City of Grand Rapids Police and Fire Retirement System

GASB Statement Nos. 67 and 68 Accounting and Financial Reporting for Pensions

Measurement Date: December 31, 2023

GASB No. 68 Reporting Date: June 30, 2024

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April 22, 2024

Ms. Peggy Korzen
Board of Trustees
City of Grand Rapids Police
and Fire Retirement System
Grand Rapids, Michigan

Dear Ms. Korzen:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the City of Grand Rapids Police and Fire Retirement System ("the System"). These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

This report was prepared at the request of the City and is intended for use by the Retirement System and those designated or approved by the City. This report may be provided to parties other than the System only in its entirety and only with the permission of the City. GRS is not responsible for unauthorized use of this report.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 67 may produce significantly different results. The Net Pension Liability is not an appropriate measure for assessing the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability also is not an appropriate measure for assessing the need for or amount of future employer contributions.

The valuation was based upon information furnished by the City and Plan Administrator, concerning Retirement System benefits, financial transactions, plan provisions, and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

This report complements the actuarial valuation report that was provided to the Board and should be considered in conjunction with that report. Please see the actuarial valuation report as of December 31, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

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.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the City of Grand Rapids Police and Fire Retirement System. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

James D. Anderson and Jeffrey T. Tebeau 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.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

James D. Anderson

James D. Anderson, FSA, EA, FCA, MAAA

Jeffrey T. Tebeau

Jeffrey T. Tebeau, FSA, EA, FCA, MAAA

JDA/JTT:sc

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

Actuarial Valuation Date	December 31, 2023
Measurement Date of the Net Pension Liability	December 31, 2023
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2024

Membership		
Number of		
- Retirees and Beneficiaries		790
- Inactive, Nonretired Members		16
- Active Members		482
- Total		1,288
Covered Payroll#	$	46,909,560
Net Pension Liability		
Total Pension Liability	$	684,582,165
Plan Fiduciary Net Position		493,517,394
Net Pension Liability	$	191,064,771
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		72.09%
Net Pension Liability as a Percentage of Covered Payroll		407.30%
Development of the Single Discount Rate		
Single Discount Rate		6.75%
Long-Term Expected Rate of Investment Return		6.75%
Long-Term Municipal Bond Rate*		3.77%
Last year ending January 1 in the 2024 to 2123 projection period for which projected benefit payments are fully funded		2123
Total Pension Expense	$	30,859,755

Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 14,354,189	$ -
Changes in assumptions	5,317,653	-
Net difference between projected and actual earnings on pension plan investments	59,458,732	38,783,053
Total	**$ 79,130,574**	**$ 38,783,053**

 # Covered payroll was provided by the City as defined in GASB Statement Nos. 67 and 68.

** Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of December 31, 2023. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.*

Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report, and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to the System subsequent to the measurement date of December 31, 2023.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The statement of fiduciary net position presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The statement of changes in fiduciary net position presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position and the net pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- Annual money-weighted rate of return.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

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 actuarial value of assets), then the following outcomes are expected:

1. The employer normal cost as a percentage of pay is expected to remain level as a percentage of payroll.
2. The unfunded liability is expected to be paid off in approximately 30 years, which is the number of years remaining in the closed amortization schedule of the unfunded liability for December 31, 2023.
3. The funded status of the plan is expected to reach a 100% funded ratio in approximately 30 years, which is the number of years remaining in the closed amortization schedule of the unfunded liability for December 31, 2023.

This funding policy results in the expectation that the plan's assets will be able to fully pay for promised benefits through at least 2123. The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of December 31, 2023 and a measurement date of December 31, 2023.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Bond Buyer Index) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75%; the municipal bond rate is 3.77% (based on the weekly rate closest to but not later than the measurement date of the "20-Bond GO Index" rate from the Bond Buyer Index, general obligation, 20 years to maturity, mixed quality); and the resulting Single Discount Rate is 6.75%.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense under GASB Statement No. 68
Measurement Date – December 31, 2023
Reporting Date – June 30, 2024

A. Expense	
1. Service Cost	$ 13,092,487
2. Interest on the Total Pension Liability	43,692,739
3. Current Period Benefit Changes	-
4. Employee Contributions (made negative for addition here)	(6,062,639)
5. Projected Earnings on Plan Investments (made negative for addition here)	(30,476,606)
6. Pension Plan Administrative Expense	645,899
7. Other Changes in Plan Fiduciary Net Position	-
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	15,709,931
9. Recognition of Outflow (Inflow) of Resources due to Assets	(5,742,056)
10. Total Pension Expense	**$ 30,859,755**

Statement of Outflows and Inflows Arising from the Current Reporting Period
Measurement Date – December 31, 2023
Reporting Date – June 30, 2024

A. Outflows (Inflows) of Resources Due to Liabilities	
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	$ 6,059,836
2. Assumption Changes (gains) or losses	$ -
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	4.2000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$ 1,442,818
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	$ -
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$ 1,442,818
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	$ 4,617,018
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	$ -
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$ 4,617,018
B. Outflows (Inflows) of Resources Due to Assets	
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$ (19,660,362)
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	$ (3,932,072)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$ (15,728,290)

Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods
Measurement Date – December 31, 2023
Reporting Date – June 30, 2024

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to Liabilities	$ 15,709,931	$ -	$ 15,709,931
2. Due to Assets	19,819,577	25,561,633	(5,742,056)
3. Total	**$ 35,529,508**	**$ 25,561,633**	**$ 9,967,875**

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	$ 7,625,361	$ -	$ 7,625,361
2. Assumption Changes	8,084,570	-	8,084,570
3. Net Difference between projected and actual earnings on pension plan investments	19,819,577	25,561,633	(5,742,056)
4. Total	**$ 35,529,508**	**$ 25,561,633**	**$ 9,967,875**

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	$ 14,354,189	$ -	$ 14,354,189
2. Assumption Changes	5,317,653	-	5,317,653
3. Net Difference between projected and actual earnings on pension plan investments	59,458,732	38,783,053	20,675,679
4. Total	**$ 79,130,574**	**$ 38,783,053**	**$ 40,347,521**

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows of Resources
2025	$ 14,631,743
2026	12,028,963
2027	17,330,324
2028	(3,643,509)
2029	-
Thereafter	-
Total	**$ 40,347,521**

Recognition of Deferred Outflows and Inflows of Resources
Measurement Date – December 31, 2023
Reporting Date – June 30, 2024

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities					
2020	$ 2,068,208	4.0	$ -	$ -	0.0
2021	2,397,342	4.1	584,718	58,470	0.1
2022	7,963,985	4.2	1,896,187	2,275,424	1.2
2023	14,806,552	4.0	3,701,638	7,403,276	2.0
2024	6,059,836	4.2	1,442,818	4,617,018	3.2
Total			**7,625,361**	**14,354,189**	
Deferred Outflow (Inflow) due to Assumption Changes					
2021	$ 16,339,734	4.1	$ 3,985,301	$ 398,530	0.1
2022	17,216,930	4.2	4,099,269	4,919,123	1.2
2023	0	4.0	0	0	2.0
2024	0	4.2	0	0	3.2
Total			**8,084,570**	**5,317,653**	
Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments					
2020	$ (43,884,445)	5.0	$ (8,776,889)	$ -	0.0
2021	(13,252,917)	5.0	(2,650,583)	(2,650,585)	1.0
2022	(51,010,445)	5.0	(10,202,089)	(20,404,178)	2.0
2023	99,097,886	5.0	19,819,577	59,458,732	3.0
2024	(19,660,362)	5.0	(3,932,072)	(15,728,290)	4.0
Total			**(5,742,056)**	**20,675,679**	

According to paragraph 33 of GASB Statement No. 68, differences between expected and actual experience and changes in assumptions are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the current measurement period, the expected remaining service lives of all active employees in the plan was approximately 5,182 years. Additionally, the total plan membership (active employees and inactive employees) was 1,245. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the current measurement period is 4.2 years.

Additionally, differences between projected and actual earnings on pension plan investments should be recognized in pension expense using a systematic and rational method over a closed five-year period. For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

Statement of Fiduciary Net Position
as of December 31, 2023

Assets	
Cash and Deposits	$ 4,579,643
Receivables	
Accounts Receivable - Sale of Investments	$ -
Accrued Interest and Other Dividends	736,440
Contributions	1,442,296
Accounts Receivable - Other	1,372,732
Total Receivables	$ 3,551,468
Investments	
Fixed Income	135,620,515
Equities - Mutual and Hedge Funds	182,730,725
Equities - Common Stock	65,227,574
Real Estate	24,732,801
Other - Private Equity/Credit and Commodities	77,876,871
Total Investments	$ 486,188,486
Total Assets	**$ 494,319,597**
Liabilities	
Payables	
Accounts Payable	$ 431,301
Accrued Expenses	370,902
Other	-
Total Liabilities	**$ 802,203**
Net Position Restricted for Pensions	**$ 493,517,394**

Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2023

Additions	
Contributions	
Employer	$ 16,366,549
Employee	6,062,639
Other	-
Total Contributions	$ 22,429,188
Investment Income	
Net Appreciation in Fair Value of Investments	$ 43,254,024
Interest, Dividends and Securities Lending	8,009,348
Less Investment Expense	(1,126,404)
Net Investment Income	$ 50,136,968
Other	$ -
Total Additions	**$ 72,566,156**
Deductions	
Benefit Payments, including Refunds of Employee Contributions	$ 38,032,984
Pension Plan Administrative Expense	645,899
Other	-
Total Deductions	**$ 38,678,883**
Net Increase in Net Position	**$ 33,887,273**
Net Position Restricted for Pensions	
Beginning of Year	**$ 459,630,121**
End of Year	**$ 493,517,394**

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedules of Required Supplementary Information
Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Measurement Date - December 31,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	$ 13,092,487	$ 11,755,473	$ 10,109,359	$ 9,269,719	$ 9,071,101	$ 8,780,168	$ 8,723,494	$ 8,588,314	$ 7,482,069	$ 7,794,219
Interest on the Total Pension Liability	43,692,739	41,634,797	40,340,298	38,670,466	37,279,003	35,724,491	34,356,315	32,676,161	29,375,231	28,440,421
Benefit Changes	-	109,480	-	-	-	-	-	114,084	-	-
Difference between Expected and Actual Experience	6,059,836	14,806,552	7,963,985	2,397,342	2,068,208	4,658,725	3,265,534	7,264,098	16,663,107	2,978,624
Assumption/Method Changes	-	-	17,216,930	16,339,734	-	-	5,497,995	1,551,086	35,683,769	-
Benefit Payments	(34,914,560)	(37,260,216)	(31,391,289)	(29,880,788)	(27,511,480)	(27,117,475)	(24,794,055)	(29,338,856)	(32,070,933)	(21,079,038)
Refunds	(3,118,424)	(1,680,344)	(1,531,742)	(501,756)	(219,197)	(286,684)	(19,080)	(21,606)	(11,369)	(24,749)
Net Change in Total Pension Liability	**$ 24,812,078**	**$ 29,365,742**	**$ 42,707,541**	**$ 36,294,717**	**$ 20,687,635**	**$ 21,759,225**	**$ 27,030,203**	**$ 20,833,281**	**$ 57,121,874**	**$ 18,109,477**
Total Pension Liability - Beginning	**$ 659,770,087**	**$ 630,404,345**	**$ 587,696,804**	**$ 551,402,087**	**$ 530,714,452**	**$ 508,955,227**	**$ 481,925,024**	**$ 461,091,743**	**$ 403,969,869**	**$ 385,860,392**
Total Pension Liability - Ending (a)	**$ 684,582,165**	**$ 659,770,087**	**$ 630,404,345**	**$ 587,696,804**	**$ 551,402,087**	**$ 530,714,452**	**$ 508,955,227**	**$ 481,925,024**	**$ 461,091,743**	**$ 403,969,869**
Plan Fiduciary Net Position										
Employer Contributions	$ 16,366,549	$ 13,124,901	$ 11,660,533	$ 10,716,480	$ 9,672,074	$ 9,421,305	$ 8,911,489	$ 7,166,351	$ 5,630,297	$ 6,331,848
Employee Contributions	6,062,639	5,927,247	5,930,546	5,379,200	5,832,668	5,313,127	5,114,841	4,929,842	4,557,165	4,563,692
Pension Plan Net Investment Income	50,136,968	(63,118,350)	83,738,143	44,596,181	71,134,823	(24,672,147)	53,740,592	25,712,942	(9,083,712)	29,390,902
Benefit Payments	(34,914,560)	(37,260,216)	(31,391,289)	(29,880,788)	(27,511,480)	(27,117,475)	(24,794,055)	(29,338,856)	(32,070,933)	(21,079,038)
Refunds	(3,118,424)	(1,680,344)	(1,531,742)	(501,756)	(219,197)	(286,684)	(19,080)	(21,606)	(11,369)	(24,749)
Pension Plan Administrative Expense	(645,899)	(622,188)	(550,780)	(576,813)	(592,306)	(602,512)	(580,690)	(542,277)	(581,364)	(523,607)
Other	-	(52,798)	(46,903)	(56,632)	(44,775)	(45,967)	-	-	-	(15,065)
Net Change in Plan Fiduciary Net Position	**33,887,273**	**(83,681,748)**	**67,808,508**	**29,675,872**	**58,271,807**	**(37,990,353)**	**42,373,097**	**7,906,396**	**(31,559,916)**	**18,643,983**
Plan Fiduciary Net Position - Beginning	**459,630,121**	**543,311,869**	**475,503,361**	**445,827,489**	**387,555,682**	**425,546,035**	**383,172,938**	**375,266,542**	**406,826,458**	**388,182,475**
Plan Fiduciary Net Position - Ending (b)	**$ 493,517,394**	**$ 459,630,121**	**$ 543,311,869**	**$ 475,503,361**	**$ 445,827,489**	**$ 387,555,682**	**$ 425,546,035**	**$ 383,172,938**	**$ 375,266,542**	**$ 406,826,458**
Net Pension Liability - Ending (a) - (b)	**$ 191,064,771**	**$ 200,139,966**	**$ 87,092,476**	**$ 112,193,443**	**$ 105,574,598**	**$ 143,158,770**	**$ 83,409,192**	**$ 98,752,086**	**$ 85,825,201**	**$ (2,856,589)**
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	**72.09 %**	**69.67 %**	**86.18 %**	**80.91 %**	**80.85 %**	**73.03 %**	**83.61 %**	**79.51 %**	**81.39 %**	**100.71 %**
Covered-Employee Payroll #	**$ 46,909,560**	**$ 42,471,823**	**$ 41,018,362**	**$ 40,201,129**	**$ 39,566,105**	**$ 38,122,879**	**$ 38,919,488**	**$ 38,129,771**	**$ 36,827,593**	**$ 35,710,964**
Net Pension Liability as a Percentage of Covered-Employee Payroll	**407.30 %**	**471.23 %**	**212.33 %**	**279.08 %**	**266.83 %**	**375.52 %**	**214.31 %**	**258.99 %**	**233.05 %**	**(8.00)%**
Notes to Schedule:	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

 # Reported rates of pay adjusted by gross-up factors to estimate covered payroll. Beginning with the fiscal year ending 2021, covered payroll was reported by the System.

Schedules of Required Supplementary Information
Schedule of the Employers' Net Pension Liability

FY Ending December 31,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll#	Net Pension Liability as a % of Covered Payroll
2014	$ 403,969,869	$ 406,826,458	$ (2,856,589)	100.71%	$ 35,710,964	(8.00)%
2015	461,091,743	375,266,542	85,825,201	81.39%	36,827,593	233.05 %
2016	481,925,024	383,172,938	98,752,086	79.51%	38,129,771	258.99 %
2017	508,955,227	425,546,035	83,409,192	83.61%	38,919,488	214.31 %
2018	530,714,452	387,555,682	143,158,770	73.03%	38,122,879	375.52 %
2019	551,402,087	445,827,489	105,574,598	80.85%	39,566,105	266.83 %
2020	587,696,804	475,503,361	112,193,443	80.91%	40,201,129	279.08 %
2021	630,404,345	543,311,869	87,092,476	86.18%	41,018,362	212.33 %
2022	659,770,087	459,630,121	200,139,966	69.67%	42,471,823	471.23 %
2023	684,582,165	493,517,394	191,064,771	72.09%	46,909,560	407.30 %

 # Reported rates of pay adjusted by gross-up factors to estimate covered payroll. Beginning with the fiscal year ending 2021, covered payroll was reported by the System.

Schedule of Contributions

FY Ending December 31,	Actuarially Determined Contribution	Actual Contribution*	Contribution Deficiency (Excess)	Covered Payroll #	Actual Contribution as a % of Covered Payroll
2014	$ 6,331,848	$ 6,331,848	$ -	$ 35,710,964	17.73%
2015	5,630,297	5,630,297	0	36,827,593	15.29%
2016	7,166,351	7,166,351	0	38,129,771	18.79%
2017	8,911,489	8,911,489	0	38,919,488	22.90%
2018	9,421,305	9,421,305	0	38,122,879	24.71%
2019	9,672,074	9,672,074	0	39,566,105	24.45%
2020	10,716,480	10,716,480	0	40,201,129	26.66%
2021	11,660,533	11,660,533	0	41,018,362	28.43%
2022	13,124,901	13,124,901	0	42,471,823	30.90%
2023	16,366,549	16,366,549	0	46,909,560	34.89%

Reported rates of pay adjusted by gross-up factors to estimate covered payroll. Beginning with the fiscal year ending 2021, covered payroll was reported by the System.

* *Actual contributions are based on covered payroll at the time of the contribution. Since it was reported to the actuary that the City's practice is to contribute the percent-of-payroll employer contribution rate shown in the actuarial valuation report, the annual required contributions shown in the Schedule of Employer Contributions are the actual contributions made by the City in the fiscal year.*

Notes to Schedule of Contributions

Valuation Date:	December 31, 2023
Notes:	Actuarially determined contribution rates are calculated as of December 31, which is 18 months prior to the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates for the Fiscal Year Beginning July 1, 2023:

Actuarial Cost Method	Individual Entry Age
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	Multiple periods (24 to 30 years as of December 31, 2021)
Asset Valuation Method	5-year smoothed market
Inflation	3.0% wage inflation, 2.25% price inflation
Salary Increases	3.00% to 20.00% including inflation
Investment Rate of Return	6.75% as of December 31, 2021
Cost-of-Living Adjustments	Ad hoc "13th check" tied to plan investments for benefit recipients who do not have an automatic benefit increase. 1.5% simple escalator for firefighters retired on or after July 1, 2007 with commencement delayed 2 years after retirement. 1.5% simple escalator for Fire Chief retired on or after January 1, 2016 and Deputy Fire Chief retired on or after October 6, 2016 with commencement delayed 2 years after retirement. 1.0% simple escalator for police command officer retired on or after February 19, 2010 with commencement delayed 5 years after retirement. 1.0% simple escalator for police officers and sergeants retired on or after December 17, 2008 with commencement delayed 5 years after retirement. 1.0% simple escalator for Police Chief and Deputy Police Chief retired on or after January 1, 2016 with commencement delayed 5 years after retirement.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	Pub-2010 Amount-Weighted, Public Safety, Male and Female tables, with a base year of 2010 and future mortality improvement projected using scale MP-2019 on a fully generational basis.

Other Information:

Notes

SECTION D

NOTES TO FINANCIAL STATEMENTS

Long-Term Expected Return on Plan Assets

The following table shows the long-term expected returns as of January 2024, as provided by the System's investment consultant, Wilshire Consulting.

Asset Class	Target Allocation	Long-Term Expected Return* 10-Year	20-Year	30-Year
U.S. Equity	17.75%	5.00%	5.73%	6.45%
Non-U.S. Equity	17.75%	6.35%	6.80%	7.25%
Private Equity	5.00%	8.65%	9.15%	9.65%
Global Low Volatility Equity	10.00%	6.21%	6.59%	6.96%
Private Credit	5.00%	8.92%	9.04%	9.15%
Core Fixed Income	24.50%	4.75%	4.77%	4.78%
U.S. REITs	5.00%	5.60%	6.00%	6.40%
U.S. TIPS	5.00%	4.15%	4.33%	4.50%
Midstream Energy Infrastructure	5.00%	7.60%	7.88%	8.15%
Commodities	5.00%	6.05%	5.98%	5.90%
Total	100.00%	6.41%	6.73%	7.04%
Inflation		*2.25%*	*2.32%*	*2.38%*

**All return assumptions are geometric.*

The figures in the above table were supplied by the investment consultant. Gabriel, Roeder, Smith & Company does not provide investment advice.

For more information, please see our most recent review of the investment of the investment return assumption performed in February 2024.

Single Discount Rate

A single discount rate of 6.75% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 6.75%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 6.75%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is one percent lower or one percent higher.

	One Percent Lower	Current Single Discount Rate Assumption	One Percent Higher
	5.75%	**6.75%**	**7.75%**
Total Pension Liability	$ 770,121,598	$ 684,582,165	$ 614,178,729
Plan Net Position	493,517,394	493,517,394	493,517,394
Net Pension Liability	**$ 276,604,204**	**$ 191,064,771**	**$ 120,661,335**

Summary of Population Statistics as of December 31, 2023

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	790
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	16
Active Plan Members	482
Total Plan Members	1,288

SECTION E

SUMMARY OF BENEFITS

Summary of Benefit Provisions Evaluated
December 31, 2023

Voluntary Retirement. Police members may retire after attaining age 50 and completing 10 years of service. Firefighter members are eligible for retirement after attaining age 55 with 10 or more years of service. Firefighter members may also retire at the age their service reaches the service credit limit.

Compulsory Retirement. None.

Final Average Salary (FAS). The average of member's highest annual salary rates during the three consecutive calendar years of credited service when such compensation rates are the highest increased by the applicable FAS Adjustment Factor 17.6% for Police members for the period January 1, 2023 to June 30, 2023, and 19.2% for Police members for the period July 1, 2023 to December 31, 2023, 15.7% for Firefighter members for the period January 1, 2023 to June 30, 2023, and 19.2% for Firefighter members for the period July 1, 2023 to December 31, 2023. The FAS Adjustment Factor for Non-Represented members (Fire Chief, Deputy Fire Chief, Police Chief, and Deputy Police Chiefs) is based upon the ratio of years of service while in a collective bargaining unit to total years of service. (Highest salary rates that occur in calendar years after the calendar year in which the member reaches their service credit limit will not be included in the FAS).

Benefit Multiplier Description. See page 20.

Benefit Multiplier. The member's benefit multiplier, used to compute full age and service allowance, is defined in the following table:

Benefit Multipliers and Allowance Caps for Member Groups

Covered Group	***Date of Hire***	***Benefit Multiplier***	***Allowance Cap***
Firefighters	Prior to July 1, 1992	2.5%	100%
	-or-		
	Prior to July 1, 1992	2.8%	94.5%
	July 1, 1992 to January 9, 2012	2.8%	90%
	January 10, 2012 or after	2.0%*	90%
Fire Chief or Deputy Fire Chief	At any time (must be member of System at time of hire)	2.8%	94.5%
Police Command	Prior to July 1, 2001	2.8%	100%
	July 1, 2001 to December 19, 2011	2.8%	80%
	December 20, 2011 or after	2.0%[@]	80%
Police Chief or Deputy Police Chief	At any time (must be member of System at time of hire)	2.8%	100%
Police Officers and Sergeants	Before March 9, 1995	2.8%	100%
	March 9, 1995 to June 30, 2001	2.8%	87.5%
	July 1, 2001 to December 19, 2011	2.8%	80%
	December 20, 2011 or after	2.0%[#]	80%

* *Firefighter members hired between January 10, 2012 and August 13, 2019 will have a 2.0% multiplier for the first five years of employment, but may choose one of the higher multipliers (2.2%, 2.4%, 2.6%, or 2.8%) and have this multiplier take effect as early as six months after their date of hire by making additional member contributions. Firefighter members hired after August 13, 2019 may select one of the higher multipliers listed above beginning at six months of service and until the member's five-year anniversary, but their election will not be retroactive.*

[@] *Police Command members hired on or after December 20, 2011 will have a 2.0% multiplier for the first five years of employment. Members may then irrevocably elect that multiplier, or, by making higher member contributions, elect a higher multiplier for all future service (2.2%, 2.4%, 2.6%, or 2.8%). Police Command members promoted from the Police Officers and Sergeants unit retain their multiplier election.*

[#] *Police Officer and Sergeant members hired between December 20, 2011 and August 31, 2019 will have a 2.0% multiplier for the first five years of employment, but may choose one of the higher multipliers (2.2%, 2.4%, 2.6%, or 2.8%) and have this multiplier take effect as early as six months after their date of hire by making additional member contributions. Police Officer members hired on or after September 1, 2019 must make their multiplier election no later than six months following their date of hire and the election will be effective as of the member's six-month employment anniversary.*

Full Age and Service Allowance. Allowance, payable monthly for life to the retired member, equals the member's benefit multiplier times the member's FAS times years of credited service. In lieu of this single life-level amount form of payment, a retiring member may elect from a variety of optional forms of payment, each of which is the actuarial equivalent (same lump sum value at time of retirement) of the single life-level payment form.

Deferred Allowance. A member with 10 or more years of service who leaves covered employment before retirement is eligible to receive an allowance computed in the same manner as an age and service allowance but based upon the member's employment record to the time of leaving. Such deferred allowance commences the first day of the calendar month next following the later of the date of the member's attainment of age 50 or the date when written application therefore is received by the Board. Benefits may be actuarially reduced in accordance with the Early Retirement provision if applicable.

Early Allowance. A Firefighter member who leaves covered employment after both attaining age 50 and completing 10 years of service is eligible to receive an immediate early allowance (in lieu of a deferred allowance), computed in the same manner as a deferred allowance based upon the member's employment record to the time of early retirement, but actuarially reduced (per schedule in ordinance) to reflect the fact that the age when payments begin is younger than age 55.

Duty Disability Allowance. A member who becomes totally and permanently disabled from duty-connected causes is eligible to receive, subject to offsets, a duty disability allowance computed in the same manner as a full age and service allowance based upon the member's employment record to the time of disability with a minimum allowance before offset of 72% of FAS. The maximum allowance after offsets is 90% of final salary less amounts received from (i) Worker's Compensation, (ii) gainful employment as a law enforcement officer or firefighter, and (iii) Social Security disability income.

Non-Duty Disability Allowance. A member with 1 or more years of credited service and who has not attained the minimum service retirement age, who becomes totally and permanently disabled from other than duty-connected causes is eligible to receive a non-duty disability allowance computed in the same manner as a full age and service allowance, based upon the member's employment record to the time of disability. Minimum benefit for Police Officers is 48% of FAS if credited service is less than 20 years or 60% of FAS if credited service is 20 or more years. Minimum benefit for Police Command Officers is based on the earlier of (i) the date the member would have completed 20 (if credited service is less than 20 years) or 25 years of service (if credited service is 20 or more years) or (ii) the date the member would have reached 50 years of age. Minimum benefit for Firefighters is based on the earlier of (i) the date the member would have completed 20 (if credited service is less than 20 years) or 25 years of service (if credited service is 20 or more years) or (ii) the date the member would have reached 55 years of age. For Fire members hired on or after July 1, 2016 or any Police members, until a member reaches the Pension System vesting requirement of 10 years of service, the benefit the member is entitled to is 50% for service years 1-5, then an additional 10% of the above formula for every year of service accrued in the System (e.g., 1-5 years of service = 50% of Non-Duty Disability Allowance, 6 years = 60%, …, 10 years = 100%).

Death-in-Service Benefits. Upon the death of a member, surviving dependents are eligible to receive the following benefits, subject to offsets for Worker's Compensation and Social Security.

(a) The widow receives an allowance equal to the Option B-100 allowance (joint and 100% survivor actuarial equivalent benefit) which would have been payable to her had the deceased member retired the day preceding the date of his death and elected Option B-100. The minimum allowance payable to the widow is 20% of the member's FAS. If the death was determined to be duty-related, the minimum allowance payable to the widow is 72% of the member's final average salary (60% for Command or Firefighters hired after June 30, 1992).

(b) Dependent children under age 18 (up to age 23 if they are continuous full-time students) each are eligible to receive an allowance of 15% of the member's FAS. If there are four or more dependent children, each child receives an equal share of 50% of the member's FAS.

(c) If there are neither a widow nor children, each dependent parent is eligible to receive an allowance equal to 15% of FAS.

Compensation. Compensation upon which members contribute includes base pay, longevity pay, educational increment and vacation pay, plus the following additional compensation items:

Firefighters: Overtime pay (assumed to be 4.2% for calendars years before 2010 and actual overtime in 2010 and later), holiday pay, clothing allowance, acting assignment pay, shop pay and shift pay. For Firefighters retiring after January 1, 2012 up to six (6) days of unused vacation time may be converted to compensation. Effective January 9, 2019, certain Firefighters may convert additional vacation hours to equate to the same vacation accrual payment as fire members assigned to fire suppression at the same rank.

Police Officers and Police Command Officers: Overtime pay, comp. payoff, holiday pay, clothing allowance, acting assignment, witness fees and shift pay.

The average of the additional compensation items is used to annually adjust the FAS Adjustment Factor. In addition, compensation will not include any amount that would cause the System to be in violation of IRC Sections 401(a) (17) or 415(d).

Member Contributions. Member contribution rates shall be payable in accordance with the following table.

System Funding Represented as a Percentage of Valuation Assets to Actuarial Accrued Liabilities	Firefighters Hired Before Jan. 10, 2012	Firefighters Hired After Jan. 10, 2012	Police Officers & Sergeants Hired Before Dec. 20, 2011	Police Officers & Sergeants Hired After Dec. 20, 2011	Police Command Officers
Below 100%	10.70%	7.70%	9.86%	6.86%	10.89%
100% - 104.999%	9.70%	6.70%	8.86%	5.86%	9.89%
105% - 109.999%	8.70%	5.70%	7.86%	4.86%	8.89%
110% - 114.999%	7.70%	4.70%	6.86%	3.86%	7.89%
115% - 119.999%	6.70%	4.70%	5.86%	2.86%	6.89%
120% - 124.999%	6.70%	4.70%	5.20%	2.20%	6.06%
125% - 129.999%	6.70%	4.70%	4.54%	1.54%	5.23%
130% - 134.999%	6.70%	4.70%	3.88%	0.88%	4.40%
135+%	6.70%	4.70%	3.22%	0.22%	3.57%

The member contribution rates used for the December 31, 2023 valuation were 10.70% (Firefighters hired before January 10, 2012), 7.70% (effective October 16, 2022 for Firefighters hired after January 10, 2012), 9.86% (Police Officers and Sergeants hired before December 20, 2011), 6.86% (effective November 27, 2022 for Police Officers and Sergeants hired after December 20, 2011), 10.89% (Police Command Officers) and 10.20% (Police Chief, Deputy Police Chiefs, Fire Chief and Deputy Fire Chief).

Members may elect their benefit multiplier/employee contributions based on the following:

- Firefighter members hired between January 10, 2012 and August 13, 2019 will have a 2.0% multiplier for the first five years of employment, but may choose one of the higher multipliers (2.2%, 2.4%, 2.6%, or 2.8%) and have this multiplier take effect as early as six months after their date of hire by making additional member contributions. Firefighter members hired after August 13, 2019 may select one of the higher multipliers listed above beginning at six months of service and until the member's five-year anniversary, but their election will not be retroactive.

- Police Command members hired on or after December 20, 2011 will have a 2.0% multiplier for the first five years of employment. Members may then irrevocably elect that multiplier, or, by making higher member contributions, elect a higher multiplier for all future service (2.2%, 2.4%, 2.6%, or 2.8%). Police Command members promoted from the Police Officers and Sergeants unit retain their multiplier election.

- Police Officer and Sergeant members hired between December 20, 2011 and August 31, 2019 will have a 2.0% multiplier for the first five years of employment, but may choose one of the higher multipliers (2.2%, 2.4%, 2.6%, or 2.8%) and have this multiplier take effect as early as six months after their date of hire by making additional member contributions. Police Officer members hired on or after September 1, 2019 must make their multiplier election no later than six months following their date of hire and the election will be effective as of the member's six-month employment anniversary.

The additional member contributions for the multiplier elections are as follows:

Multiplier for Future Service	Firefighters	Police Officers & Sergeants / Police Command Officers
2.0%	0.00%	0.00%
2.2%	1.34%	1.38%
2.4%	2.74%	2.79%
2.6%	4.18%	4.23%
2.8%	5.67%	5.68%

If a member terminates employment before any allowance is payable, accumulated contributions (contributions plus regular interest) are refunded.

Employer Contributions. The City contributes the remainder amounts necessary to maintain the Retirement System in sound financial condition in accordance with its funding objectives.

Automatic Post-Retirement Benefit Increases. Post-retirement benefit increases are paid to eligible groups as described in the following table.

	Firefighters	Deputy Fire Chief	Fire Chief	Police Officers and Sergeants	Police Command Officers	Police Chief and Deputy Police Chief
Effective date	Retired on or after July 1, 2007	Retired on or after October 6, 2016	Retired on or after January 1, 2016	Retired on or after December 17, 2008	Retired on or after February 19, 2010	Retired on or after January 1, 2016
Amount of increase	1.5% of original benefit	1.5% of original benefit	1.5% of original benefit	1.0% of original benefit	1.0% of original benefit	1.0% of original benefit
First increase to occur	2 years after retirement	2 years after retirement	2 years after retirement	5 years after retirement	5 years after retirement	5 years after retirement

The increase is paid on January or July following the end of the delay period. Benefit recipients who are eligible for the automatic post-retirement increase do not participate in the 13th check program.

13th Check. For members not eligible for automatic post-retirement increases, one-half of net investment income over 8% which is attributable to retired life assets is distributed annually (in January) to retired members and beneficiaries who have been on the retirement rolls for five years in the form of a 13th check. Net investment income is based on a market value rate of return averaged over the preceding five plan years. The distribution is in proportion to points. An individual's points are determined by multiplying (i) the number of full years of retirement, to a maximum of 15, by (ii) the number of years, and fractions thereof, of service at retirement. Subsequent to the calculations above, the benefit so calculated for Chief of Police, Deputy Chief, Police Command Officers, Police Officers and Sergeants, Fire Service, and beneficiaries having had at least 10 years of service under either bargaining unit shall be increased by 20 percent.

Key Employee Incentive Program (KEIP). Participation is open to any employee of the City of Grand Rapids Police and Fire Retirement System who attains service retirement eligibility and maintains a minimum leave accrual balance of 100 hours. A regular retirement benefit is computed for the member as of his KEIP election date based upon Final Average Compensation (FAC), credited service and benefit multiplier as of this date. Monthly payments equal to 75% of the computed monthly benefit are deposited into the KEIP Reserve Account (KRA) on behalf of this member. Interest is credited monthly to this balance in the KRA at the rate of 3%, compounded annually. Employer and member contributions shall cease as of the member's KEIP election date. The members may remain in the KEIP for up to five years and then must cease participation in the KEIP. The member's monthly benefit at retirement will be the original monthly payment determined at the KEIP election date plus any applicable post-retirement benefit increases.

***Eligibility*.** The Plan is closed to individuals hired from outside of the organization to fill the position of Fire Chief, Deputy Fire Chief, Police Chief or Deputy Police Chief.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods

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:

(i) The annual normal costs for each individual active member, payable from the date of employment to the date of retirement, are sufficient to accumulate the value of the portion of the member's benefit at the time of retirement; and

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

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded actuarial accrued liabilities arising in a given year are amortized over a closed 30-year period. Detail can be found on page A-18 of the December 31, 2023 valuation report.

Valuation Asset Method. Valuation Assets were determined using a method which phases in each year's differences between actual and assumed investment return over a closed five-year period. For GASB reporting purposes, the market value of assets is used.

Actuarial Assumptions Used for the Valuation Adopted by the Board of Trustees

The actuary calculates contribution requirements and actuarial present values of the System by applying assumptions to the benefit provisions and census data information furnished, using the valuation methods described on the previous page.

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

(i) Long-term rates of investment return to be generated by the assets of the System;
(ii) Patterns of pay increases to members;
(iii) Rates of mortality among members, retirants and beneficiaries;
(iv) Rates of withdrawal of active members;
(v) Rates of disability among members; and
(vi) The age patterns of actual retirement.

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

Actual experience will not coincide exactly with assumed experience, regardless of the wisdom 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 assumptions are established by the Board after consulting with the actuary. Updated assumptions were adopted for the December 31, 2020 valuation pursuant to the Experience Study dated July 27, 2020. All assumptions are based on future expectations, not market measures. The investment return assumption was updated for the December 31, 2021 valuation.

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.

Service at Beginning of Year	Salary Increase Assumptions For an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
1	17.00%	3.00%	20.00%
2	7.00	3.00	10.00
3	6.00	3.00	9.00
4	5.00	3.00	8.00
5	4.00	3.00	7.00
6 and over	1.00	3.00	4.00

These rates were first used for the December 31, 2020 valuation.

If the number of active members remains constant, then the total active member payroll will increase 3.0% annually, the base portion of the individual salary increase assumptions. This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities. Note that the 3.0% wage inflation assumption consists of 2.25% for price inflation and 0.75% for real wage growth.

The rate of investment return was 6.75% a year compounded yearly (net after 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. This assumption was first used for the December 31, 2021 valuation.

The assumed real return for funding purposes is the rate of return in excess of average salary increases.

The mortality tables

- **Healthy Pre-Retirement:** The Pub-2010 Amount-Weighted, Public Safety, Employee, Male and Female tables, with a base year of 2010 and future mortality improvements projected using scale MP-2019 on a fully generational basis.

- **Healthy Post-Retirement:** The Pub-2010 Amount-Weighted, Public Safety, Healthy Retiree, Male and Female tables, with a base year of 2010 and future mortality improvements projected using scale MP-2019 on a fully generational basis.

- **Disability Retirement:** The Pub-2010 Amount-Weighted, Public Safety, Disabled Retiree, Male and Female, with a base year of 2010 and future mortality improvements projected using scale MP-2019 on a fully generational basis.

The following sample rates are based on the Healthy Post-Retirement tables:

Sample Ages in 2023	Value at Retirement of $1 Monthly for Life		Future Life Expectancy (Years)*	
	Men	Women	Men	Women
50	$159.67	$162.06	35.85	37.85
55	151.57	154.62	30.77	32.73
60	141.27	145.38	25.87	27.82
65	128.78	134.12	21.24	23.15
70	113.91	120.41	16.92	18.73
75	96.75	104.25	12.97	14.63
80	78.19	86.44	9.52	11.00

* *Applicable to the year ended December 31, 2023. Life expectancy in future years is based on the MP-2019 projection scale.*

These rates were first used for the December 31, 2020 valuation.

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Retirement Ages	Percent	Retirement Ages	Percent
50	30%	60	50%
51	30%	61	60%
52	30%	62	70%
53	30%	63	80%
54	30%	64	90%
55	35%	65	100%
56	35%		
57	35%		
58	35%		
59	35%		

A Police member is eligible for retirement after both attaining age 50 and completing 10 or more years of service. Fire members are eligible after attaining age 55 with 10 or more years of service or at the age their service reaches the service credit limit. A 100% decrement pattern is applied to Firefighters once achieving 34 years of service regardless of age.

These rates were first used for the December 31, 2020 valuation.

Rates of separation from active membership were as follows:

(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 first used for the December 31, 2020 valuation.

Sample	% of Active Members Separating Within Next Year	
Ages	**Police**	**Fire**
25	3.45%	2.07%
30	2.85	1.71
35	1.95	1.17
40	1.35	0.81
45	1.05	0.63
50	0.90	0.54
55	0.90	0.54
60	0.90	0.54

The rates of disability were as follows:

Sample	% of Active Members Becoming Disabled Within Next Year	
Ages	**Police**	**Fire**
20	0.12%	0.12%
25	0.12	0.12
30	0.12	0.12
35	0.27	0.27
40	0.59	0.59
45	1.05	1.05
50	1.68	1.68
55	2.51	2.51

		Duty Related	Non-Duty Related
Cause of Disability:	Male	75%	25%
	Female	75%	25%

These rates were first used for the December 31, 2015 valuation.

Summary of Assumptions Used
December 31, 2023
Miscellaneous and Technical Assumptions

Marriage Assumption. 90% of males and 90% of females are assumed to be married for purposes of death-in-service benefits.

Pay Increase Timing. Beginning of (Fiscal) year. 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 service nearest whole year on the date the decrement is assumed to occur.

Benefit Service. Exact fractional service is used to determine the amount of benefit payable.

Decrement Relativity. Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Liability Adjustments. Retirement present values were increased by 19.2% for both police and fire, respectively, to account for the FAS Adjustment Factor.

13th Check. A 7.5% load was placed on affected liabilities for members eligible to participate in the 13th Check program.

Service Purchase. An $3.9 million liability was applied for the liability for service purchases.

Normal Form of Benefit. The assumed normal form of benefit is the straight life form.

Incidence of Contributions. Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

New Benefit Multiplier. Benefits for new hires will be modeled using the 2.8% benefit multiplier for all future years of service until such time that they elect another benefit multiplier.

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a "risk-free" rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75%; the municipal bond rate is 3.77%; and the resulting single discount rate is 6.75%.

The tables in this section provide background for the development of the single discount rate. Note that these projections are specifically used to determine the GASB SDR and should not be interpreted as a funding projection or recommendation.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development
Projection of Contributions

Year	Contributions from Current Employees	Normal Cost	Administrative Expense Contributions	UAL Contributions	Total Contributions
2024	$ 6,326,115	$ 6,867,580	$ -	$ 14,459,145	$ 27,652,839
2025	6,279,099	6,846,990	-	14,175,916	27,302,004
2026	6,198,587	6,789,798	-	12,885,302	25,873,687
2027	6,105,586	6,716,247	-	13,396,497	26,218,330
2028	5,972,923	6,601,664	-	13,628,255	26,202,842
2029	5,835,498	6,477,725	-	13,889,960	26,203,183
2030	5,732,992	6,381,120	-	14,203,926	26,318,038
2031	5,656,701	6,304,808	-	14,557,396	26,518,905
2032	5,578,110	6,211,981	-	14,989,277	26,779,368
2033	5,454,356	6,052,148	-	15,438,955	26,945,459
2034	5,323,536	5,878,445	-	15,902,124	27,104,106
2035	5,199,988	5,719,089	-	16,379,188	27,298,264
2036	5,057,020	5,525,380	-	16,870,563	27,452,964
2037	4,895,720	5,301,151	-	17,376,680	27,573,551
2038	4,711,330	5,057,169	-	17,897,981	27,666,480
2039	4,538,058	4,828,670	-	18,434,920	27,801,648
2040	4,351,089	4,585,533	-	18,987,968	27,924,590
2041	4,112,947	4,291,544	-	19,557,607	27,962,097
2042	3,833,054	3,952,102	-	20,144,335	27,929,490
2043	3,531,811	3,601,780	-	20,748,665	27,882,256
2044	3,162,552	3,198,249	-	21,371,125	27,731,926
2045	2,764,070	2,762,909	-	22,012,259	27,539,237
2046	2,430,690	2,389,993	-	9,304,327	14,125,010
2047	2,132,737	2,064,842	-	8,930,571	13,128,150
2048	1,842,929	1,763,177	-	8,490,104	12,096,210
2049	1,543,402	1,457,632	-	5,788,612	8,789,647
2050	1,239,949	1,154,776	-	4,570,791	6,965,516
2051	965,952	888,488	-	2,005,673	3,860,113
2052	748,247	679,308	-	235,478	1,663,033
2053	570,105	512,135	-	286,856	1,369,096
2054	421,824	374,733	-	-	796,557
2055	317,073	277,785	-	-	594,858
2056	234,423	202,047	-	-	436,471
2057	121,413	102,944	-	-	224,357
2058	39,277	32,652	-	-	71,928
2059	24,603	20,267	-	-	44,870
2060	14,808	12,083	-	-	26,890
2061	8,261	6,635	-	-	14,896
2062	4,257	3,327	-	-	7,584
2063	1,978	1,492	-	-	3,470
2064	776	569	-	-	1,345
2065	253	180	-	-	433
2066	64	37	-	-	101
2067	11	10	-	-	21
2068	1	-	-	-	1
2069	-	-	-	-	-
2070	-	-	-	-	-
2071	-	-	-	-	-
2072	-	-	-	-	-
2073	-	-	-	-	-

Single Discount Rate Development
Projection of Plan Fiduciary Net Position

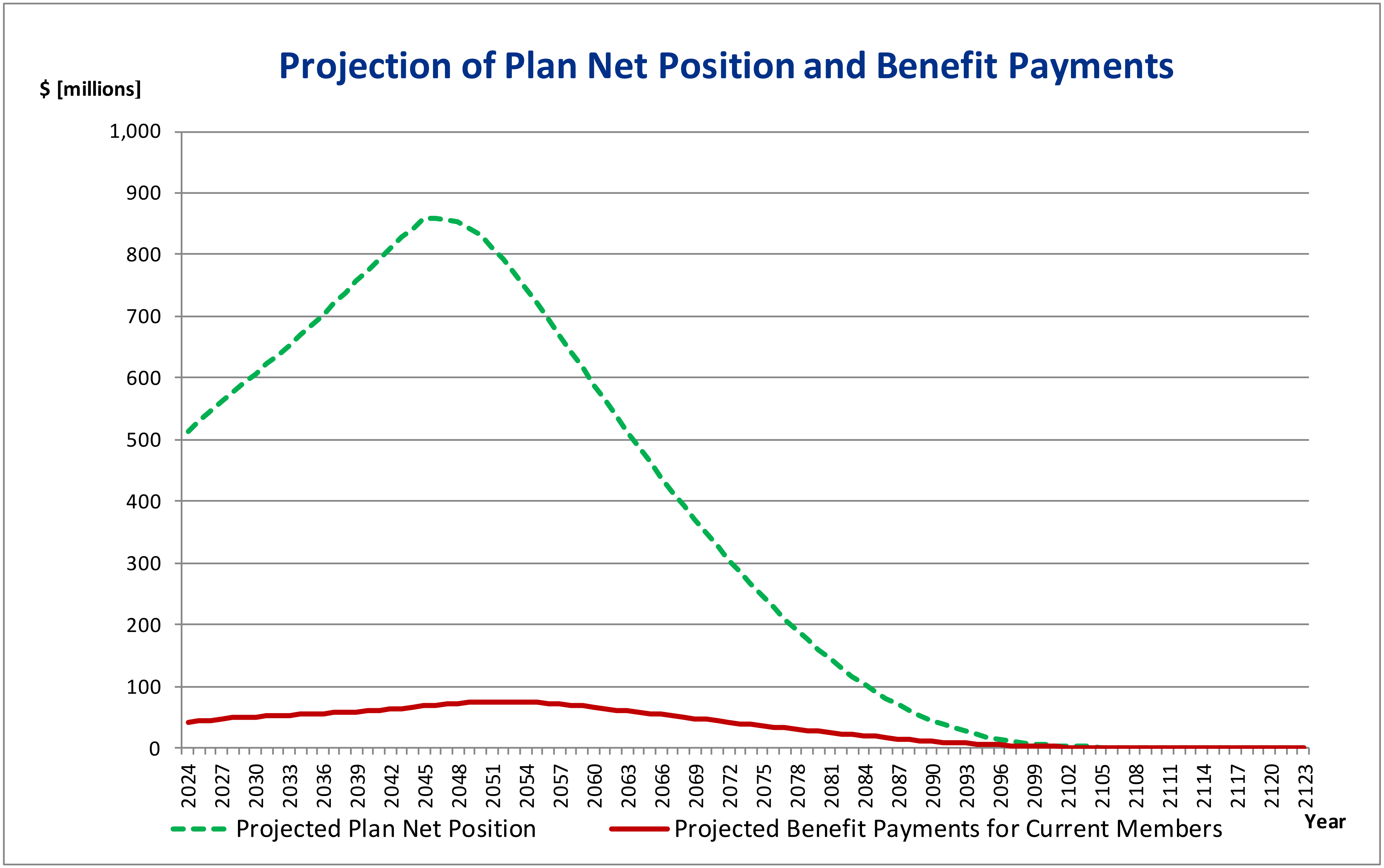
Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.75%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2024	$ 493,517,394	$ 27,652,839	$ 41,852,428	$ 641,573	$ 33,482,586	$ 512,158,818
2025	512,158,818	27,302,004	43,418,909	665,806	34,701,463	530,077,570
2026	530,077,570	25,873,687	44,884,718	689,101	35,838,191	546,215,630
2027	546,215,630	26,218,330	46,506,110	710,080	36,906,103	562,123,873
2028	562,123,873	26,202,842	48,403,949	730,761	37,937,070	577,129,074
2029	577,129,074	26,203,183	49,543,745	750,268	38,931,599	591,969,843
2030	591,969,843	26,318,038	50,576,734	769,561	39,922,163	606,863,749
2031	606,863,749	26,518,905	51,551,464	788,923	40,921,172	621,963,439
2032	621,963,439	26,779,368	52,429,680	808,552	41,939,522	637,444,097
2033	637,444,097	26,945,459	53,300,769	828,677	42,981,186	653,241,296
2034	653,241,296	27,104,106	53,919,721	849,214	44,052,752	669,629,219
2035	669,629,219	27,298,264	54,910,994	870,518	45,153,778	686,299,749
2036	686,299,749	27,452,964	55,766,605	892,190	46,277,441	703,371,359
2037	703,371,359	27,573,551	56,931,287	914,383	47,417,304	720,516,545
2038	720,516,545	27,666,480	57,683,367	936,672	48,575,010	738,137,997
2039	738,137,997	27,801,648	58,632,801	959,579	49,760,333	756,107,598
2040	756,107,598	27,924,590	59,707,432	982,940	50,965,047	774,306,863
2041	774,306,863	27,962,097	61,058,651	1,006,599	52,173,542	792,377,253
2042	792,377,253	27,929,490	62,453,558	1,030,090	53,369,393	810,192,489
2043	810,192,489	27,882,256	64,147,526	1,053,250	54,537,276	827,411,244
2044	827,411,244	27,731,926	66,386,939	1,075,635	55,642,589	843,323,186
2045	843,323,186	27,539,237	68,260,466	1,096,320	56,668,735	858,174,372
2046	858,174,372	14,125,010	69,639,665	1,115,627	57,199,370	858,743,460
2047	858,743,460	13,128,150	70,985,707	1,116,366	57,160,742	856,930,279
2048	856,930,279	12,096,210	72,176,860	1,114,009	56,962,191	852,697,810
2049	852,697,810	8,789,647	73,561,368	1,108,507	56,515,258	843,332,840
2050	843,332,840	6,965,516	74,515,101	1,096,333	55,778,726	830,465,650
2051	830,465,650	3,860,113	74,901,319	1,079,605	54,777,546	813,122,384
2052	813,122,384	1,663,033	75,106,310	1,057,059	53,504,583	792,126,631
2053	792,126,631	1,369,096	74,935,208	1,029,765	52,055,997	769,586,752
2054	769,586,752	796,557	74,387,765	1,000,463	50,504,420	745,499,502
2055	745,499,502	594,858	73,177,762	969,149	48,880,692	720,828,141
2056	720,828,141	436,471	72,138,684	937,077	47,212,540	695,401,391
2057	695,401,391	224,357	71,129,557	904,022	45,489,640	669,081,809
2058	669,081,809	71,928	69,282,175	869,806	43,735,123	642,736,880
2059	642,736,880	44,870	67,484,032	835,558	41,981,390	616,443,551
2060	616,443,551	26,890	65,637,140	801,377	40,233,127	590,265,052
2061	590,265,052	14,896	63,721,607	767,345	38,495,242	564,286,238
2062	564,286,238	7,584	61,757,830	733,572	36,772,852	538,575,273
2063	538,575,273	3,470	59,763,714	700,148	35,070,003	513,184,884
2064	513,184,884	1,345	57,741,787	667,140	33,390,200	488,167,501
2065	488,167,501	433	55,704,920	634,618	31,736,596	463,564,992
2066	463,564,992	101	53,660,761	602,634	30,111,796	439,413,493
2067	439,413,493	21	51,616,475	571,238	28,518,038	415,743,839
2068	415,743,839	1	49,579,029	540,467	26,957,206	392,581,550
2069	392,581,550	-	47,554,802	510,356	25,430,843	369,947,235
2070	369,947,235	-	45,549,427	480,931	23,940,178	347,857,055
2071	347,857,055	-	43,567,237	452,214	22,486,180	326,323,785
2072	326,323,785	-	41,611,026	424,221	21,069,635	305,358,173
2073	305,358,173	-	39,682,247	396,966	19,691,235	284,970,195

Single Discount Rate Development
Present Values of Projected Benefit Payments

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=(c)/(1+sdr)^(a-.5)
2024	$ 493,517,394	$ 41,852,428	$ 41,852,428	$ -	$ 40,507,619	$ -	$ 40,507,619
2025	512,158,818	43,418,909	43,418,909	-	39,366,525	-	39,366,525
2026	530,077,570	44,884,718	44,884,718	-	38,122,273	-	38,122,273
2027	546,215,630	46,506,110	46,506,110	-	37,001,764	-	37,001,764
2028	562,123,873	48,403,949	48,403,949	-	36,076,577	-	36,076,577
2029	577,129,074	49,543,745	49,543,745	-	34,591,188	-	34,591,188
2030	591,969,843	50,576,734	50,576,734	-	33,079,546	-	33,079,546
2031	606,863,749	51,551,464	51,551,464	-	31,585,072	-	31,585,072
2032	621,963,439	52,429,680	52,429,680	-	30,091,940	-	30,091,940
2033	637,444,097	53,300,769	53,300,769	-	28,657,518	-	28,657,518
2034	653,241,296	53,919,721	53,919,721	-	27,157,192	-	27,157,192
2035	669,629,219	54,910,994	54,910,994	-	25,907,687	-	25,907,687
2036	686,299,749	55,766,605	55,766,605	-	24,647,658	-	24,647,658
2037	703,371,359	56,931,287	56,931,287	-	23,571,356	-	23,571,356
2038	720,516,545	57,683,367	57,683,367	-	22,372,591	-	22,372,591
2039	738,137,997	58,632,801	58,632,801	-	21,302,886	-	21,302,886
2040	756,107,598	59,707,432	59,707,432	-	20,321,619	-	20,321,619
2041	774,306,863	61,058,651	61,058,651	-	19,467,458	-	19,467,458
2042	792,377,253	62,453,558	62,453,558	-	18,653,114	-	18,653,114
2043	810,192,489	64,147,526	64,147,526	-	17,947,592	-	17,947,592
2044	827,411,244	66,386,939	66,386,939	-	17,399,671	-	17,399,671
2045	843,323,186	68,260,466	68,260,466	-	16,759,449	-	16,759,449
2046	858,174,372	69,639,665	69,639,665	-	16,016,931	-	16,016,931
2047	858,743,460	70,985,707	70,985,707	-	15,294,161	-	15,294,161
2048	856,930,279	72,176,860	72,176,860	-	14,567,494	-	14,567,494
2049	852,697,810	73,561,368	73,561,368	-	13,908,131	-	13,908,131
2050	843,332,840	74,515,101	74,515,101	-	13,197,613	-	13,197,613
2051	830,465,650	74,901,319	74,901,319	-	12,427,182	-	12,427,182
2052	813,122,384	75,106,310	75,106,310	-	11,673,249	-	11,673,249
2053	792,126,631	74,935,208	74,935,208	-	10,910,216	-	10,910,216
2054	769,586,752	74,387,765	74,387,765	-	10,145,678	-	10,145,678
2055	745,499,502	73,177,762	73,177,762	-	9,349,552	-	9,349,552
2056	720,828,141	72,138,684	72,138,684	-	8,633,999	-	8,633,999
2057	695,401,391	71,129,557	71,129,557	-	7,974,914	-	7,974,914
2058	669,081,809	69,282,175	69,282,175	-	7,276,617	-	7,276,617
2059	642,736,880	67,484,032	67,484,032	-	6,639,588	-	6,639,588
2060	616,443,551	65,637,140	65,637,140	-	6,049,534	-	6,049,534
2061	590,265,052	63,721,607	63,721,607	-	5,501,626	-	5,501,626
2062	564,286,238	61,757,830	61,757,830	-	4,994,920	-	4,994,920
2063	538,575,273	59,763,714	59,763,714	-	4,527,997	-	4,527,997
2064	513,184,884	57,741,787	57,741,787	-	4,098,179	-	4,098,179
2065	488,167,501	55,704,920	55,704,920	-	3,703,620	-	3,703,620
2066	463,564,992	53,660,761	53,660,761	-	3,342,118	-	3,342,118
2067	439,413,493	51,616,475	51,616,475	-	3,011,518	-	3,011,518
2068	415,743,839	49,579,029	49,579,029	-	2,709,737	-	2,709,737
2069	392,581,550	47,554,802	47,554,802	-	2,434,757	-	2,434,757
2070	369,947,235	45,549,427	45,549,427	-	2,184,622	-	2,184,622
2071	347,857,055	43,567,237	43,567,237	-	1,957,427	-	1,957,427
2072	326,323,785	41,611,026	41,611,026	-	1,751,322	-	1,751,322
2073	305,358,173	39,682,247	39,682,247	-	1,564,538	-	1,564,538

Single Discount Rate Development
Present Values of Projected Benefit Payments
(Concluded)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^((a)-.5)	(g)=(e)*vf ^((a)-.5)	(h)=(c)/(1+sdr)^(a-.5)
2074	$ 284,970,195	$ 37,780,972	$ 37,780,972	$ -	$ 1,395,388	$ -	$ 1,395,388
2075	265,170,424	35,905,980	35,905,980	-	1,242,284	-	1,242,284
2076	245,971,409	34,055,092	34,055,092	-	1,103,744	-	1,103,744
2077	227,388,794	32,225,549	32,225,549	-	978,405	-	978,405
2078	209,442,136	30,414,813	30,414,813	-	865,039	-	865,039
2079	192,154,928	28,621,306	28,621,306	-	762,556	-	762,556
2080	175,553,883	26,844,603	26,844,603	-	669,995	-	669,995
2081	159,667,955	25,085,857	25,085,857	-	586,510	-	586,510
2082	144,526,862	23,348,353	23,348,353	-	511,370	-	511,370
2083	130,158,931	21,637,039	21,637,039	-	443,924	-	443,924
2084	116,589,294	19,957,721	19,957,721	-	383,578	-	383,578
2085	103,838,776	18,316,684	18,316,684	-	329,778	-	329,778
2086	91,923,115	16,719,989	16,719,989	-	281,996	-	281,996
2087	80,852,850	15,173,424	15,173,424	-	239,730	-	239,730
2088	70,633,253	13,683,327	13,683,327	-	202,518	-	202,518
2089	61,263,398	12,256,672	12,256,672	-	169,932	-	169,932
2090	52,735,098	10,900,121	10,900,121	-	141,569	-	141,569
2091	45,032,724	9,619,786	9,619,786	-	117,040	-	117,040
2092	38,133,280	8,421,389	8,421,389	-	95,981	-	95,981
2093	32,006,306	7,309,888	7,309,888	-	78,045	-	78,045
2094	26,614,163	6,288,885	6,288,885	-	62,898	-	62,898
2095	21,912,950	5,360,235	5,360,235	-	50,220	-	50,220
2096	17,853,885	4,523,841	4,523,841	-	39,704	-	39,704
2097	14,384,994	3,777,952	3,777,952	-	31,061	-	31,061
2098	11,452,605	3,119,858	3,119,858	-	24,029	-	24,029
2099	9,002,222	2,545,634	2,545,634	-	18,366	-	18,366
2100	6,979,726	2,050,171	2,050,171	-	13,856	-	13,856
2101	5,332,624	1,627,971	1,627,971	-	10,307	-	10,307
2102	4,010,558	1,273,189	1,273,189	-	7,551	-	7,551
2103	2,965,814	979,477	979,477	-	5,442	-	5,442
2104	2,154,012	740,246	740,246	-	3,853	-	3,853
2105	1,534,587	548,866	548,866	-	2,676	-	2,676
2106	1,071,083	398,710	398,710	-	1,821	-	1,821
2107	731,435	283,324	283,324	-	1,212	-	1,212
2108	488,077	196,658	196,658	-	788	-	788
2109	317,836	133,142	133,142	-	500	-	500
2110	201,727	87,777	87,777	-	309	-	309
2111	124,653	56,271	56,271	-	185	-	185
2112	74,928	35,046	35,046	-	108	-	108
2113	43,776	21,181	21,181	-	61	-	61
2114	24,847	12,404	12,404	-	34	-	34
2115	13,708	7,048	7,048	-	18	-	18
2116	7,351	3,896	3,896	-	9	-	9
2117	3,822	2,091	2,091	-	5	-	5
2118	1,920	1,085	1,085	-	2	-	2
2119	928	547	547	-	1	-	1
2120	425	265	265	-	0	-	0
2121	180	117	117	-	-	-	-
2122	71	51	51	-	-	-	-
2123	23	18	18	-	-	-	-
				Totals	**$ 821,309,930**	**$ -**	**$ 821,309,930**


Projection of Plan Net Position and Benefit Payments
$ [millions]
1,000
900
800
700
600
500
400
300
200
100
0
2024
2027
2030
2033
2036
2039
2042
2045
2048
2051
2054
2057
2060
2063
2066
2069
2072
2075
2078
2081
2084
2087
2090
2093
2096
2099
2102
2105
2108
2111
2114
2117
2120
2123
Year
Projected Plan Net Position
Projected Benefit Payments for Current Members

SECTION H

MICHIGAN PUBLIC ACT 202

State Reporting Assumptions
as of June 30, 2024

The Protecting Local Government Retirement and Benefits Act, Public Act 202 of 2017 (PA 202), was put into law effective December 20, 2017. One outcome of the law is the requirement for the local unit of government to provide select reporting disclosures to the State. Section 5(1) of the Act provides the State treasurer with the authority to annually establish uniform actuarial assumptions for purposes of developing the requisite disclosures. Below you will find information which may be used to assist the local unit of government with required reporting.

Uniform Assumptions, as applicable to the measurement and the required disclosures under uniform assumptions, are denoted below. Additional discussion of the PA 202 and uniform assumptions may be found on the State website in the uniform assumption memo dated February 13, 2024.

Uniform Assumption	PA 202	Valuation Assumption Used	Uniform Assumption Used
Investment Rate of Return Discount Rate	Maximum of 6.90%^	6.75%	6.75%
Salary Increase	Minimum of 3.25% or based on experience study within last 5 years	3.0% + Merit and longevity (based on experience study dated July 27, 2020)	3.0% + Merit and longevity (based on experience study dated July 27, 2020)
Mortality	Version of Pub-2010 or based on experience study within last 5 years	Pub-2010 Mortality Tables	Pub-2010 Mortality Tables
Amortization of the Unfunded Accrued Actuarial Liability: Period	Maximum Period of 15 Years	22-30 years	**15 years**
Method	Closed Plans: Level Dollar Open Plans: Level Percent of Payroll or Level Dollar	Level Percent of Payroll	Level Percent of Payroll
Type	Closed	Closed	Closed

^ *A blended rate calculated using GASB Statement No. 68 methodology. For periods in which projected plan assets are sufficient to make projected benefit payments – maximum of 6.90%; for periods in which projected plan assets are NOT sufficient to make projected benefit payments – maximum of 3.65%.*

State Reporting
as of June 30, 2024

The following information has been prepared to provide some of the information necessary to complete the pension reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form 5572). Additional resources are available on the State website.

Line	Descriptive Information	
23	Uniform Assumptions[1]	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	$514,450,587
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions	$684,582,165
26	Funded ratio using uniform assumptions	Auto[2]
27	Actuarially Determined Contribution (ADC) using uniform assumptions[3]	$ 23,105,120
28	All systems combined ADC/Governmental fund revenues	Auto[2]

[1] *Information on lines 24-28 is based on assumptions listed on the prior page as of the most recent valuation date, December 31, 2023, after reflecting uniform assumptions.*

[2] *Automatically calculated by State of Michigan Form 5572.*

[3] *For the fiscal year ending June 30, 2024.*

Section I

Glossary of Terms

Glossary of Terms

Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Accrued Liability (AAL)	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding, which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
Actuarial Assumptions	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption 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 the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the “actuarial funding method.”
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
Actuarial Gain (Loss)	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
Actuarial Present Value (APV)	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
Actuarial Valuation	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
Deferred Retirement Option Program (DROP)	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
Deferred Inflows and Outflows	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Discount Rate	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: 1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)	The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
Fiduciary Net Position	The fiduciary net position is the value of the assets of the trust.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contribution Entities	Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan, members are not considered non-employer contribution entities.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

Glossary of Terms

Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total Pension Expense	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: 1. Service Cost 2. Interest on the Total Pension Liability 3. Current-Period Benefit Changes 4. Employee Contributions (made negative for addition here) 5. Projected Earnings on Plan Investments (made negative for addition here) 6. Pension Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to Liabilities 9. Recognition of Outflow (Inflow) of Resources due to Assets
Total Pension Liability (TPL)	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
Unfunded Actuarial Accrued Liability (UAAL)	The UAAL is the difference between actuarial accrued liability and valuation assets.
Valuation Assets	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets.