

City of Warwick, Rhode Island Municipal Employees' Retirement Plan

Actuarial Valuation Report
as of July 1, 2023



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DISCUSSION

Discussion

I. Purpose and Summary

This report presents the results of our July 1, 2023 actuarial valuation of the City of Warwick, Rhode Island Municipal Employees' Retirement Plan. The valuation, which was performed at the request of the City of Warwick, determines the City's contribution level for the plan year beginning July 1, 2024.

In accordance with Section 60-442 of the City's Ordinance governing the plan, the results in this valuation are used to determine the contribution requirement for the 2024-2025 year as follows:

Plan Year	Projected City Contribution
2024-2025	\$ 8,792,265

The development of the valuation results is shown in Tables 1 through 6 and is described in more detail on the following pages.

II. Membership Data

The City furnished data for active, terminated, and retired members as of July 1, 2023. Although we did not audit this data, we did review it for reasonableness and consistency with the data collected in the previous valuation (prepared as of July 1, 2022). Table 4 provides a distribution by age and service for active members.

III. Plan Provisions

A summary of the principal plan provisions recognized for purposes of the valuation is provided in Table 8. There was no cost-of-living increase as of July 1, 2023. In addition, based on the results of this valuation it has been determined that the cost-of-living increase as of July 1, 2024 will be 0.00%.

IV. Assets

All information about the assets held by the trust fund, including the market value, the amount of the City's and members' contributions, benefit payments and the fund's earnings, was obtained from the City for the fiscal year ending June 30, 2023. Table 3 provides information about investment return and a reconciliation of assets at market value.

As shown in Table 3B, the market value of the assets in the trust was \$158,837,575 as of June 30, 2023. The dollar-weighted rate of return on the market value of assets was 11.36% for the 2022-2023 plan year.

The plan uses a 5-year smoothed asset value rather than the market value of assets in determining contribution requirements. This smoothed value of assets is defined as the actuarial value of assets (AVA). This smoothed method used to compute the AVA takes the difference between actual earnings and expected earnings (based on the assumed investment return rate) each year, and recognizes the difference over five years, at 20% per year.



V. Actuarial Methods and Assumptions

The results of the actuarial valuation, including the calculation of the liabilities and contributions, are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. We have updated the mortality projection scales to the ultimate rates of the most recently published ones since the prior valuation. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

The actuarial methods and assumptions employed in this valuation are described in detail in Table 7 of this report. Primary economic assumptions include a 6.90% investment return and a service related compensation increase assumption. The Entry Age Normal actuarial cost method continues to be used to determine liabilities for funding purposes.

The Plan provides cost-of-living increases contingent on the adequacy of a “bank” determined by fund performance. As the funded status improves, this bank will begin to provide increases. Based on the current formula, it is assumed that the cost-of-living increases formula will produce a 0.75% annual cost-of-living increase over time.

VI. Funding Policy

The City's annual contribution to the plan is actuarially determined and is based upon a funding policy which provides for the payment of the normal cost with interest plus an amount which will amortize the unfunded actuarial accrued liability. Increases or decreases in the actuarial accrued liability attributable to plan changes, changes in assumptions or methods, or experience gains or losses are amortized as a level percentage of pay over a period not to exceed 20 years from the date they are determined. A projection of the employer contribution amounts is provided in Table 6.

Effective with the City's restated Ordinance adopted during 1993, the results of each actuarial valuation are used to project the City's contribution requirement for the following plan year. Accordingly, the 2024-2025 contribution requirement is equal to the 2023 valuation result, projected with 2.75% growth, our assumed payroll growth assumption.

The Actuarial Standards of Practice require the actuary to calculate and disclose a Reasonable Actuarially Determined Contribution. The contribution requirements determined in this valuation meet all of the requirements in the ASOP and thus the employer contribution for FY2024-2025 in this valuation is the Reasonable Actuarially Determined Contribution under ASOP No. 4.

VII. Analysis of Valuation Results

Table 1 provides a comparison of the results from the July 1, 2022 and the July 1, 2023 actuarial valuations.



The funded ratio increased from 78.0% to 79.4%. The funded status measure alone is not appropriate for assessing the need for future contributions. Also, the funded status is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. While the investment return for the year was less than assumed, the funded ratio did increase based on a combination of the funding policy and liability experience. The actual contribution dollar amount grew more than the expected 2.75% because the active headcount increased by 10%.

The amortization bases established to amortize the unfunded actuarial accrued liability arising from these sources, along with bases established in prior valuations, are presented in Table 2B.

The following exhibit provides the detail by source from the contribution requirement from last year's report to this year's.

	<u>Impact</u>	<u>Value</u>
FY2024 Contribution Requirement		\$8,525,753
Expected Growth at 2.75%	\$234,458	
Recognized Investment Experience	188,519	
Other Liability Experience	(156,465)	
Assumption Changes	<u>-</u>	
Total Change		<u>266,512</u>
FY2025 Contribution Requirement		<u><u>\$8,792,265</u></u>

X. Certification

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 certify that the information included herein and contained in this Actuarial Valuation Report is accurate and fairly presents the actuarial position of the City of Warwick, Rhode Island Municipal Employees' Retirement Plan as of the valuation date.

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.



The undersigned are independent actuaries and consultants. Joseph P. Newton and Paul T. Wood are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Finally, both of the undersigned are experienced in performing valuations for large public retirement systems.

We are available to answer any questions in connection with this valuation of the plan or the information presented in this report.



Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader



Paul T. Wood, ASA, FCA, MAAA
Senior Consultant

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TABLES

TABLE 1

Development of Contribution

A. Membership Data	<i>July 1, 2023</i>	<i>July 1, 2022</i>
1. Active members		
a. Number	362	349
b. Covered payroll	\$ 21,459,881	\$ 20,383,145
c. Average pay	\$ 59,281	\$ 58,404
d. Average attained age	48.3	48.2
e. Average past service	11.0	10.8
2. Retired members and beneficiaries		
a. Number	462	452
b. Average benefit being paid	\$ 36,422	\$ 36,511
3. Terminated members with vested benefits		
a. Number	20	24
b. Average deferred benefit payable at 65*	\$ 22,448	\$ 22,314
4. Number of non vested terminated members with contributions not yet refunded	20	29
B. Liabilities		
1. Actuarial accrued liability		
a. Active members	\$ 60,816,201	\$ 57,942,458
b. Retired members	141,342,806	141,177,076
c. Terminated members	3,807,327	4,393,054
d. Total	\$ 205,966,334	\$ 203,512,588
2. Valuation assets	\$ 163,444,512	\$ 158,657,828
3. Unfunded actuarial accrued liability [1(d) - 2]	\$ 42,521,822	\$ 44,854,760
4. Funded ratio [2 / 1(d)]	79.4%	78.0%
C. Determination of City Contribution for FY+1		
1. Net normal cost		
a. Gross normal cost, with interest	\$ 3,457,119	\$ 3,238,992
b. Expected employee contributions	2,211,274	1,922,894
c. Net normal cost [(a) - (b)]	\$ 1,245,845	\$ 1,316,098
2. Amortization charges	7,546,420	7,209,655
3. City contribution [1(c) + 2]	\$ 8,792,265	\$ 8,525,753

* Does not include 3% pre-retirement cost-of-living increases subsequent to valuation date.



TABLE 2A

Determination of Changes in Unfunded Actuarial Accrued Liability

A. Reconciliation of Unfunded Actuarial Accrued Liability

1. Expected unfunded actuarial accrued liability as of July 1, 2023	\$ 40,756,145
2. Increase (decrease) in unfunded actuarial accrued liability due to actuarial experience	\$ (459,414)
3. Increase (decrease) in unfunded actuarial accrued liability due to investment performance	\$ 2,403,357
4. Increase (decrease) in unfunded actuarial accrued liability due to assumption changes	\$ (178,266)
5. Unfunded actuarial accrued liability as of July 1, 2023 [(1) + (2) + (3) + (4)]	\$ 42,521,822

TABLE 2B

Summary of Amortization Bases

B. Summary of Amortization Bases

<i>Date Established</i>	<i>Purpose</i>	<i>Initial Amount</i>	<i>Remaining Balance as of July 1, 2023</i>	<i>2024-2025 Amortization Payment *</i>	<i>Years Remaining as of July 1, 2024</i>
7/14	2014 Fresh Start, Offsetting of Prior Bases	36,573,612	15,148,496	5,578,121	2
7/15	Experience (Gain)/Loss	(326,033)	(135,040)	(49,726)	2
7/16	Experience (Gain)/Loss	744,744	662,329	67,892	12
** 7/16	2016 Assumption Change - FY19 Stagger	1,782,579	1,910,028	175,896	14
** 7/16	2016 Assumption Change - FY20 Stagger	1,782,579	2,082,286	183,000	15
** 7/16	2016 Assumption Change - FY21 Stagger	1,782,579	2,261,501	190,391	16
** 7/16	2016 Assumption Change - FY22 Stagger	1,782,579	2,447,955	198,080	17
** 7/16	2016 Assumption Change - FY23 Stagger	1,782,579	2,641,939	206,081	18
7/17	2017 Experience (Gain)/Loss	2,587,236	2,593,279	238,816	14
7/18	2018 Experience (Gain)/Loss	4,330,455	4,426,593	389,027	15
7/19	2019 Experience (Gain)/Loss	1,127,837	1,171,282	98,607	16
7/20	2020 Experience (Gain)/Loss	765,796	805,299	65,162	17
** 7/20	2020 Assumption Change - FY27 Stagger	3,158,984	3,859,051	-	22
7/21	2021 Experience (Gain)/Loss	50,024	53,108	4,143	18
7/22	2022 Experience (Gain)/Loss	774,592	828,039	62,430	19
7/23	2023 Assumption Change	(178,266)	(178,266)	(13,983)	20
7/23	2023 Experience (Gain)/Loss	1,943,943	<u>1,943,943</u>	<u>152,483</u>	20
Total			\$ 42,521,822	\$ 7,546,420	

* Assuming payment made throughout of the year.

** Assumption change staggers will begin in the fiscal year indicated and be 20 scheduled payments



TABLE 3A

Asset Information

	Market Value	Percentage of Total
1. Cash and equivalents	\$ -	0.0%
2. Equities, including index funds	111,345,140	70.1%
3. Fixed income investments	47,492,435	29.9%
4. Receivables less payables	<u>-</u>	<u>0.0%</u>
5. Total	\$158,837,575	100.0%

TABLE 3B

Asset Information Asset Reconciliation and Expected Returns

	FY 2020	FY 2021	FY 2022	FY 2023
1. Beginning of year market value	136,686,145	135,668,767	175,551,356	146,082,306
2. Contributions				
a. City	7,458,317	7,390,058	7,814,937	8,075,809
b. Member	1,888,893	1,714,213	1,821,343	2,094,493
c. Other	-	-	-	996
d. Total	9,347,210	9,104,271	9,636,280	10,171,298
3. Benefits and admin expenses paid	(12,011,581)	(12,883,964)	(13,547,378)	(13,805,363)
4. Net return	1,646,993	43,662,282	(25,557,952)	16,389,334
5. End of year market value	135,668,767	175,551,356	146,082,306	158,837,575
6. Net market return	1.22%	32.64%	-14.72%	11.36%
7. Expected market value				
a. Beginning of year	136,686,145	135,668,767	175,551,356	146,082,306
b. Net cash flow	(2,664,371)	(3,779,693)	(3,911,098)	(3,634,065)
c. Earnings assumption	6.90%	6.90%	6.90%	6.90%
d. Expected earnings	9,340,956	9,232,920	11,980,361	9,956,395
e. Excess/(shortfall)	(7,693,963)	34,429,362	(37,538,313)	6,432,939



TABLE 3C

Asset Information Development of Actuarial Value of Assets

	Year Ending June 30, 2023																																																	
1. Market value of assets at beginning of year*	\$ 146,082,306																																																	
2. Net new investments																																																		
a. Contributions	\$ 10,171,298																																																	
b. Benefits and admin expenses paid	(13,805,363)																																																	
c. Subtotal	(3,634,065)																																																	
3. Market value of assets at end of year	\$ 158,837,575																																																	
4. Net earnings (3-1-2)	\$ 16,389,334																																																	
5. Assumed investment return rate	6.90%																																																	
6. Expected return	\$ 9,956,395																																																	
7. Excess return (4-6)	\$ 6,432,939																																																	
8. Development of amounts to be recognized as of June 30, 2023:																																																		
<table style="width: 100%; border-collapse: collapse; margin-left: 20px;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Fiscal Year End</th> <th style="text-align: center; border-bottom: 1px solid black;">Remaining Deferrals of Excess (Shortfall) of Investment Income* (1)</th> <th style="text-align: center; border-bottom: 1px solid black;">Offsetting of Gains/(Losses) (2)</th> <th style="text-align: center; border-bottom: 1px solid black;">Net Deferrals Remaining (3) = (1) + (2)</th> <th style="text-align: center; border-bottom: 1px solid black;">Years Remaining (4)</th> <th style="text-align: center; border-bottom: 1px solid black;">Recognized for this valuation (5) = (3) / (4)</th> <th style="text-align: center; border-bottom: 1px solid black;">Remaining after this valuation (6) = (3) - (5)</th> </tr> </thead> <tbody> <tr> <td>2019</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: center;">1</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ 0</td> </tr> <tr> <td>2020</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: center;">2</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> <tr> <td>2021</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: center;">3</td> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> </tr> <tr> <td>2022</td> <td style="text-align: right;">(12,575,522)</td> <td style="text-align: right;">6,432,939</td> <td style="text-align: right;">(6,142,583)</td> <td style="text-align: center;">4</td> <td style="text-align: right;">(1,535,646)</td> <td style="text-align: right;">(4,606,937)</td> </tr> <tr> <td>2023</td> <td style="text-align: right; border-bottom: 1px solid black;">6,432,939</td> <td style="text-align: right; border-bottom: 1px solid black;">(6,432,939)</td> <td style="text-align: right; border-bottom: 1px solid black;">0</td> <td style="text-align: center;">5</td> <td style="text-align: right; border-bottom: 1px solid black;">0</td> <td style="text-align: right; border-bottom: 1px solid black;">0</td> </tr> <tr> <td></td> <td style="text-align: right;">\$ (6,142,583)</td> <td style="text-align: right;">\$ 0</td> <td style="text-align: right;">\$ (6,142,583)</td> <td></td> <td style="text-align: right;">\$ (1,535,646)</td> <td style="text-align: right;">\$ (4,606,937)</td> </tr> </tbody> </table>	Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income* (1)	Offsetting of Gains/(Losses) (2)	Net Deferrals Remaining (3) = (1) + (2)	Years Remaining (4)	Recognized for this valuation (5) = (3) / (4)	Remaining after this valuation (6) = (3) - (5)	2019	\$ 0	\$ 0	\$ 0	1	\$ 0	\$ 0	2020	0	0	0	2	0	0	2021	0	0	0	3	0	0	2022	(12,575,522)	6,432,939	(6,142,583)	4	(1,535,646)	(4,606,937)	2023	6,432,939	(6,432,939)	0	5	0	0		\$ (6,142,583)	\$ 0	\$ (6,142,583)		\$ (1,535,646)	\$ (4,606,937)	
Fiscal Year End	Remaining Deferrals of Excess (Shortfall) of Investment Income* (1)	Offsetting of Gains/(Losses) (2)	Net Deferrals Remaining (3) = (1) + (2)	Years Remaining (4)	Recognized for this valuation (5) = (3) / (4)	Remaining after this valuation (6) = (3) - (5)																																												
2019	\$ 0	\$ 0	\$ 0	1	\$ 0	\$ 0																																												
2020	0	0	0	2	0	0																																												
2021	0	0	0	3	0	0																																												
2022	(12,575,522)	6,432,939	(6,142,583)	4	(1,535,646)	(4,606,937)																																												
2023	6,432,939	(6,432,939)	0	5	0	0																																												
	\$ (6,142,583)	\$ 0	\$ (6,142,583)		\$ (1,535,646)	\$ (4,606,937)																																												
9. Actuarial value of assets as of June 30, 2023 (Item 3 - Item 8)	\$ 163,444,512																																																	
10. Ratio of actuarial value to market value	102.9%																																																	

* Market value of assets and the remaining deferrals of shortfall of investment income FY 2019 have been revised based on the restated information.



TABLE 4

Distribution of Active Members and Average Salary by Age and by Years of Service

Years of Credited Service													Total
0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total	
Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
	4			1								5	
	\$ 40,867			\$ 53,290								\$ 43,351	
	4	4	2	2	8	1						21	
	\$ 41,409	\$ 51,462	\$ 43,482	\$ 51,090	\$ 56,432	\$ 62,165						\$ 51,155	
	5	2		1	10	3						21	
	\$ 45,304	\$ 56,284		\$ 10,000	\$ 55,287	\$ 58,174						\$ 51,261	
	12	3	3	3	5	6	6					38	
	\$ 44,594	\$ 48,438	\$ 60,315	\$ 58,372	\$ 47,205	\$ 60,548	\$ 67,797					\$ 53,753	
	12	1	2	3	17	4	6	4				49	
	\$ 49,596	\$ 10,000	\$ 61,500	\$ 51,903	\$ 56,232	\$ 66,550	\$ 65,032	\$ 72,906				\$ 56,894	
	7	2	2	1	9	4	13	9				47	
	\$ 56,150	\$ 71,080	\$ 66,970	\$ 47,756	\$ 66,675	\$ 66,367	\$ 64,782	\$ 65,104				\$ 64,054	
	7	3	2	1	14	4	6	16	8	2	1	64	
	\$ 44,610	\$ 60,052	\$ 58,866	\$ 44,920	\$ 60,202	\$ 62,303	\$ 63,150	\$ 69,780	\$ 77,997	\$ 72,081	\$ 50,418	\$ 63,454	
	4	3	3	2	8	7	12	7	6	1		53	
	\$ 41,080	\$ 47,598	\$ 73,093	\$ 63,942	\$ 57,124	\$ 58,170	\$ 71,739	\$ 63,104	\$ 76,432	\$ 61,621		\$ 63,043	
	4	2		1	11	5	8	4	3		1	39	
	\$ 43,372	\$ 106,073		\$ 51,319	\$ 57,997	\$ 66,418	\$ 63,235	\$ 59,739	\$ 61,449		\$ 80,929	\$ 61,977	
		3	1	2	4	3	4	2	4	1	1	25	
		\$ 63,101	\$ 67,294	\$ 58,196	\$ 52,030	\$ 50,852	\$ 53,465	\$ 83,319	\$ 52,030	\$ 24,796	\$ 84,897	\$ 57,279	
	59	23	15	17	86	37	55	42	21	4	3	362	
	\$ 46,255	\$ 58,273	\$ 61,944	\$ 52,033	\$ 57,468	\$ 61,424	\$ 65,430	\$ 67,652	\$ 70,240	\$ 57,645	\$ 72,081	\$ 59,281	



TABLE 5

History of Investment Return Rates

Year Ending June 30 of <u>(1)</u>	<u>Market</u> <u>(2)</u>	<u>Actuarial</u> <u>(3)</u>
2007	15.08%	
2008	-4.68%	
2009	-16.43%	
2010	13.61%	
2011	21.71%	
2012	0.46%	
2013	12.07%	
2014	15.71%	9.23%
2015	2.34%	9.23%
2016	-1.40%	6.18%
2017	12.78%	6.51%
2018	9.08%	7.33%
2019*	4.02%	4.65%
2020	1.22%	5.85%
2021	32.64%	10.42%
2022	-14.72%	5.82%
2023	11.36%	5.37%
Average Returns:		
Last 5 Years	5.81%	6.40%
Last 10 Years	6.66%	

* The rate of return on the market value of assets FY2019 has been revised based on the restated information.

TABLE 6

Near Term Outlook

Valuation as of July 1,	Unfunded Actuarial Accrued Liability (UAAL)	AVA Funded Ratio	Actuarial Value of Fund Assets (AVA)	For Fiscal Year Ending June 30,	Employer Contribution Rate	Covered Compensation	Employer Contributions	Employee Contributions	Benefit Payments and Refunds	Net External Cash Flow
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2023	\$ 42,522	79.4%	\$ 163,445	2024	37.6%	\$ 22,654	\$ 8,526	\$ 2,152	\$ 14,232	\$ (3,555)
2024	37,894	81.9%	170,987	2025	37.8%	23,277	8,792	2,211	14,523	(3,520)
2025	32,654	84.6%	179,084	2026	37.5%	23,917	8,978	2,272	15,019	(3,769)
2026	26,841	87.5%	187,481	2027	14.9%	24,574	3,664	2,335	15,411	(9,412)
2027	26,103	88.0%	190,621	2028	14.7%	25,250	3,709	2,399	15,809	(9,701)
2028	25,253	88.5%	193,677	2029	14.4%	25,945	3,733	2,465	16,120	(9,922)
2029	24,309	89.0%	196,714	2030	14.2%	26,658	3,791	2,533	16,471	(10,148)

These projections are based on the current funding policy and assumes that all current assumptions are met each year in the future, including a 6.9% annual return on smoothed Amount is shown in thousands.



TABLE 7

Actuarial Methods and Assumptions

Actuarial Valuations:	Actuarial valuations are prepared July 1 of each year.
Actuarial Cost Method:	<i>Entry Age Normal Actuarial Cost Method:</i> Under this method, the normal cost is the amount calculated as the level percentage of pay necessary to fully fund each active member's prospective benefit from entry age to retirement age. The total actuarial accrued liability, which is redetermined for each individual member as of each valuation date, represents the theoretical accumulation of all prior years' normal costs for the members as if the present plan had always been in effect. The unfunded actuarial accrued liability represents the excess of the total actuarial accrued liability over the valuation assets.
Amortization Policy:	The amortization of the UAAL is determined as a level percentage of payroll over a closed period using the process of "laddering". Bases that existed prior to this valuation continue to be amortized on their original schedule. New experience losses are amortized over individual periods not to exceed 20 years. New gains are offset against and amortized over the same period as the current largest outstanding loss which in turn decreases contribution rate volatility.
Asset Valuation Method:	The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Offsetting unrecognized gains and losses are immediately recognized, with the shortest remaining bases recognized first and the net remaining bases continue to be recognized on their original timeframe. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

Actuarial Methods and Assumptions (Continued)

1. *Mortality*

a. Post-retirement mortality rates:

- i. Male employees - PUB(10) Median Table for Healthy General Employee Males, loaded by 115%, projected with Scale MP2021 with immediate convergence.
- ii. Female employees - PUB(10) Median Table for Healthy General Employee Females, loaded by 111%, projected with Scale MP2021 with immediate convergence.
- iii. Disabled males – PUB(10) Tables for Disabled Retirees for General male employees, loaded by 115%, projected with Scale MP2021 with immediate convergence.
- iv. Disabled females – PUB(10) Tables for Disabled Retirees for General females employees, loaded by 111%, projected with Scale MP2021 with immediate convergence.

b. Active Mortality

- i. Male employees: PUB(10) Tables for Employees by Occupation for males, projected with Scale MP2021 with immediate convergence.
- ii. Female employees: PUB(10) Tables for Employees by Occupation for females, projected with Scale MP2021 with immediate convergence.

2. *Investment return rate* 6.90% per year, compounded annually, net of investment expenses.

3. *Payroll growth rate* Overall payroll is assumed to grow at 2.75% per year.

Actuarial Methods and Assumptions (Continued)

4. Disability rates

Sample rates per 1,000 active members are shown below. Rates are based on Rhode Island MERS experience for general employees. No recovery is assumed.

Age	Males	Females
25	0.59	0.27
30	0.72	0.33
35	0.98	0.45
40	1.43	0.66
45	2.34	1.08
50	3.97	1.83
55	6.57	3.03
60	9.17	4.23
65	15.02	6.93

Actuarial Methods and Assumptions (Continued)

5. Termination rates

Rates of withdrawal among active members for reasons other than death or disability or retirement are shown below. Termination rates are not applied to members eligible for retirement. Rates are based on experience of Rhode Island MERS general employees.

Service	General Employees, Males & Females	Police & Fire, Males & Females
1	0.175000	0.100000
2	0.118774	0.047300
3	0.101396	0.036903
4	0.086148	0.030821
5	0.072887	0.026506
6	0.061471	0.023158
7	0.051757	0.020424
8	0.043604	0.018111
9	0.036868	0.016108
10	0.031408	0.014342
11	0.027082	0.012761
12	0.023746	0.011332
13	0.021259	0.010026
14	0.019479	0.008826
15	0.018263	0.007714
16	0.017470	0.006679
17	0.016956	0.005711
18	0.016579	0.004802
19	0.016198	0.003944
20	0.015669	0.000000
21	0.014851	0.000000
22	0.013602	0.000000
23	0.011778	0.000000
24	0.009239	0.000000
25	0.005841	0.000000

Actuarial Methods and Assumptions (Continued)

6. Salary increase rates

The sum of (i) a 3.00% wage inflation assumption (composed of a 2.75% price inflation assumption and a 0.25% additional general increase), and (ii) a service-related component as shown below. The assumption is based on experience of Rhode Island MERS general employees.

Years of Service	Service-Related Component	Total Increase
1	4.00%	7.00%
2	3.00	6.00
3	2.75	5.75
4	2.50	5.50
5	2.25	5.25
6	2.00	5.00
7	1.25	4.25
8	0.75	3.75
9-10	0.50	3.50
11-15	0.25	3.25
16 or more	0.00	3.00

Actuarial Methods and Assumptions (Continued)

7. Retirement rates: Unreduced retirement rates: a flat 25% per year retirement probability for members eligible for unreduced retirement. A 50% retirement probability at first eligibility will be applied.

Reduced retirement rates:

Age	Probability of Retirement	Age	Probability of Retirement
55	4%	61	15%
56	4%	62	30%
57	4%	63	25%
58	5%	64	25%
59	5%	65	60%
60	15%	66	80%

Terminated vested members are assumed to retire when eligible for normal retirement with service at termination date.

8. Investment and Administrative Expenses

The assumed investment return rate represents the anticipated net return after payment of all investment expenses. Administrative expenses are assumed to be equal to the actual administrative expenses for the fiscal year preceding the valuation date.

9. Benefit and Compensation Limits

Benefit limits under Section 415 and compensation limits under Section 401(a)(17) of the Internal Revenue Code are assumed to have no impact on benefits earned under this plan.

10. Marriage

85% of men and 55% of women are assumed to be married before retirement. Husbands are assumed to be three years older than wives.

11. Military Service Buyback

None assumed.



Actuarial Methods and Assumptions (Continued)

- 12. Sick Pay Buyback** 25% of employees are assumed to apply their unused sick pay toward the purchase of 6 months of additional pension service at termination or retirement.
- 13. Cost-of-living Increases** It is assumed the cola formula will produce 0.75% annual cost-of-living increases over time. Plan provides cost-of-living increases contingent on the adequacy of a “bank” determined by fund performance.
- 14. Interest on accounts** Interest is credited to member contribution accounts based on a short-term return, assumed to be 3.00% per annum in the future.
- 15. Decrement Timing** For all members, decrements are assumed to occur at the beginning of the year.

TABLE 8

Outline of Principal Plan Provisions

1. *Effective Dates:*

- a. Original Plan July 1, 1965.
- b. Most Recent Amendment Recognized in Valuation July 1, 2000.

2. *Eligibility:*

Non-elected employees are eligible to participate after 6 months of employment. Members who join the Plan by June 30, 2012 are in Tier 1, while members join later are in Tier 2. Elected officials are eligible on the date they assume their elected position.

3. *Normal Retirement:*

- a. Eligibility Non-elected members who have attained age 65 and have reached their fifth anniversary of participation, and elected members who have attained age 60 and have reached their sixth anniversary of participation may retire.
- b. Benefit Formula The monthly benefit at retirement is equal to a benefit multiplier (different by tiers) times final average monthly compensation multiplied by years of creditable service. A benefit multiplier is equal to 2.50% for Tier 1 members while it is equal to 2.00% for Tier II members. Final average monthly compensation is one-twelfth of the average of the highest three consecutive years of base compensation. However, no elected member will receive less than one-twelfth of the sum of \$1,500 plus \$200 multiplied by years of creditable service; the sum not to exceed \$5,500. Plan compensation is equal to the sum of base compensation and longevity pay.
- c. Commencement Date Payments will commence on the first day of the month coincident with or next following the member's actual retirement and filing of his written application for benefits.

Outline of Principal Plan Provisions (Continued)

- d. Form of Payment The benefits calculated in accordance with the formula in (b) above are payable monthly with payments ceasing at the retired member's death. The member may also elect actuarially reduced benefits that are payable in the form of a 100%, 75%, or 50% joint and survivor annuity, 10-year certain and continuous annuity, or level income annuity. In no event will the total monthly benefits paid to a retired member and his beneficiary be less than the contributions made by the member during employment.

4. *Early Retirement:*

- a. Eligibility Any member other than an elected official who retires after age 55 with at least 10 years of creditable service or any member whose years of age plus service total 80 or more. An elected official is eligible upon attainment of age 55 with at least 6 years of service.
- b. Benefit Formula The benefit amount determined under the normal retirement formula above, reduced for commencement prior to age 65, is payable at early retirement. The reduction is equal to $\frac{1}{2}\%$ per month for the first sixty months prior to normal retirement age, plus $\frac{1}{3}\%$ per month thereafter.
- For Tier I non-elected members - If the sum of the retired member's years of age plus service is at least equal to 80, there is no reduction for early commencement.
- For Tier II non-elected members - If the retired member at age 59 with 25 or more of credited years of service, there is no reduction for early commencement.
- c. Commencement Date The first day of the month coincident with or next following the member's early retirement date and filing of his written application for benefits.
- d. Form of Payment Same as normal retirement.



Outline of Principal Plan Provisions (Continued)

5. *Late Retirement:*

- a. Eligibility Continued employment beyond normal retirement.
- b. Benefit Formula Same as normal retirement benefit formula determined as of the member's actual retirement date.
- c. Commencement Date The first day of the month coincident with or next following the member's late retirement and filing of his written application for benefits.
- d. Form of Payment Same as normal retirement.

6. *Vested Termination:*

- a. Eligibility Upon termination of employment, a non-elected member is eligible for a benefit deferred to retirement age after 10 years of creditable service. An elected member is eligible after 6 years of creditable service.
- b. Benefit Formula Same as early retirement. For all members except elected officials, the benefit amount determined under the normal retirement formula is increased by 3% per year between termination and retirement.

In lieu of receiving retirement benefits, a member may receive in a lump sum payment his or her accumulated contributions with interest at any time prior to commencement of retirement benefits.
- c. Commencement Date First day of the month following receipt of the member's written application but not before the member is eligible for early retirement.
- d. Form of Payment Same as normal retirement.

7. *Disability Retirement:*

- a. Eligibility A non-elected member who has completed 10 years of creditable service or an elected member who has completed 6 years of creditable service, and who is totally disabled as determined by the City's Medical Board.
- b. Benefit Formula Same as normal retirement above but reduced by Worker's Compensation payments.



Outline of Principal Plan Provisions (Continued)

- c. Commencement Date Retroactively payable to the first day of the month which is two months prior to the date a member is determined to be disabled, but no earlier than 90 days after the date of disability.
- d. Form of Payment Payable monthly with payments ceasing at the member's death. Benefits shall cease if a member recovers prior to age 65.

8. Non-vested Termination of Employment:

A non-elected member who leaves employment prior to completing 10 years of creditable service or an elected member who leaves prior to completing 6 years of creditable service will receive a lump sum payment of his accumulated contributions with interest.

9. Death Before Retirement -- Annuity to Surviving Spouse:

- a. Eligibility Any married non-elected member with 10 years of creditable service or any married elected member with 6 years of creditable service who dies while still employed after age 50.
- b. Benefit Formula The benefit is the same as vested deferred or early retirement with reduction for each month by which benefit commencement precedes age 65 and further reduced to reflect the optional form of payment which provides payments at the same rate to the surviving spouse. A member's surviving spouse may elect to receive a lump sum payment equal to the member's accumulated contributions with interest in lieu of the annuity described above.
- c. Commencement Date First day of the month following the later of the member's death or the member's earliest retirement date.
- d. Form of Payment Annuity providing monthly payments ceasing on the spouse's death.



Outline of Principal Plan Provisions (Continued)

10. Death Before Retirement - Lump Sum Refund of Contributions:

- a. Eligibility Any terminated member with a deferred vested benefit, or an active member not eligible for the surviving spouse's annuity described above.
- b. Benefit Lump sum payment equal to member's accumulated contributions with interest.

11. Additional Death Benefit:

- a. Eligibility Any active member or retired member.
- b. Benefit An \$8,000 lump sum amount will be paid to the deceased member's designated beneficiary in addition to any other death benefits provided by the plan.

12. Retiree Cost-of-Living

Increases:

An increase is provided annually on July 1 to all retired members and beneficiaries in pay status if the plan's cumulative investment return as of the previous July 1 has exceeded a target level based on negotiated salary increases for active employees.

13. Military Service Buyback:

An active employee eligible to retire, or who has attained age 55 and completed eight years of creditable service, and who has served in the U.S. armed forces, may "purchase" additional years of creditable service up to his number of years of military service, but no more than four years. This purchase would require the employee to contribute to the plan at retirement 6% of his final year's salary for each year of creditable service purchased.

14. Unused Sick Pay Buyback:

A member may, in lieu of receiving one half of his accumulated sick pay in cash at termination or retirement, receive pension service credit for the unused sick pay (6-month maximum).

15. Employee Contributions:

A non-elected member contributes 9.5% of his annual base compensation and longevity compensation; an elected member contributes 9.5% of his annual base compensation plus \$20 per month. Employee contributions are made on a pre-tax basis under IRC Section 414(h)(2). Contributions receive interest determined annually by the Retirement Board.



Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

Table 9

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. 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;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. 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.

The computed contribution may be considered as a minimum contribution rate that complies with the funding policy. The timely receipt of the actuarially determined contributions is critical to



Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution (Continued)

support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

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:

	<u>June 30, 2023</u>	<u>June 30, 2022</u>	<u>June 30, 2021</u>	<u>June 30, 2020</u>	<u>June 30, 2019*</u>
Ratio of the market value of assets to total payroll	7.4	7.2	9.6	7.3	6.7
Ratio of actuarial accrued liability to payroll	9.6	10.0	11.0	10.3	9.1
Ratio of actives to retirees and beneficiaries	0.7	0.7	0.6	0.7	0.9
Ratio of net cash flows to market value of assets	-2.3%	-2.7%	-2.2%	-2.0%	-2.0%
Duration of the actuarial accrued liability	11.9	12.0	12.0	12.2	12.1

*Risk measures on June 30, 2019 have been revised based on the restated information.

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 5.5 times the payroll, a change in liability 2% other than assumed would equal 11% 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 active 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 (Continued)

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 PRESENT VALUE OF BENEFITS

The duration of the present value of benefits (PVB) 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 PVB 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. These types of other assessments are provided to the Board in the annual presentation.

Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDRM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

“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.”

The LDRM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher risk, which creates less certainty and a possibility of higher costs. The LDRM model creates higher expected costs but more predictability when compared to the current model. Thus, the difference between the two measures (Valuation and LDRM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 4.90%.



Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution (Continued)

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

LDROM measure of benefits earned as of the measurement date:	\$254 million
Valuation liability (IEAN) at 6.9% on measurement date:	<u>206 million</u>
Cost to mitigate investment risk in the System's portfolio:	\$ 48 million

ASOP 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. Specifically, if plan assets were changed to be invested exclusively in low-default-risk securities, the funded status would be lower and the contributions would have to immediately be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce the standard deviation of investment volatility, the higher necessary contributions would produce a larger ratio of assets to payroll, and thus it is not self-evident that the volatility of the employer contributions would be any lower. In addition, the portfolio would be expected to generate less investment earnings over time, thus it also would be more likely to result in higher employer contributions and/or lower benefits.

Disclosures: Discount rate used to calculate LDROM: 4.90% Intermediate FTSE Pension Discount Curve as of June 30, 2023. This measure is not appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.



Glossary

Table 10

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or Funding Method: A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ARC.

Actuarial Gain or Actuarial 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. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Glossary (Continued)

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

- a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)
- b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and
- c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB 25, such as the funded ratio and the ARC.

Actuarial Value of Assets or Valuation Assets: The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ARC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ARC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.



Glossary (Continued)

Annual Required Contribution (ARC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under GASB 25. The ARC consists of the Employer Normal Cost and the Amortization Payment

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically, a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or Amortization Period: The term "Funding Period" is used in two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ARC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 25 and GASB 27: Governmental Accounting Standards Board Statements No. 25 and No. 27. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 27 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 25 sets the rules for the systems themselves.



Glossary (Continued)

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

