164
2024	58	2,108,739	34	652,263	1,112	26,658,950	23,974

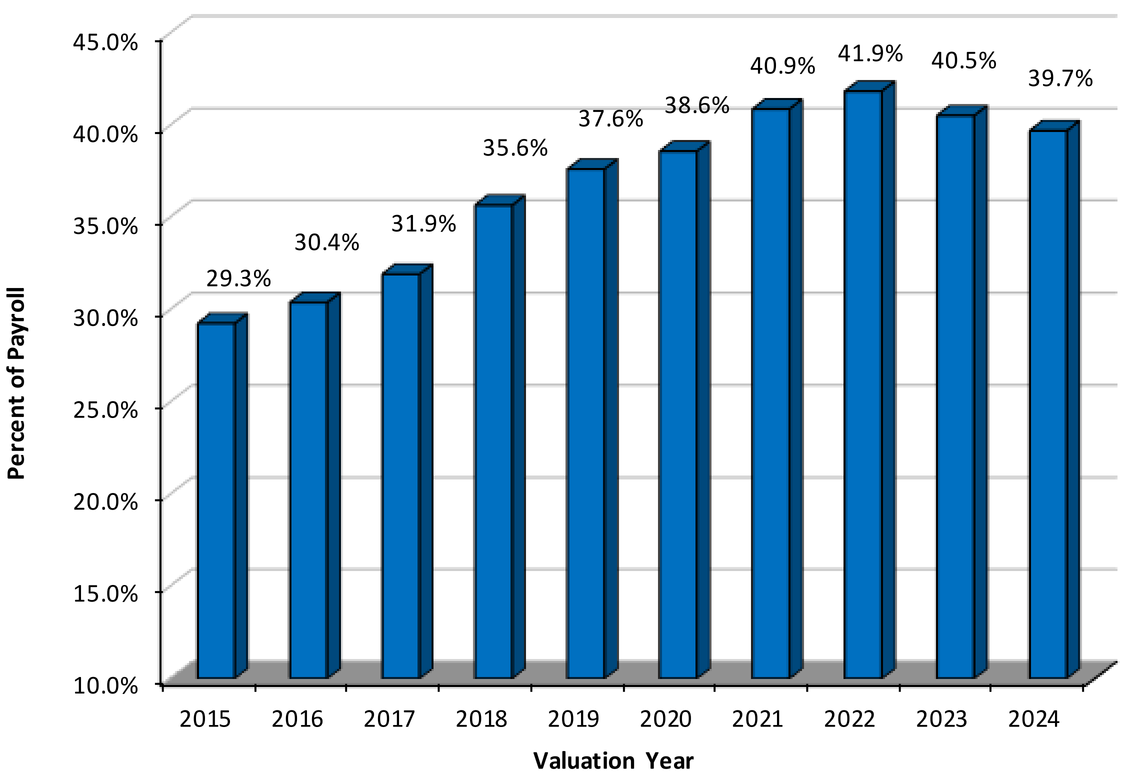
* *Includes adjustments due to COLA.*

26 retirees/beneficiaries and $492,580 in benefits were expected to come off the rolls for the December 31, 2024 valuation; 34 retirees/beneficiaries and $652,263 in benefits were actually removed from the rolls.

Comparative Statement – Retiree Valuation Data

Valuation Date December 31	Retirees & Beneficiaries					
	Pension			Health		
	Number	Annual Benefits	% of Payroll	Number	Annual Benefits	% of Payroll
2015	821	$ 15,493,622	29.3%	291	$ 791,658	1.5%
2016	856	16,071,550	30.4%	310	880,155	1.7%
2017	882	17,033,836	31.9%	325	975,855	1.8%
2018	914	18,461,964	35.6%	354	1,109,526	2.1%
2019	955	19,905,711	37.6%	375	1,230,836	2.3%
2020	988	20,940,949	38.6%	394	1,356,437	2.5%
2021	1,041	22,618,146	40.9%	422	1,561,419	2.8%
2022	1,058	23,842,015	41.9%	438	1,662,914	2.9%
2023	1,088	25,202,474	40.5%	459	1,564,598	2.5%
2024	1,112	26,658,950	39.7%	483	1,695,744	2.5%

Pension Benefits as a Percent of Payroll



Retirees and Beneficiaries December 31, 2024
Tabulated by Type of Pensions Being Paid

Type of Pensions Being Paid	Number	Annual Pensions
Age and Service Pensions		
Regular Pension - Benefit terminating at death of retiree	585	$ 12,210,151
For life of member, but not less than 10 years	45	925,918
100% Joint & Survivor	207	5,709,721
66 2/3% Joint & Survivor	72	2,699,441
50% Joint & Survivor	81	2,878,491
Survivor Beneficiary	89	1,457,520
Total age and service pensions	1,079	$ 25,881,242
Casualty Pensions		
Duty Disability	21	$ 519,654
Non-Duty Disability	12	258,054
Duty Death - Survivor Benefits	0	0
Non-Duty Death - Survivor Benefits	0	0
Total casualty pensions	33	$ 777,708
Total Pensions Being Paid	**1,112**	**$ 26,658,950**

Each member is counted only once in the above table. Members who have purchased an additional annuity may elect a different payment option for the additional purchased benefits. All benefit payments are included in the table.

Retirees and Beneficiaries December 31, 2024
Pension Benefits Tabulated by Attained Ages

Attained Age	Age and Service		Casualty		Totals	
	Number	Annual Pensions	Number	Annual Pensions	Number	Annual Pensions
40-44	2	$ 24,243	0	$ -	2	$ 24,243
45-49	1	8,168	1	28,255	2	36,423
50-54	5	165,727	3	77,017	8	242,744
55-59	20	789,032	3	64,388	23	853,420
60-64	144	4,031,803	5	114,533	149	4,146,336
65-69	240	6,041,230	12	281,811	252	6,323,041
70-74	260	7,077,157	6	165,027	266	7,242,184
75-79	195	4,384,481	2	42,791	197	4,427,272
80-84	100	1,752,666	0	-	100	1,752,666
85-89	71	1,142,445	1	3,886	72	1,146,331
90-94	32	356,053	0	-	32	356,053
95-100	9	108,237	0	-	9	108,237
Totals	**1,079**	**$ 25,881,242**	**33**	**$ 777,708**	**1,112**	**$ 26,658,950**

Retirees and Beneficiaries December 31, 2024
Health Subsidy Benefits Tabulated by Attained Ages

Attained Age	Health Subsidy	
	Number	Annual Amount
50-54	1	$ 4,862
55-59	9	42,615
60-64	58	260,099
65-69	123	430,815
70-74	147	504,585
75-79	90	300,545
80-84	28	78,395
85-89	19	51,833
90-94	7	20,172
95+	1	1,823
Totals	**483**	**$ 1,695,744**

Average Age at Retirement: 63.0 years
Average Age Now: 72.1 years

Retirees and Beneficiaries December 31, 2024
Tabulated by Year of Retirement

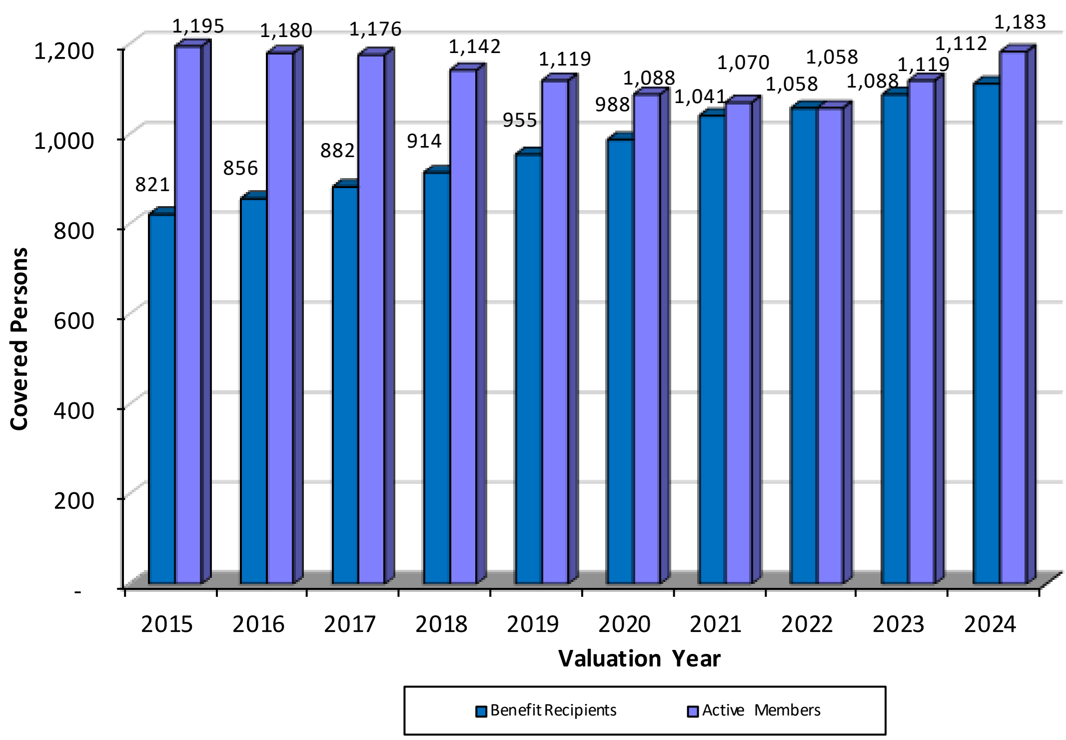
Year of Retirement	Number	Annual Pensions Totals	Annual Pensions Average
1982	1	$ 18,121	$ 18,121
1987	2	52,513	26,257
1989	1	18,934	18,934
1990	4	50,117	12,529
1991	2	6,703	3,352
1992	3	64,767	21,589
1993	4	83,203	20,801
1994	6	58,143	9,691
1995	6	100,281	16,714
1996	9	107,288	11,921
1997	6	92,304	15,384
1998	1	64,141	64,141
1999	18	410,250	22,792
2000	14	255,190	18,228
2001	6	108,648	18,108
2002	24	265,164	11,049
2003	10	149,809	14,981
2004	17	138,874	8,169
2005	25	448,727	17,949
2006	27	608,905	22,552
2007	33	898,296	27,221
2008	33	891,374	27,011
2009	28	424,333	15,155
2010	24	520,992	21,708
2011	40	782,004	19,550
2012	47	1,136,780	24,187
2013	44	1,288,822	29,291
2014	49	1,404,224	28,658
2015	80	2,717,430	33,968
2016	55	831,113	15,111
2017	48	1,091,061	22,730
2018	57	1,586,302	27,830
2019	61	1,563,926	25,638
2020	70	1,444,176	20,631
2021	77	1,952,830	25,361
2022	51	1,465,967	28,744
2023	68	1,684,169	24,767
2024	61	1,873,069	30,706
Totals	**1,112**	**$ 26,658,950**	**$ 23,974**

Average Age at Retirement: 62.2 years
Average Age Now: 73.0 years

Comparative Statement – Active Valuation Data

Valuation Date December 31	Active Members				
			Valuation Payroll		
	Number	Ratio to Retired	Total	Average	% Increase
2015	1,195	1.46	$ 52,953,903	$ 44,313	(2.0)%
2016	1,180	1.38	52,888,074	44,820	1.1 %
2017	1,176	1.33	53,364,536	45,378	1.2 %
2018	1,142	1.25	51,787,265	45,348	(0.1)%
2019	1,119	1.17	52,895,992	47,271	4.2 %
2020	1,088	1.10	54,254,463	49,866	5.5 %
2021	1,070	1.03	55,323,580	51,704	3.7 %
2022	1,058	1.00	56,969,297	53,846	4.1 %
2023	1,119	1.03	62,181,204	55,569	3.2 %
2024	1,183	1.06	67,129,760	56,745	2.1 %

Active Members and Benefit Recipients



Active Members Added and Removed – Historical

Valuation Date	Number Added During Year		Terminations During Year										Active Members End of Year
			Retirement		Disability		Died-in-Service		Withdrawals				
									Vested	Other	Totals		
	A	E	A	E	A	E	A	E	A	A	A	E	
2015	145	150	75	56.3	1	0.6	4	2.6	19	51	70	65.3	1,195
2016	109	124	44	51.4	0	0.6	1	2.3	12	67	79	75.3	1,180
2017	129	133	40	51.5	0	0.6	0	2.4	12	81	93	71.8	1,176
2018	130	164	46	53.6	3	0.6	0	1.1	22	93	115	74.2	1,142
2019	130	153	52	55.3	1	0.5	0	1.1	14	86	100	72.8	1,119
2020	113	144	59	57.5	1	0.5	1	1.0	12	71	83	70.5	1,088
2021	156	174	66	53.2	4	0.5	4	0.5	20	80	100	77.9	1,070
2022	144	156	31	46.9	0	0.5	1	0.5	23	101	124	90.2	1,058
2023	198	137	47	51.7	0	0.4	1	0.5	16	73	89	87.2	1,119
2024	235	171	43	55.1	0	0.4	0	0.5	19	109	128	103.9	1,183
5-Year Totals	846	782	246	264	5	2	7	3	90	434	524	430	
10-Year Totals	1,489	1,506	503	533	10	5	12	13	169	812	981	789	
Since Last Exp. Study (5 years)	846	782	246	264	5	2	7	3	90	434	524	430	

A = Actual
E = Expected

Active Members December 31, 2024
by Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Number	Valuation Payroll
15-19	3	0	0	0	0	0	0	3	$ 151,232
20-24	67	0	0	0	0	0	0	67	2,725,689
25-29	97	12	0	0	0	0	0	109	5,516,928
30-34	76	29	5	0	0	0	0	110	5,736,363
35-39	78	20	17	6	0	0	0	121	6,645,318
40-44	61	19	7	16	6	1	0	110	5,944,339
45-49	56	21	9	13	19	2	0	120	6,712,628
50-54	50	20	11	17	15	9	7	129	8,686,102
55-59	40	18	18	31	19	18	17	161	10,836,221
60-64	28	19	22	34	29	18	16	166	10,080,114
65-69	19	7	4	6	9	6	5	56	3,144,141
70-74	4	5	1	1	3	3	2	19	645,063
75 & over	3	4	2	0	2	1	0	12	305,622
Totals	**582**	**174**	**96**	**124**	**102**	**58**	**47**	**1,183**	**$67,129,760**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	46.4 years
Service:	9.3 years
Annual Pay:	$56,745

Deferred Vested Members December 31, 2024
Tabulated by Attained Age

Attained Age	Number	Estimated Annual Pensions
25-29	1	$ 7,356
30-34	8	52,869
35-39	13	104,983
40-44	23	226,687
45-49	20	235,053
50-54	29	298,153
55-59	37	340,266
60+	3	21,939
Totals	**134**	**$ 1,287,306**

Average Age at Termination: 42.9 years
Average Age Now: 48.9 years

SECTION C

VALUATION METHODS AND ASSUMPTIONS

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using the *individual entry-age actuarial cost method* having the following characteristics:

- The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and

- Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

MECRS currently has a tiered benefit structure with the ultimate tier being more costly than the initial tier. The normal cost is computed based on this tiered structure. As a result, the normal cost rate is expected to increase as the members affected by the initial tier are replaced by new members, or when members upgrade their prior service.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded Actuarial Accrued Liabilities were amortized by level (principal and interest combined) percent-of-payroll contributions assuming 2.50% wage inflation over 15 future years for pension benefits, and over 15 future years for health subsidy benefits. The amortization period is closed for both pension benefits and health subsidy benefits.

Asset Valuation Method. Last year's valuation assets are increased by contributions and reduced by refunds, benefit payments and expenses. An amount equal to the assumed investment return for the year is then added. Differences between actual return on a market value basis and an assumed return are phased in over a five-year period.

Actuarial Assumptions Used for the Valuation

The contribution requirements and benefit values of the System are calculated by applying actuarial assumptions to the benefit provisions and member information furnished, using the actuarial cost method described on the previous page.

The principal areas of financial risk which require assumptions about future experience are:

- Long-term rates of investment return to be generated by the assets of the System;
- Patterns of pay increases to members;
- Rates of mortality among members, retirees and beneficiaries;
- Rates of withdrawal of active members;
- Rates of disability among members; and
- The age patterns of actual retirement.

In a valuation, the monetary effect of each assumption is calculated for as long as a present covered person survives – a period of time which can be as long as a century.

Actual experience of the System will not coincide exactly with assumed experience, regardless of the accuracy of the assumptions, or the skill of the actuary and the precision of the many calculations made. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time it becomes appropriate to modify one or more of the assumptions, to reflect experience trends (but not random year-to-year fluctuations). The Board has established a policy of performing an Experience Study every 3-5 years to evaluate/modify valuation assumptions. Assumptions used in this report are based on the January 1, 2017 – December 31, 2019 experience study of the MECRS and were adopted by the Board. These assumptions were first used in the December 31, 2020 actuarial valuation. We believe the assumptions are reasonable individually and in the aggregate.

Valuation Assumptions

The rate of investment return was 6.75% per year, compounded annually (net of investment expenses). This assumption is used to make money payable at one point in time equal in value to a different amount of money payable at another point in time. The assumed real rate of return (the net return in excess of the wage inflation rate) is 4.25%. Experience over the last five years has been as follows:

	Year Ended December 31					5-Year
	2024	2023	2022	2021	2020	Average
1) Nominal rate of return#	6.40 %	7.00 %	4.00 %	9.70 %	8.60 %	7.12 %
2) Increase in CPI	2.89 %	3.35 %	6.45 %	7.04 %	1.36 %	4.20 %
3) Average Salary Increase (ASI)	2.12 %	3.20 %	4.14 %	3.69 %	5.49 %	3.72 %
4) Real Return						
- Total: CPI (1) - (2)						2.93 %
- Total: ASI (1) - (3)						3.40 %
- Assumption	4.25 %	4.25 %	4.25 %	4.25 %	4.25 %	4.25 %

 # The nominal rate of return was computed using the approximate formula: i = I divided by ½(A+B-I), where I is realized investment income net of expenses, A is the beginning of year asset funding value and B is the end of year funding asset value.

The rate of assumed price inflation was 2.00% per year. This results in a real rate of return over price inflation of 4.75%.

These economic assumptions were updated for the December 31, 2020 valuation.

Valuation Assumptions (Continued)

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

	Salary Increase Assumptions for an Individual Member		
Years of Service	Merit & Seniority	Base (Economic)	Increase Next Year
1	3.46%	2.50%	5.96%
2	4.43%	2.50%	6.93%
3	4.22%	2.50%	6.72%
4	3.70%	2.50%	6.20%
5	3.38%	2.50%	5.88%
6	2.93%	2.50%	5.43%
7	2.55%	2.50%	5.05%
8	2.26%	2.50%	4.76%
9	2.06%	2.50%	4.56%
10	1.85%	2.50%	4.35%
15	1.08%	2.50%	3.58%
20	0.77%	2.50%	3.27%
25	0.75%	2.50%	3.25%
30	0.75%	2.50%	3.25%
35	0.75%	2.50%	3.25%
40	0.75%	2.50%	3.25%

If the number of active members remains constant, then the total active member payroll will increase 2.50% annually, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities.

Rates of salary increase were updated for the December 31, 2020 valuation.

Valuation Assumptions (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year were updated for the December 31, 2020 valuation and are as follows:

Active Members Retiring Next Year Under Normal Retirement			Active Members Retiring Next Year Under Early Retirement			
	% Retiring			% Retiring		
				Age and Service		
Ages	Male	Female	Ages	Male	Female	Rule of 80
60	12%	8%	50			10%
61	11%	15%	51			4%
62	22%	19%	52			7%
63	18%	10%	53			5%
64	18%	10%	54			5%
65	24%	19%	55	5%	10%	5%
66	38%	27%	56	5%	15%	4%
67	15%	19%	57	5%	8%	8%
68	39%	15%	58	5%	7%	8%
69	15%	22%	59	5%	7%	10%
70	27%	25%				
71	50%	19%				
72	42%	19%				
73	50%	19%				
74	50%	19%				
75	100%	19%				
76	100%	19%				
77	100%	19%				
78	100%	19%				
79	100%	19%				
80	100%	100%				

A member was assumed to be eligible for normal retirement after attaining age 60 regardless of service. A member was assumed to be eligible for early retirement after attaining age 55 with at least 20 years of service or if the sum of age and service is at least 80.

Valuation Assumptions (Continued)

The post-retirement healthy mortality table was the Pub-2010 General Healthy Retiree Tables projected to 2039 using projection scale MP-2019.

Sample Attained Ages	Single Life Retirement Values					
	Present Value of $1 Monthly for Life		Percent Dying Next Year		Future Life Expectancy (Years)	
	Male	Female	Male	Female	Male	Female
50	$158.10	$162.48	0.2552%	0.1899%	34.83	37.64
55	150.84	156.27	0.3655%	0.2572%	30.30	33.01
60	141.83	148.25	0.5441%	0.3494%	25.91	28.46
65	130.71	137.94	0.7880%	0.5138%	21.66	23.99
70	117.05	125.04	1.2298%	0.8314%	17.58	19.67
75	101.05	109.55	2.0765%	1.4535%	13.77	15.59
80	83.40	91.89	3.6906%	2.6437%	10.36	11.86

This assumption is used to measure the probabilities of members dying after retirement. The projection to 2039 is the margin for mortality improvement.

Post-retirement disabled mortality table is the Pub-2010 General Disabled Retiree Tables projected to 2039 using projection scale MP-2019.

Pre-retirement mortality is modeled using the Pub-2010 General Employee Tables projected to 2039 using projection scale MP-2019.

These tables were updated for the December 31, 2020 valuation in accordance with an experience study for the System of the three-year period ended December 31, 2019.

Valuation Assumptions (Concluded)

Rates of separation from active membership are shown below (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment. These rates were updated for the December 31, 2020 valuation.

Sample Ages	Years of Service	% of Active Members Separating within Next Year	
		Male	Female
	0-1	24.00%	36.00%
	1-2	18.00%	26.00%
	2-3	13.00%	22.00%
	3-4	7.00%	14.00%
	4-5	7.00%	14.00%
	5-6	n/a	11.00%
30	5 & Up (Men) 6 & Up (Women)	4.00%	6.89%
35		2.96%	5.79%
40		2.33%	5.01%
45		2.00%	4.42%
50		1.87%	3.84%

Rates of disability are divided two-thirds toward duty and one-third toward non-duty disability and are as follows:

Sample Ages	% of Active Members Becoming Disabled within Next Year	
	Male	Female
20	0.003%	0.003%
25	0.003%	0.003%
30	0.003%	0.003%
35	0.013%	0.013%
40	0.051%	0.051%
45	0.105%	0.105%
50	0.173%	0.173%
55	0.256%	0.256%
60	0.382%	0.382%

Miscellaneous and Technical Assumptions
December 31, 2024

Marriage Assumption:	50% of males and 50% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Beginning of the year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and exact fractional service on the date the decrement is assumed to occur.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability and withdrawal decrements do not operate after member reaches retirement eligibility.
Administrative Expense Load:	1.25% of payroll.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form.
Benefit Service:	Exact fractional service as of the valuation date is used to determine the amount of benefit payable.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the actual payroll payable at the time contributions are made.
COLA Assumption:	1.00% compounded annually.
Adjustments:	Normal and Early retirement costs were increased by 13% to reflect lump sums that are payable at retirement but not available in the active data. Retiree liabilities were increased 1% to account for pop-up retiree benefits.
Post-Retirement Subsidy:	55% of current actives and 25% of current terminated vested members were assumed to elect to receive the post-retirement health subsidy upon retirement. Current retirees were assumed not to alter their initial election after retirement.
Data Processing:	The Retirement System provides data in excel format. GRS reviews the data for reasonableness and completeness. Questions are sent to the System. Data is then modified based on the answers provided. For new members with less than one year of earnings, reported pay is annualized based on reported service.
Data Adjustments:	For members who have no salary provided, their prior year's salary was used.

SECTION D

OPERATION OF THE RETIREMENT SYSTEM

Basic Financial Objective and Operation of the Retirement System

Benefit Promises Made Which Must Be Paid For. A retirement system is an orderly means of handing out, keeping track of, and financing contingent pension promises to a group of employees. As each member of the retirement system acquires a unit of service credit they are, in effect, handed an "IOU" which reads: "The Employees Retirement System promises to pay you one unit of retirement benefits, payments in cash commencing when you retire."

The principal related financial question is: ***When shall the money required to cover the "IOU" be contributed?*** This year, when the benefit of the member's service is received? Or, some future year when the "IOU" becomes a cash demand?

This Retirement System meets the requirement of funding future benefits during the year by having the following ***Financial Objective: To establish and receive contributions, expressed as percents of active member payroll, which will remain approximately level from year to year*** and will not have to be increased for future generations of taxpayers.

Translated into actuarial terminology, a level percent-of-payroll contribution objective means that the contribution rate must be at least:

> ***Normal Cost*** (the current value of benefits likely to be paid on account of members' service being rendered in the current year)
>
> ... plus ...
>
> ***Interest on the Unfunded Actuarial Accrued Liability*** (the difference between the actuarial accrued liability and current system assets).

Basic Financial Objective and Operation of the Retirement System

If contributions to the Retirement System are less than the preceding amount, the difference, plus investment earnings not realized thereon, will have to be contributed at some later time, or, benefits will have to be reduced, to satisfy the fundamental fiscal equation under which all retirement systems must operate; that is:

B = C + I - E

Benefit payments to any group of members and their beneficiaries cannot exceed the sum of:

Contributions received on behalf of the group

... plus ...

Investment earnings on contributions received

... minus ...

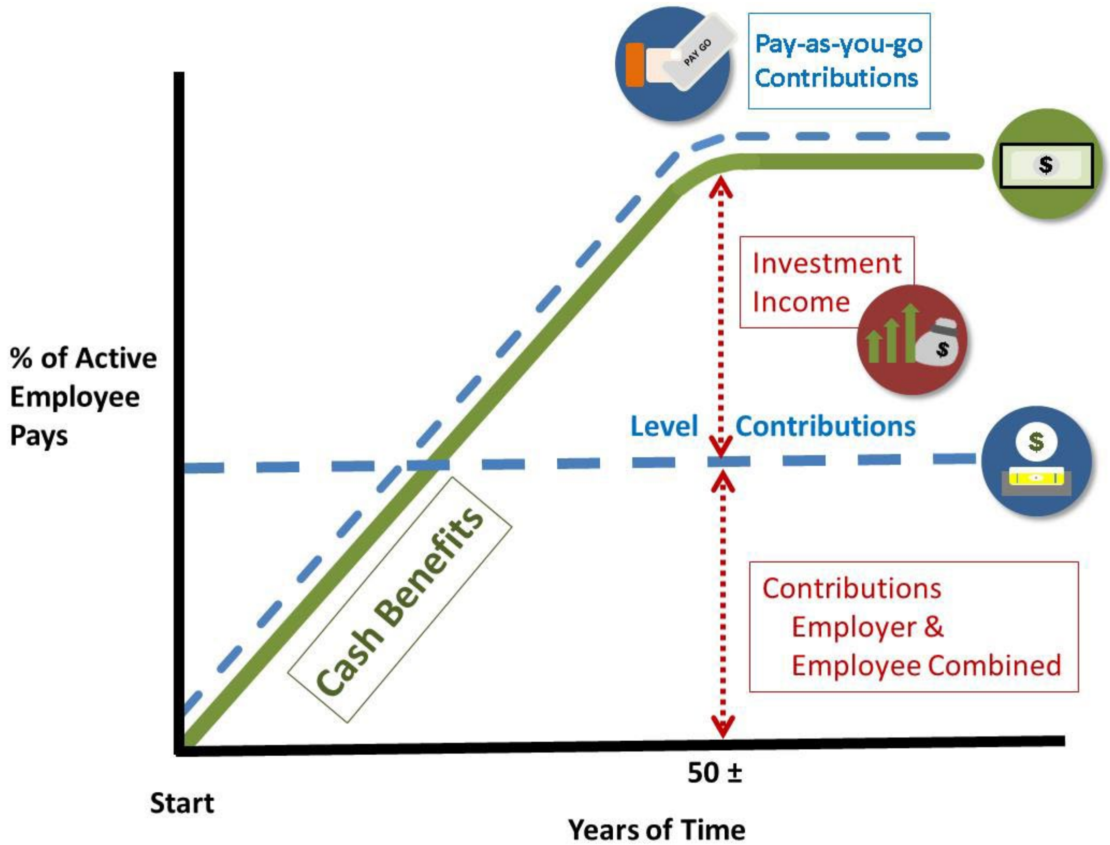
Expenses incurred in the operation of the system.

There are retirement systems designed to defer the bulk of contributions far into the future. They are lured by artificially low present contributions, but the inevitable consequence is a relentlessly increasing contribution rate to a level greatly in excess of the level percent-of-payroll rate.

A by-product of the level percent-of-payroll contribution objective is the accumulation of invested assets for varying periods of time. Investment income becomes a major contributor to the Retirement System and the amount is directly related to the amount of contributions and investment performance.

Computed Contribution Rate Needed to Finance Benefits. From a given schedule of benefits and from the data furnished, the contribution rate is calculated ***by means of an actuarial valuation*** - the technique of assigning monetary values to the risks assumed in operating a retirement system.

Financing Diagram

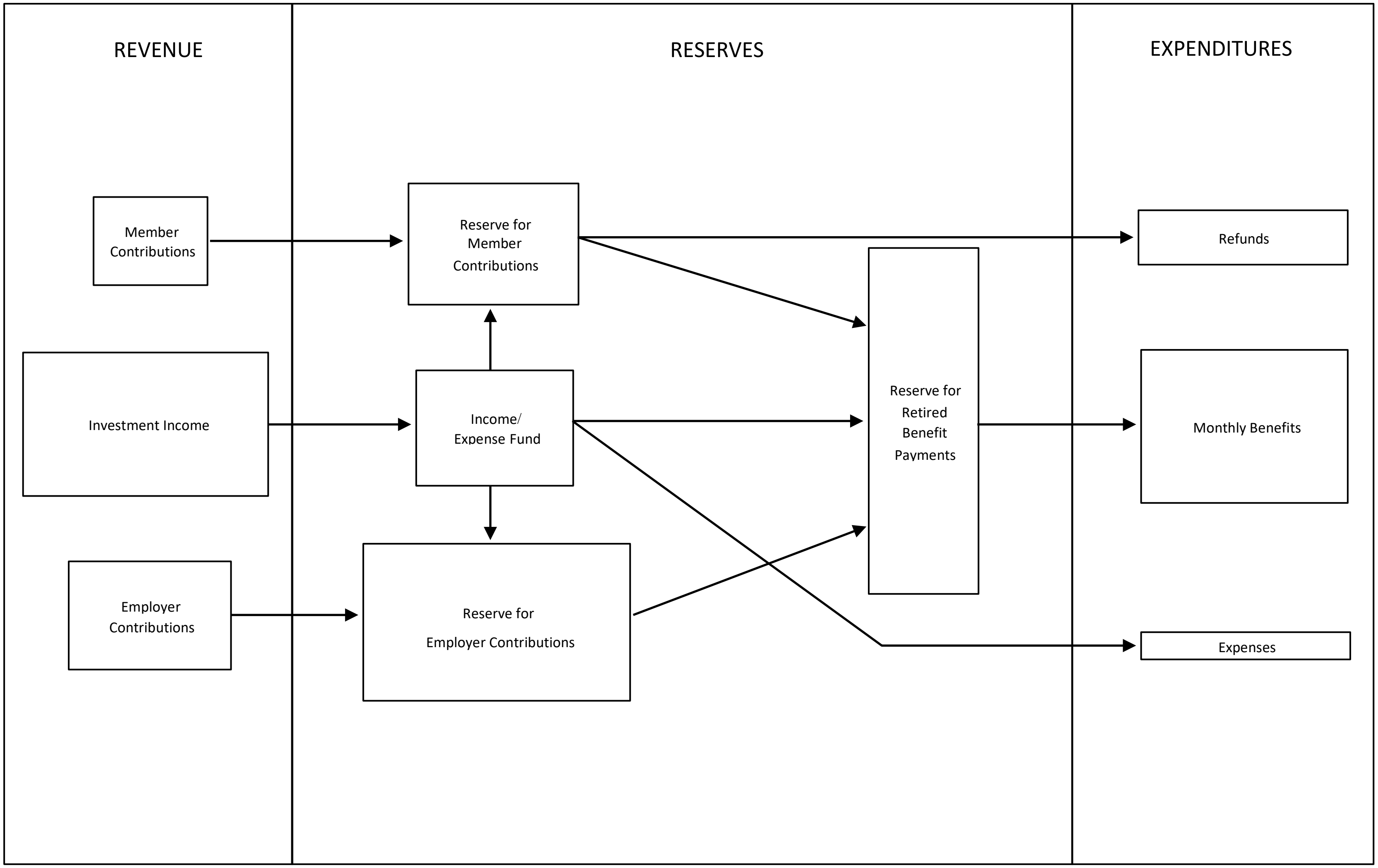


CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

- **Economic Risk Areas**
  - Rates of investment return
  - Rates of pay increase
  - Changes in active member group size
- **Non-Economic Risk Areas**
  - Ages at actual retirement
  - Rates of mortality
  - Rates of withdrawal of active members (turnover)
  - Rates of disability

Flow of Money through the Retirement System



Glossary

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

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

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience 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, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liabilities. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes.