

City of Grand Rapids General Retirement System

GASB Statement Nos. 67 and 68 Accounting and
Financial Reporting for Pensions
June 30, 2020





October 9, 2020

Ms. Molly Clarin, CFO
Board of Trustees
City of Grand Rapids General
Retirement System
Grand Rapids, Michigan

Dear Ms. Clarin:

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 General Retirement 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 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.

Ms. Molly Clarin
City of Grand Rapids General
Retirement System
October 9, 2020
Page 2

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 June 30, 2020 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. 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 General 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.

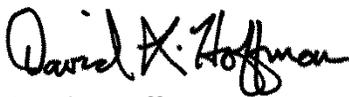
The signing individuals are independent of the plan sponsor.

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.

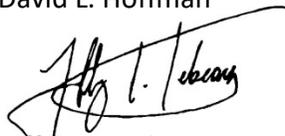
Respectfully submitted,



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



David L. Hoffman



Jeffrey T. Tebeau, FSA, EA, MAAA

JDA/DLH/JTT:sc

C0547



Table of Contents

Page

Section A Executive Summary

Executive Summary	1
Discussion	2-5

Section B Financial Statements

Statement of Pension Expense Under GASB Statement No. 68.....	6
Statement of Outflows and Inflows Arising from the Current Reporting Period.....	7
Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods	8
Recognition of Deferred Outflows and Inflows of Resources	9
Statement of Fiduciary Net Position.....	10
Statement of Changes in Fiduciary Net Position	11

Section C Required Supplementary Information

Schedule of Changes in the Net Pension Liability and Related Ratios Current Reporting Period	12
Schedule of Changes in the Employer's Net Pension Liability and Related Ratios	13
Schedule of the Employer's Net Pension Liability	14
Schedule of Contributions	15
Notes to Schedule of Contributions	16

Section D Notes to Financial Statements

Long-Term Expected Return on Plan Assets.....	17
Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption	18
Summary of Population Statistics.....	19

Section E Summary of Benefits.....20-31

Section F Actuarial Cost Method and Actuarial Assumptions

Valuation Methods, Entry Age Normal.....	32
Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions, and Experience Studies	33
Miscellaneous and Technical Assumptions	38

Section G Calculation of the Single Discount Rate

Calculation of the Single Discount Rate.....	39
Projection of Contributions	40
Projection of Plan Fiduciary Net Position	41
Present Values of Projected Benefit Payments.....	42
Projection of Plan Net Position and Benefit Payments	44

Section H Michigan Public Act 202..... 45

Section I Glossary of Terms.....47



SECTION A

EXECUTIVE SUMMARY

Executive Summary

Actuarial Valuation Date	June 30, 2020
Measurement Date of the Net Pension Liability	June 30, 2020
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2021

Membership

Number of	
- Retirees and Beneficiaries	1,189
- Inactive, Nonretired Members	106
- Active Members	418
- Total	1,713
Covered Payroll ⁽¹⁾	\$ 28,873,053

Net Pension Liability

Total Pension Liability	\$ 557,599,165
Plan Fiduciary Net Position	403,408,591
Net Pension Liability	\$ 154,190,574
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	72.35%
Net Pension Liability as a Percentage of Covered Payroll	534.03%

Development of the Single Discount Rate

Single Discount Rate	7.00%
Long-Term Expected Rate of Investment Return	7.00%
Long-Term Municipal Bond Rate ⁽²⁾	2.45%
Year when the Plan Fiduciary Net Position is projected to no longer be sufficient to make Projected Benefit Payments	N/A

Total Pension Expense	\$ 29,084,892
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Deferred Outflows of Resources and Deferred Inflows of Resources

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ -	\$ 847,881
Changes in assumptions	7,321,501	-
Net difference between projected and actual earnings on pension plan investments	23,137,066	2,257,519
Total	\$ 30,458,567	\$ 3,105,400

⁽¹⁾ The amount provided represents the annual pays for members active on the valuation date and does not necessarily represent Covered Payroll as defined in GASB Statements No. 67 and 68.

⁽²⁾ 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 June 26, 2020. 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 June 30, 2020.

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 7.00% 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 30 years, which is the number of years remaining in the closed amortization schedule of the unfunded liability.
3. The funded status of the plan is expected to reach a 100% funded ratio in 30 years, which is the number of years remaining in the closed amortization schedule of the unfunded liability.

This funding policy results in the expectation that the plan's assets will be able to fully pay for promised benefits through at least 2120. 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 June 30, 2020 and a measurement date of June 30, 2020.

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 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 7.00%; the municipal bond rate is 2.45% (based on the weekly rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 7.00%.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense Under GASB Statement No. 68
Measurement Date – June 30, 2020
Reporting Date – June 30, 2021

A. Expense

1. Service Cost	\$ 4,576,153
2. Interest on the Total Pension Liability	36,699,090
3. Current Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(2,595,588)
5. Projected Earnings on Plan Investments (made negative for addition here)	(28,599,507)
6. Pension Plan Administrative Expense	605,388
7. Other Changes in Plan Fiduciary Net Position	54,466
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	8,597,092
9. Recognition of Outflow (Inflow) of Resources due to Assets	9,747,798
10. Total Pension Expense	\$ 29,084,892

Statement of Outflows and Inflows Arising from the Current Reporting Period Measurement Date – June 30, 2020 Reporting Date – June 30, 2021

A. Outflows (Inflows) of Resources Due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (945,207)
2. Assumption Changes (gains) or losses	\$ 12,565,643
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	2.0
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	\$ (472,604)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ 6,282,822
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ 5,810,218</u>
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	\$ (472,604)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ 6,282,822
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ 5,810,218</u>

B. Outflows (Inflows) of Resources Due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 23,104,645
2. Recognition period for Assets {in years}	5.0
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 4,620,929
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 18,483,716



Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods Measurement Date – June 30, 2020 Reporting Date – June 30, 2021

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	\$ 10,787,816	\$ 2,190,724	\$ 8,597,092
2. Due to Assets	11,947,318	2,199,520	9,747,798
3. Total	\$ 22,735,134	\$ 4,390,244	\$ 18,344,890

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	\$ -	\$ 2,190,724	\$ (2,190,724)
2. Assumption Changes	10,787,816	-	10,787,816
3. Net Difference between projected and actual earnings on pension plan investments	11,947,318	2,199,520	9,747,798
4. Total	\$ 22,735,134	\$ 4,390,244	\$ 18,344,890

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	\$ -	\$ 847,881	\$ (847,881)
2. Assumption Changes	7,321,501	-	7,321,501
3. Net Difference between projected and actual earnings on pension plan investments	23,137,066	2,257,519	20,879,547
4. Total	\$ 30,458,567	\$ 3,105,400	\$ 27,353,167

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
2022	\$ 10,446,144
2023	6,114,047
2024	6,172,047
2025	4,620,929
2026	-
Thereafter	-
Total	\$ 27,353,167

Recognition of Deferred Outflows and Inflows of Resources

Measurement Date – June 30, 2020

Reporting Date – June 30, 2021

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					
2017	\$ (971,718)	2.8	\$ 0	\$ 0	0.0
2018	(2,335,969)	2.5	(467,193)	0	0.0
2019	(2,877,132)	2.3	(1,250,927)	(375,278)	0.3
2020	(945,207)	2.0	(472,604)	(472,603)	1.0
Total			\$ (2,190,724)	\$ (847,881)	
Deferred Outflow (Inflow) Due to Assumption Changes					
2017	\$ (1,495,183)	2.8	\$ 0	\$ 0	0.0
2018	5,213,623	2.5	1,042,725	0	0.0
2019	7,963,218	2.3	3,462,269	1,038,680	0.3
2020	12,565,643	2.0	6,282,822	6,282,821	1.0
Total			\$ 10,787,816	\$ 7,321,501	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2016	\$ 28,876,365	5.0	\$ 5,775,273	\$ 0	0.0
2017	(10,707,601)	5.0	(2,141,520)	(2,141,521)	1.0
2018	(289,998)	5.0	(58,000)	(115,998)	2.0
2019	7,755,582	5.0	1,551,116	4,653,350	3.0
2020	23,104,645	5.0	4,620,929	18,483,716	4.0
Total			\$ 9,747,798	\$ 20,879,547	

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 measurement period, the expected remaining service lives of all contributing members was 3,478 years. Additionally, the combined plan membership (active employees and inactive employees) was 1,713. 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 measurement period is 2.0 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 June 30, 2020

Assets

Cash and Deposits	\$	5,321,810
Receivables		
Accounts Receivable - Sale of Investments	\$	2,118,777
Accrued Interest and Other Dividends		416,102
Contributions		1,113,018
Accounts Receivable - Other		-
Total Receivables	<u>\$</u>	<u>3,647,897</u>
Investments		
Fixed Income	\$	124,263,778
Equities		195,681,564
Real Estate		18,575,394
Other - Private Equity and Commodities		57,497,788
Total Investments	<u>\$</u>	<u>396,018,524</u>
Total Assets	<u>\$</u>	<u>404,988,231</u>

Liabilities

Payables		
Accounts Payable - Purchase of Investments	\$	1,202,735
Accrued Expenses		151,705
Accounts Payable - Other		225,200
Total Liabilities	<u>\$</u>	<u>1,579,640</u>

Net Position Restricted for Pensions	<u>\$</u>	<u>403,408,591</u>
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Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2020

Additions

Contributions		
Employer	\$	11,325,243
Member		2,595,588
Other		-
Total Contributions	\$	<u>13,920,831</u>
Investment Income		
Net Appreciation in Fair Value of Investments	\$	1,608,395
Interest and Dividends		4,831,199
Less Investment Expense		<u>(944,732)</u>
Net Investment Income	\$	<u>5,494,862</u>
Other	\$	<u>-</u>
Total Additions	\$	<u>19,415,693</u>

Deductions

Benefit Payments and Refunds	\$	34,562,300
Pension Plan Administrative Expense		605,388
Other		<u>54,466</u>
Total Deductions	\$	<u>35,222,154</u>
Net Increase in Net Position	\$	(15,806,461)

Net Position Restricted for Pensions

Beginning of Year	\$	<u>419,215,052</u>
End of Year	\$	<u><u>403,408,591</u></u>

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability and Related Ratios

Measurement Date – June 30, 2020

A. Total Pension Liability

1. Service Cost	\$	4,576,153
2. Interest on the Total Pension Liability		36,699,090
3. Changes of benefit terms		0
4. Differences between expected and actual experience of the Total Pension Liability		(945,207)
5. Changes of assumptions		12,565,643
6. Benefit payments, including refunds of employee contributions		(34,562,300)
7. Net change in Total Pension Liability	\$	18,333,379
8. Total Pension Liability – Beginning		539,265,786
9. Total Pension Liability – Ending	\$	<u><u>557,599,165</u></u>

B. Plan Fiduciary Net Position

1. Contributions – employer	\$	11,325,243
2. Contributions – employee		2,595,588
3. Net investment income		5,494,862
4. Benefit payments, including refunds of employee contributions		(34,562,300)
5. Pension Plan Administrative Expense		(605,388)
6. Other		(54,466)
7. Net change in Plan Fiduciary Net Position	\$	(15,806,461)
8. Plan Fiduciary Net Position – Beginning		419,215,052
9. Plan Fiduciary Net Position – Ending	\$	<u><u>403,408,591</u></u>

C. Net Pension Liability

\$ 154,190,574

D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability

72.35%

E. Covered-employee payroll*

\$ 28,873,053

F. Net Pension Liability as a percentage of covered employee payroll

534.03%

* The amount provided represents the annual pays for members active on the valuation date and does not necessarily represent Covered Payroll as defined in GASB Statements No. 67 and No. 68.

Schedules of Required Supplementary Information

Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Measurement Date - June 30,	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Total Pension Liability										
Service Cost	\$ 4,576,153	\$ 4,657,970	\$ 5,016,826	\$ 5,161,510	\$ 5,546,388	\$ 6,348,067	\$ 6,904,650	\$ 7,294,537		
Interest on the Total Pension Liability	36,699,090	36,626,148	36,420,065	36,025,286	35,127,721	33,287,484	33,394,709	32,920,147		
Benefit Changes	-	-	-	-	-	20,882	-	-		
Difference between Expected and Actual Experience of the Total Pension Liability	(945,207)	(2,877,132)	(2,335,969)	(971,718)	6,361,929	10,083,648	(7,420,169)	(6,012,166)		
Assumption Changes	12,565,643	7,963,218	5,213,623	(1,495,183)	-	29,733,502	-	-		
Benefit Payments	(34,422,912)	(34,016,875)	(34,286,124)	(31,894,361)	(36,708,883)	(39,570,343)	(28,055,439)	(27,037,516)		
Refunds	(139,388)	(41,616)	(109,451)	(114,697)	(208,843)	(283,087)	(152,273)	(114,916)		
Net Change in Total Pension Liability	18,333,379	12,311,713	9,918,970	6,710,837	10,118,312	39,620,153	4,671,478	7,050,086		
Total Pension Liability - Beginning	539,265,786	526,954,073	517,035,103	510,324,266	500,205,954	460,585,801	455,914,323	448,864,237		
Total Pension Liability - Ending (a)	\$ 557,599,165	\$ 539,265,786	\$ 526,954,073	\$ 517,035,103	\$ 510,324,266	\$ 500,205,954	\$ 460,585,801	\$ 455,914,323		
Plan Fiduciary Net Position										
Contributions - Employer	\$ 11,325,243	\$ 12,920,265	\$ 10,673,034	\$ 10,237,538	\$ 9,295,104	\$ 11,327,704	\$ 8,771,032	\$ 8,135,843		
Contributions - Member	2,595,588	2,677,960	2,832,479	3,012,472	3,428,169	3,473,382	3,737,014	3,933,341		
Pension Plan Net Investment Income	5,494,862	21,371,497	29,177,311	38,296,115	289,104	11,478,680	65,337,996	44,058,818		
Benefit Payments	(34,422,912)	(34,016,875)	(34,286,124)	(31,894,361)	(36,708,883)	(39,570,343)	(28,055,439)	(27,037,516)		
Refunds	(139,388)	(41,616)	(109,451)	(114,697)	(208,843)	(283,087)	(152,273)	(114,916)		
Pension Plan Administrative Expense	(605,388)	(596,090)	(556,142)	(558,024)	(568,895)	(567,869)	(523,086)	(476,059)		
Other	(54,466)	-	-	-	-	-	(21,741)	(15,873)		
Net Change in Plan Fiduciary Net Position	(15,806,461)	2,315,141	7,731,107	18,979,043	(24,474,244)	(14,141,533)	49,093,503	28,483,638		
Plan Fiduciary Net Position - Beginning	419,215,052	416,899,911	409,168,804	390,189,761	414,664,005	428,805,538	379,712,035	351,228,397		
Plan Fiduciary Net Position - Ending (b)	\$ 403,408,591	\$ 419,215,052	\$ 416,899,911	\$ 409,168,804	\$ 390,189,761	\$ 414,664,005	\$ 428,805,538	\$ 379,712,035		
Net Pension Liability - Ending (a) - (b)	\$ 154,190,574	\$ 120,050,734	\$ 110,054,162	\$ 107,866,299	\$ 120,134,505	\$ 85,541,949	31,780,263	76,202,288		
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	72.35 %	77.74 %	79.12 %	79.14 %	76.46 %	82.90 %	93.10 %	83.29 %		
Covered Payroll #	\$ 28,873,053	\$ 29,695,997	\$ 30,949,968	\$ 33,647,390	\$ 35,760,078	\$ 38,492,586	\$ 40,510,955	\$ 43,783,450		
Net Pension Liability as a Percentage of Covered-Employee Payroll	534.03 %	404.27 %	355.59 %	320.58 %	335.95 %	222.23 %	78.45 %	174.04 %		

Notes to Schedule:

N/A

The amount provided represents the annual pays for members active on the valuation date and does not necessarily represent Covered Payroll as defined in GASB Statements No. 67 and No. 68.



Schedules of Required Supplementary Information

Schedule of the Employers' Net Pension Liability

FY Ending June 30,	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
2013	\$ 455,914,323	\$ 379,712,035	\$ 76,202,288	83.29%	\$ 43,783,450	174.04%
2014	460,585,801	428,805,538	31,780,263	93.10%	40,510,955	78.45%
2015	500,205,954	414,664,005	85,541,949	82.90%	38,492,586	222.23%
2016	510,324,266	390,189,761	120,134,505	76.46%	35,760,078	335.95%
2017	517,035,103	409,168,804	107,866,299	79.14%	33,647,390	320.58%
2018	526,954,073	416,899,911	110,054,162	79.12%	30,949,968	355.59%
2019	539,265,786	419,215,052	120,050,734	77.74%	29,695,997	404.27%
2020	557,599,165	403,408,591	154,190,574	72.35%	28,873,053	534.03%

[#] The amount provided represents the annual pays for members active on the valuation date and does not necessarily represent Covered Payroll as defined in GASB Statements No. 67 and No. 68.

Schedule of Contributions

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution*	Contribution Deficiency (Excess)	Covered Payroll [#]	Actual Contribution as a % of Covered Payroll
2013	\$ 8,135,843	\$ 8,135,843	\$ -	\$ 43,783,450	18.58%
2014	8,771,032	8,771,032	-	40,510,955	21.65%
2015	11,327,704	11,327,704	-	38,492,586	29.43%
2016	9,295,104	9,295,104	-	35,760,078	25.99%
2017	10,237,538	10,237,538	-	33,647,390	30.43%
2018	10,673,034	10,673,034	-	30,949,968	34.48%
2019	9,920,265	12,920,265	(3,000,000)	29,695,997	43.51%
2020	10,325,243	11,325,243	(1,000,000)	28,873,053	39.22%

* 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 show in the actuarial valuation report, the annual required contribution shown in the Schedule of Employer Contributions are the actual contributions made by the City in the fiscal year, except in fiscal years 2019 and 2020 when the City made additional contributions of \$3M and \$1M, respectively.

The amount provided represents the annual pays for members active on the valuation date and does not necessarily represent Covered Payroll as defined in GASB Statements No. 67 and No. 68.

Notes to Schedule of Contributions

Valuation Date: June 30, 2020
Notes Actuarially determined contribution rates are calculated as of June 30, which is 1 year 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, 2019:

Actuarial Cost Method	Individual Entry Age Normal
Amortization Method	Level Dollar, Closed
Remaining Amortization Period	27 - 30 years
Asset Valuation Method	5-Year Smoothed Market
Inflation	2.50% -- approximate; No explicit price inflation assumption is used in this valuation.
Salary Increases	3.25% to 7.70% including inflation
Investment Rate of Return	7.15%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2015 valuation pursuant to an experience study of the period 2010-2014.
Mortality	RP-2014 Healthy Annuitant Mortality Table projected to 2019 using MP-2014 mortality improvement scale.

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 2020, 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%	5.75%	6.90%	7.28%
Non-U.S. Equity	17.75%	6.50%	7.38%	7.67%
Private Equity	5.00%	7.95%	9.43%	9.92%
Global Low Volatility Equity	10.00%	6.14%	7.19%	7.54%
Private Credit	5.00%	6.65%	7.21%	7.39%
Core Fixed Income	24.50%	2.85%	4.08%	4.48%
Global REITs	5.00%	5.00%	6.13%	6.50%
U.S. TIPS	5.00%	2.15%	3.73%	4.25%
MLPs	5.00%	7.70%	8.25%	8.43%
Commodities	5.00%	3.60%	4.68%	5.03%
Total	100.00%	5.67%	6.75%	7.11%
<i>Inflation</i>		<i>1.75%</i>	<i>2.13%</i>	<i>2.25%</i>

*All return assumptions are geometric.

For more information about the analysis of the investment return assumption, please see our experience study dated May 5, 2020.

Single Discount Rate

A Single Discount Rate of 7.00% 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 7.00%. 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.

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 7.00%, 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:

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

	1% Decrease 6.00%	Current Single Discount Rate Assumption 7.00%	1% Increase 8.00%
Total Pension Liability	\$ 619,236,474	\$ 557,599,165	\$ 505,612,696
Plan Net Position	403,408,591	403,408,591	403,408,591
Net Pension Liability	\$ 215,827,883	\$ 154,190,574	\$ 102,204,105

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	1,189
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	106
Active Plan Members	<u>418</u>
Total Plan Members	1,713

SECTION E

SUMMARY OF BENEFITS

Summary of Benefit Provisions Evaluated (June 30, 2020)

Voluntary Retirement. A member may retire after 30 years of service regardless of age, or after attaining age 62 and completing 8 years of service. Effective January 1, 2001, members covered by the Emergency Communications Operators Bargaining Unit, may retire after attaining age 55 and completing 8 years of service.

Final Average Salary (FAS). The average of member's highest annual salary rates, all before completion of the calendar year in which the member attains 40 years of service or reaches the benefit cap, during the three calendar years of credited service when such salary rates were the highest.

Members of the Crime Scene Technicians group have an additional sum added to their FAS, effective July 1, 2000. The sum is calculated based on an average of the group's additional compensation items during the previous three calendar years and the average of the group's valuation payroll as of June 30 for the five-year period immediately preceding the valuation.

Emergency Communication Operators I, II, and III also have an additional sum added to their FAS, effective July 1, 2005. The sum is calculated based on an average of the group's additional compensation items during the previous five calendar years and the average of the group's valuation payroll as of June 30 for the five-year period immediately preceding the valuation.

Members who retire with 10 or more years of continuous service may use up to two thousand eighty (2,080) hours (1,265 for Crime Scene Technician members) of accumulated sick leave to purchase up to one (1) year of additional credited service, on a pro rata basis.

Full Age and Service Allowance. The members' benefit multipliers, used to compute full age and service allowance, are shown in the tables on the following page.

In lieu of this single life-level amount form of payment, a retiring member may elect from several optional forms of payment, each of which is the actuarial equivalent of this single life-level payment form.

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Covered Employee Group	Date of Termination	Benefit Multiplier	Allowance Cap [apply as indicated and remain in effect for subsequent termination dates unless otherwise amended]
ECO's I, II and III	January 1, 2002 to March 31, 2012	2.7%	100% applicable to ECO's I, II and III hired on or before May 6, 2002 90% applicable to ECO's I, II, and III hired from May 7, 2002 to January 23, 2012
ECO's I, II and III	April 1, 2012	2.7%, 2.5%, 2.2%, 2.0% or 1.8% for future service from and after April 1, 2012 depending on the individual election made by the employee as provided in Section 1.229(10) Bargaining unit members hired on or after January 24, 2012 do not participate in the Retirement System	
GRPOA-Crime Scene Tech/Latent Print Examiners	July 1, 2002 to July 7, 2012	2.7%	100% applicable to CST's hired prior to January 1, 2002 90% applicable to CST's hired from January 1, 2002 to November 14, 2011
GRPOA-Crime Scene Tech/Latent Print Examiners	July 8, 2012	2.7% or 2.5% or 2.2% or 2.0% or 1.8% for future service from and after July 8, 2012, depending on the individual election made by the employee as provided in Section 1.229(9) Bargaining unit members hired on or after November 15, 2011 do not participate in the Retirement System	100% applicable to CST's hired prior to January 1, 2002 90% applicable to CST's hired from January 1, 2002 to November 14, 2011
APAGR	January 1, 2003 to December 31, 2004	2.6%	97.5% for employees hired prior to January 1, 2005
APAGR	January 1, 2005 to June 11, 2011	2.7%	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired from January 1, 2005 to June 30, 2014
APAGR	June 12, 2011	2.7% or 2.5% or 2.2% for future service from and after June 12, 2011, depending on the individual election made by the employee as provided in Section 1.229(3) 2.0% for members hired or re-entering service on or after June 12, 2011	

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Covered Employee Group	Date of Termination	Benefit Multiplier	Allowance Cap [apply as indicated and remain in effect for subsequent termination dates unless otherwise amended]
APAGR 61st Dist. Court	January 1, 2003 to December 31, 2004	2.6%	97.5% for employees hired prior to January 1, 2005
APAGR 61st Dist. Court	January 1, 2005 to July 7, 2012	2.7%	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired on or after January 1, 2005 to September 12, 2011
APAGR 61st Dist. Court	July 8, 2012	2.7%, or 2.5%, or 2.2%, or 2.0% or 1.8% for future service from and after July 8, 2012, depending on the individual election made by the employee as provided in Section 1.229(8) Bargaining unit members hired on or after September 13, 2011 do not participate in the Retirement System	
Non-Represented Members as defined in Section 1.192(18.1)	January 1, 2005 to September 4, 2010	2.7%	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired on or after January 1, 2005
Non-Represented Members as defined in Section 1.192(18.1)	September 5, 2010	2.7% or 2.5% or 2.2% for future service from and after September 5, 2010, depending on the individual election made by the employee as provided in Section 1.229(1) 2.0% for non-represented members hired or re-entering service from September 5, 2010 through June 30, 2011 Bargaining unit members hired on or after July 1, 2011 do not participate in the Retirement System	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired from January 1, 2005 to June 30, 2011
61 st District Court Judges	January 1, 2005 to January 8, 2011	2.7%	97.5%

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Covered Employee Group	Date of Termination	Benefit Multiplier	Allowance Cap [apply as indicated and remain in effect for subsequent termination dates unless otherwise amended]
61 st District Court Judges	January 9, 2011	2.7% or 2.5% or 2.2% for future service from and after January 9, 2011, depending on the individual election made by the employee as provided in Section 1.229(2)	97.5%
Museum Full-Time Supervisory and Administrative Staff and Museum Non-Supervisory Staff	January 1, 2005 to June 30, 2006	2.7%	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired on or after January 1, 2005
Library Management and Confidential Employees	January 1, 2005 to September 4, 2010	2.7%	
EC Supervisors	January 1, 2006 to January 7, 2012	2.7%	
EC Supervisors	January 8, 2012	2.7%, 2.5%, 2.2%, 2.0% or 1.8% for future service from and after January 8, 2012, depending on the individual election made by the employee as provided in Section 1.229(5) Bargaining unit members hired on or after September 13, 2011 do not participate in the Retirement System	90% applicable for all employees entering this unit after July 1, 2004
GREIU	January 1, 2005 to July 7, 2012	2.7%	
GREIU	July 8, 2012	2.7%, 2.5%, 2.2%, 2.0% or 1.8% for future service from and after July 8, 2012, depending on the individual election made by the employee as provided in Section 1.229(4) Bargaining unit members hired on or after May 25, 2011 do not participate in the Retirement System	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired from January 1, 2005 to May 24, 2011

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Covered Employee Group	Date of Termination	Benefit Multiplier	Allowance Cap [apply as indicated and remain in effect for subsequent termination dates unless otherwise amended]
GREIU - Public Library Rank & File and Supervisory Bargaining Units	January 1, 2006 to July 7, 2012	2.7%	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired from January 1, 2005 to September 1, 2011
GREIU - Public Library Rank & File and Supervisory Bargaining Units	July 8, 2012	2.7%, 2.5%, 2.2%, 2.0% or 1.8% for future service from and after July 8, 2012, depending on the individual election made by the employee as provided in Section 1.229(6) Bargaining unit members hired on or after September 2, 2011 do not participate in the Retirement System	
GREIU - 61st District Court	January 1, 2005 to July 7, 2012	2.7%	97.5% for employees hired prior to January 1, 2005 94.5% for employees hired from January 1, 2005 to September 12, 2011
GREIU - 61st District Court	July 8, 2012	2.7%, 2.5%, 2.2%, 2.0% or 1.8% for future service from and after July 8, 2012, depending on the individual election made by the employee as provided in Section 1.229(7) Bargaining unit members hired on or after September 13, 2011 do not participate in the Retirement System	

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Early Allowance. If a member leaves covered employment after either (i) completing 20 years of credited service, or (ii) both attaining age 55 and completing 10 years or more of credited service, he can receive an immediate early allowance, computed in the same manner as an age and service allowance based upon salary and service to time of termination but actuarially reduced to reflect the fact that the age when payments begin is younger than age 62.

Deferred Retirement. A member with 8 or more years of credited service who terminates employment before voluntary retirement age and does not withdraw accumulated contributions will be eligible for a deferred allowance beginning at age 62, based upon service and final average salary at time of termination.

Death Benefit. If the member's termination of employment is because of death, a benefit equal to the termination benefit is payable to a beneficiary or estate, as follows:

A refund of accumulated contributions. In addition, a "termination bonus" equivalent to a certain percent of member contributions without interest may be payable. Such percent is 25%, plus 7.5% for each whole year of credited service in excess of 10 years, to a maximum of 100% for 20 or more years of service, times an age-based Termination Bonus Percent.

If the member was eligible for normal or early retirement at the time of death, in lieu of the lump sum death benefit an eligible beneficiary will begin receiving a B-100 joint and survivor pension computed in the same manner as a service retirement pension as if the member had retired the last day of his life.

Or, if the member was not represented by any collective bargaining unit or was represented by the Association of Public Administrators, the Grand Rapids Employees Independent Union or the 61st District Court Employee's Association, and the primary beneficiary was the surviving spouse, the benefit will be computed in the manner described in the preceding paragraph, except that the member will have been assumed to have reached the age for minimum service retirement at the date of his death.

The total amount of death benefit payable cannot exceed 90% of the member's annual rate of compensation at the time of death reduced by any worker's compensation or Social Security payments.

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Disability Benefit. If a member has 10 or more years of credited service before attaining the minimum service retirement age and becomes totally and permanently disabled, a benefit computed in the same manner as a full age and service benefit is payable. If disablement is a result of performance of duty, the 10-year minimum credited service requirement is waived and the benefit is computed as above with a minimum benefit of 50% (62% for those represented by police bargaining units) of final average salary.

The total amount of benefit payable due to disablement cannot exceed 90% of the member's annual rate of compensation at the time of disablement reduced by any worker's compensation payments, Social Security benefits, (disability benefits), and remuneration from any gainful employment.

Member Contributions. The contribution rates used are defined in the following table:

Member Classification	Period	Contribution Rate
Non-Represented Members, as defined in Section 1.192(18.1), excluding secretarial or clerical members designated as management non-union for payroll purposes, and excluding the Executive Administrative Assistant at the Grand Rapids Public Library	On or before July 1, 1977	3%
	July 2, 1977 to December 31, 1994	4%
	January 1, 1995 to December 31, 1996	3%
	January 1, 1997 to December 31, 2004	3.28%
	January 1, 2005 to September 4, 2010	4.93%
	On or after September 5, 2010	10.20%, or 8.95% or 7.28%, depending on the individual election made by the member as provided in Section 1.229(1) 6.15% for those non-represented members hired or re-entering service from September 5, 2010 through June 30, 2011

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Member Classification	Period	Contribution Rate
Non-Represented Members, as defined in Section 1.192(18.1), including only secretarial or clerical members designated as management non-union for payroll purposes, and including the Executive Administrative Assistant at the Grand Rapids Public Library	On or before July 1, 1977	3%
	July 2, 1977 to December 31, 1994	4%
	January 1, 1995 to December 31, 1996	3%
	January 1, 1997 to December 31, 2004	3.28%
	January 1, 2005 to September 4, 2010	4.93%
	September 5, 2010 to July 23, 2011	10.20%, or 8.95% or 7.28%, depending on the individual election made by the member as provided in Section 1.229(1)
	On or after July 24, 2011	6.15% for those non-represented members hired or re-entering service from September 5, 2010 through June 30, 2011 8.10% for members who elected a 2.7% multiplier under Section 1.229(1); 6.85% for members who elected a 2.5% multiplier under Section 1.229(1); 5.18% for members who elected a 2.2% multiplier under Section 1.229(1); 4.05% for members with a 2.0% multiplier who were hired or re-entered service from September 5, 2010 through June 30, 2011
Emergency Communications Operators I, II and III represented by GRPOLC	On or before July 1, 1977	3%
	July 2, 1977 to January 1, 1990	4%
	January 2, 1990 to January 1, 1991	3%
	January 2, 1991 to December 31, 1996	2%
	January 1, 1997 to June 30, 2005	2.28%
	July 1, 2005 to March 31, 2012	5.36%
	On or after April 1, 2012	10.63%, or 9.38%, or 7.71%, or 6.58%, or 5.36%, depending on the individual election made by the member as provided in Section 1.229(10)

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Member Classification	Period	Contribution Rate
Emergency Communication Supervisors	On or before December 31, 2005	3.28%
	January 1, 2006 to January 7, 2012	6.27%
	On or after January 8, 2012	11.54%, or 10.29%, or 8.62%, or 7.49%, or 6.27%, depending on the individual election made by the member as provided in Section 1.229(5)
Crime Scene Techs/Latent Print Examiners represented by the GRPOA	On or before July 1, 1977	3%
	July 2, 1977 to July 1, 1989	4%
	July 2, 1989 to July 1, 1990	3%
	July 2, 1990 to July 7, 2012	2%
	July 8, 2012 to July 30, 2014	7.27%, or 6.02%, or 4.35%, or 3.22%, or 2.00%, depending on the individual election made by the member as provided in Section 1.229(9)
On or after July 1, 2014	8.27%, or 7.02%, or 5.35%, or 4.22%, or 3.00%, depending on the individual election made by the member as provided in Section 1.229(9)	
GREIU	On or before July 1, 1977	3%
	July 2, 1977 to January 1, 1990	4%
	January 2, 1990 to December 31, 1996	3%
	January 1, 1997 to December 31, 2004	3.28%
	January 1, 2005 to July 7, 2012	3.89%
	On or after July 8, 2012	9.16%, or 7.91%, or 6.24%, or 5.11%, or 3.89%, depending on the individual election made by the member as provided in Section 1.229(4)
GREIU - 61st District Court	Prior to January 1, 1990	4%
	January 1, 1990 to December 31, 1996	3%
	January 1, 1997 to May 31, 2005	3.28%
	June 1, 2005 to July 7, 2012	4%
	On or after July 8, 2012	9.16%, or 7.91%, or 6.24%, or 5.11%, or 3.89%, depending on the individual election made by the member as provided in Section 1.229(7)



Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Member Classification	Period	Contribution Rate
GREIU – Public Library Rank & File and Supervisory Bargaining Units	On or before July 1, 1977	3%
	July 2, 1977 to January 1, 1988	4%
	January 2, 1988 to May 13, 1990	4.91%
	May 14, 1990 to December 31, 1996	4%
	January 1, 1997 to December 31, 2005	3.28%
	January 1, 2006 to July 7, 2012	3.63%
	On or after July 8, 2012	8.90%, or 7.65%, or 5.98%, or 4.85%, or 3.63%, depending on the individual election made by the member as provided in Section 1.229(6)
Library Management and Confidential Employees	On or before July 1, 1977	3%
	July 2, 1977 to January 1, 1988	4%
	January 2, 1988 to May 13, 1990	4.91%
	May 14, 1990 to December 31, 1996	4%
	January 1, 1997 to December 31, 2004	3.28%
	January 1, 2005 to September 4, 2010	4.93%
APAGR 61st District Court	Prior to January 1, 1990	4%
	January 1, 1990 to December 31, 1996	3%
	January 1, 1997 to December 31, 2004	3.28%
	January 1, 2005 to July 7, 2012	4%
	On or after July 8, 2012	9.27%, or 8.02%, or 6.35%, or 5.22%, or 4.00%, depending on the individual election made by the member as provided in Section 1.229(8)

Summary of Benefit Provisions Evaluated (June 30, 2020) (Continued)

Member Classification	Period	Contribution Rate
Non-Represented Members of the 61 st District Court	January 1, 2005 to September 4, 2010	4%
61 st District Court Judges	January 1, 2005 to January 8, 2011	4%
61 st District Court Judges	On or after January 9, 2011	10.20%, or 8.95% or 7.28%, depending on the individual election made by the member as provided in Section 1.229(2)
Association of Public Administrators of GR (APAGR)*	Prior to December 31, 1994	4%
	January 1, 1995 to December 31, 1996	3%
	January 1, 1997 to December 31, 2004	3.28%
	January 1, 2005 to June 11, 2011	3.99%
	On or after June 12, 2011	9.26%, or 8.01% or 6.34%, depending on the individual election made by the member as provided in Section 1.229(3) 6.15% for those APAGR members hired or re-entering service on or after June 12, 2011

**[No contribution after completing 39 years of service.]*

Summary of Benefit Provisions Evaluated (June 30, 2020) (Concluded)

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.

Compensation. Compensation recognized for retirement system purposes includes base pay and longevity pay.

Post-Retirement Increases. Post-retirement benefit increases are 0% unless otherwise stated:

Member Classification	Termination Date	Escalator
GREIU and GREIU-61 st District Court	On or after March 24, 2009	1.0%, 4-year delay
GREIU Public Library Rank and File & Supervisory Bargaining Units	On or after July 9, 2009	1.0%, 4-year delay
Crime Scene Techs/Latent Print Examiners represented by the GRPOA	On or after May 12, 2009	1.0%, 6-year delay
Association of Public Administrators and APA 61 st District Court	On or after October 21, 2008	1.0%, 4-year delay
EC Supervisors	On or after September 13, 2011	1.0%, 6-year delay
Non-Represented Members	On or after July 1, 2014	1.0%, 7-year delay

13th Check. 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 5 years in the form of a 13th check. Net investment income is based on a market value rate of return averaged over the preceding 5 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. Only member classification groups not covered by the post-retirement increase participate in the 13th check program.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Methods

Age and Service Benefits and Casualty Benefits. Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an 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 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.

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

The actuary calculates the contribution requirements and benefit values of the System by applying financial assumptions to the benefit provisions and people 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 (without entitlement to a retirement benefit);
- (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 of the System 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 rationale for the assumptions used in this valuation is included in the 5-year experience study ending June 30, 2019, approved by the Board in June 2020. All assumptions are expectations of future experience, not market measures.

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

Salary Increase Assumptions for an Individual Member			
Sample Ages	Merit & Seniority	Base (Economic)	Increase Next Year
20	4.16%	3.00%	7.16%
25	2.88	3.00	5.88
30	1.98	3.00	4.98
35	1.52	3.00	4.52
40	1.10	3.00	4.10
45	0.66	3.00	3.66
50	0.32	3.00	3.32
55	0.14	3.00	3.14
60	0.00	3.00	3.00
65	--	3.00	3.00

Service at Beginning of Year	Additional Service Based Merit/Seniority Portion of Annual Increases
	Present
1	4.00%
2	3.00%
3	1.75%
4	1.75%
5	1.75%

If the number of active members remains constant, then the total active member payroll will increase 3.00% annually, the base portion of the individual salary increase assumptions. The 3.00% assumption was first used for the June 30, 2020 valuation.

The rate of investment return was 7.00% a year compounded yearly and was first used for the June 30, 2019 valuation.

The rate of inflation (price) was 2.25% a year compounded yearly. While not explicitly used in the valuation, this assumption was first reflected in the June 30, 2020 valuation.

The mortality tables

- **Healthy Pre-Retirement:** The Pub-2010 Amount-Weighted, General, Employee, Male and Female tables, a base year of 2010 and future mortality improvements projected using scale MP-2019.
- **Healthy Post-Retirement:** The Pub-2010 Amount-Weighted, General, Healthy Retiree, Male and Female tables, with a base year of 2010 and future mortality improvements projected using scale MP-2019.
- **Disability Retirement:** The Pub-2010 Amount-Weighted, General, Disabled Retiree, Male and Female, with a base year of 2010 and future mortality improvements projected using scale MP-2019.

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

Sample Ages in 2020	Value at Retirement of \$1 Monthly for Life		Future Life Expectancy (Years)*	
	Men	Women	Men	Women
50	\$154.12	\$158.37	35.54	38.50
55	146.87	152.29	30.64	33.52
60	137.82	144.39	25.93	28.65
65	126.66	134.13	21.43	23.92
70	112.86	121.07	17.17	19.36
75	96.49	105.15	13.21	15.09
80	78.47	87.12	9.73	11.26

* Applicable to the year ended June 30, 2020. Life expectancy in future years is based on the MP-2019 projection scale.

These rates were first used for the June 30, 2020 valuation.

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows. These rates were first used for the June 30, 2020 valuation.

A member is eligible for retirement after completing 30 or more years of service or after both attaining age 62 and completing 8 or more years of service. Prior to the above eligibility, members who are eligible for early reduced retirement are assumed to elect this option at a 3% rate per year until eligible for Normal Retirement.

Normal Unreduced Retirement

Retirement Ages	Percent Retiring	Retirement Ages	Percent Retiring
50	40%	60	40%
51	40	61	40
52	40	62	40
53	40	63	40
54	40	64	40
55	40	65	50
56	40	66	60
57	40	67	70
58	40	68	80
59	40	69	90
		70-79	100
		80	100

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 June 30, 2020 valuation.

Sample Ages	Years of Service	% of Active Members Separating within Next Year	
		Men	Women
ALL	0	15.00%	15.00%
	1	8.00	8.00
	2	7.00	7.00
	3	6.00	6.00
	4	5.00	5.00
20	5 & Over	6.04	13.57
25		5.87	13.21
30		5.62	12.35
35		5.22	10.73
40		4.65	8.81
45		3.93	6.80
50		2.75	4.38
55		1.04	1.61
60		0.10	0.15

The rates of disability were as follows:

Sample Ages	% of Active Members Becoming Disabled within Next Year
20	0.01%
25	0.01
30	0.01
35	0.07
40	0.13
45	0.29
50	0.56
55	0.84
60	1.09

		Duty Related	Non-Duty Related
Cause of Disability:	Men	30%	70%
	Women	30%	70%

These rates were first used for the June 30, 2020 valuation.

Miscellaneous and Technical Assumptions

Marriage Assumption:	100% of males and females are assumed to be married for purposes of death-in-service benefits.
Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur in the middle of the 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.
Decrement Operation:	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form.
Other Adjustments:	Actuarial accrued liabilities were adjusted as a provision for subsidized service purchases, pending refunds, and other contingent events. Retirement present values were also adjusted for Crime Scene Technicians and ECO to reflect the “gross up factor.”
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.
Multiplier Election:	Most active members have the option to make higher member contributions and receive a higher benefit multiplier. Individual elections are reported and reflected in the valuation results.
13th Check Payments:	Future liabilities of members in the 13 th Check program were increased by 7.5% to account for future payments.
Service Purchases:	Liabilities were increased by \$3.6 million to load for service purchases made to date.

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 municipal bond 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 7.00%; the municipal bond rate is 2.45%; and the resulting Single Discount Rate is 7.00%.

The tables in this section provide background for the development of the Single Discount Rate.

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. For purposes of this projection, the Plan Fiduciary Net Position was amortized over a closed period of 25 years.

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 SDR. 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 Beginning July 1, 2020

Year	Payroll for Current Employees	Contributions from Current Employees	Service Cost and Expense Contributions	UAL Contributions	Total Contributions
1	\$ 28,873,053	\$ 2,242,801	\$ 1,897,678	\$ 12,791,058	\$ 16,931,536
2	26,930,792	2,083,314	1,725,655	12,791,058	16,600,027
3	24,986,485	1,930,490	1,574,071	12,791,058	16,295,619
4	23,172,047	1,779,124	1,428,859	12,791,058	15,999,041
5	21,307,475	1,626,639	1,284,354	12,791,058	15,702,050
6	19,495,088	1,478,943	1,147,621	12,791,058	15,417,622
7	17,734,166	1,338,161	1,022,203	12,791,058	15,151,421
8	16,134,258	1,197,723	901,317	12,791,058	14,890,098
9	14,384,729	1,052,137	781,044	12,791,058	14,624,238
10	12,629,432	905,509	666,711	12,791,058	14,363,277
11	10,821,091	764,959	563,926	12,791,058	14,119,943
12	9,245,044	646,924	479,775	12,791,058	13,917,757
13	7,927,139	549,757	409,329	12,791,058	13,750,144
14	6,777,459	461,922	343,653	12,791,058	13,596,632
15	5,666,739	389,499	287,488	12,791,058	13,468,045
16	4,896,618	334,101	244,378	12,791,058	13,369,537
17	4,198,647	280,117	201,776	12,791,058	13,272,950
18	3,386,425	223,117	157,243	12,791,058	13,171,417
19	2,586,185	170,464	117,542	12,791,058	13,079,064
20	1,949,414	127,532	85,777	12,791,058	13,004,367
21	1,434,493	88,864	58,951	12,791,058	12,938,872
22	927,365	56,350	37,627	12,791,058	12,885,035
23	584,392	35,467	23,953	12,791,058	12,850,478
24	376,509	21,843	14,812	12,791,058	12,827,713
25	218,357	12,606	8,496	12,791,058	12,812,160
26	124,289	7,111	4,731	-	11,843
27	68,507	3,906	2,595	-	6,502
28	37,050	2,064	1,344	-	3,407
29	18,422	1,007	648	-	1,655
30	8,368	456	275	-	731
31	3,540	200	121	-	322
32	1,517	91	49	-	141
33	692	43	24	-	67
34	300	18	5	-	23
35	110	6	1	-	7
36	31	2	1	-	3
37	6	0	-	-	0
38	1	0	-	-	0
39	-	-	-	-	-
40	-	-	-	-	-
41	-	-	-	-	-
42	-	-	-	-	-
43	-	-	-	-	-
44	-	-	-	-	-
45	-	-	-	-	-
46	-	-	-	-	-
47	-	-	-	-	-
48	-	-	-	-	-
49	-	-	-	-	-
50	-	-	-	-	-

Single Discount Rate Development

Projection of Plan Fiduciary Net Position Beginning July 1, 2020

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 403,408,591	\$ 16,931,536	\$ 36,460,784	\$ 564,772	\$ 28,131,410	\$ 411,445,982
2	411,445,982	16,600,027	37,711,494	576,024	28,650,839	418,409,330
3	418,409,330	16,295,619	38,974,020	585,773	29,094,107	424,239,262
4	424,239,262	15,999,041	40,176,511	593,935	29,458,784	428,926,641
5	428,926,641	15,702,050	41,351,497	600,497	29,742,815	432,419,512
6	432,419,512	15,417,622	42,571,920	605,387	29,940,427	434,600,253
7	434,600,253	15,151,421	43,527,982	608,440	30,054,076	435,669,328
8	435,669,328	14,890,098	44,525,577	609,937	30,087,091	435,511,003
9	435,511,003	14,624,238	45,541,931	609,715	30,031,668	434,015,263
10	434,015,263	14,363,277	46,537,437	607,621	29,881,640	431,115,122
11	431,115,122	14,119,943	47,383,348	603,561	29,637,091	426,885,247
12	426,885,247	13,917,757	47,970,479	597,639	29,307,919	421,542,804
13	421,542,804	13,750,144	48,378,398	590,160	28,906,666	415,231,055
14	415,231,055	13,596,632	48,672,024	581,323	28,440,622	408,014,963
15	408,014,963	13,468,045	48,760,217	571,221	27,917,934	400,069,503
16	400,069,503	13,369,537	48,510,114	560,097	27,355,844	391,724,672
17	391,724,672	13,272,950	48,168,739	548,415	26,768,446	383,048,915
18	383,048,915	13,171,417	47,791,107	536,268	26,158,497	374,051,454
19	374,051,454	13,079,064	47,274,039	523,672	25,530,692	364,863,498
20	364,863,498	13,004,367	46,595,164	510,809	24,895,460	355,657,353
21	355,657,353	12,938,872	45,806,569	497,920	24,263,022	346,554,757
22	346,554,757	12,885,035	44,831,373	485,177	23,644,799	337,768,041
23	337,768,041	12,850,478	43,681,645	472,875	23,055,798	329,519,796
24	329,519,796	12,827,713	42,380,485	461,328	22,510,860	322,016,557
25	322,016,557	12,812,160	41,017,389	450,823	22,021,495	315,382,000
26	315,382,000	11,843	39,535,270	441,535	21,158,351	296,575,388
27	296,575,388	6,502	37,927,033	415,206	19,870,711	278,110,362
28	278,110,362	3,407	36,247,538	389,355	18,609,990	260,086,868
29	260,086,868	1,655	34,541,037	364,122	17,381,770	242,565,134
30	242,565,134	731	32,828,396	339,591	16,189,615	225,587,493
31	225,587,493	322	31,101,363	315,822	15,036,821	209,207,451
32	209,207,451	141	29,350,601	292,890	13,927,520	193,491,620
33	193,491,620	67	27,616,732	270,888	12,865,066	178,469,132
34	178,469,132	23	25,910,297	249,857	11,851,174	164,160,176
35	164,160,176	7	24,240,563	229,824	10,886,966	150,576,763
36	150,576,763	3	22,615,354	210,807	9,973,031	137,723,635
37	137,723,635	0	21,041,084	192,813	9,109,485	125,599,223
38	125,599,223	0	19,522,995	175,839	8,296,036	114,196,425
39	114,196,425	-	18,065,044	159,875	7,532,042	103,503,549
40	103,503,549	-	16,670,043	144,905	6,816,570	93,505,170
41	93,505,170	-	15,339,739	130,907	6,148,459	84,182,983
42	84,182,983	-	14,074,896	117,856	5,526,375	75,516,606
43	75,516,606	-	12,875,473	105,723	4,948,866	67,484,276
44	67,484,276	-	11,740,889	94,478	4,414,396	60,063,305
45	60,063,305	-	10,670,153	84,089	3,921,381	53,230,444
46	53,230,444	-	9,662,119	74,523	3,468,199	46,962,002
47	46,962,002	-	8,715,605	65,747	3,053,200	41,233,850
48	41,233,850	-	7,829,236	57,727	2,674,708	36,021,596
49	36,021,596	-	7,001,410	50,430	2,331,037	31,300,792
50	31,300,792	-	6,230,592	43,821	2,020,494	27,046,872



Single Discount Rate Development

Present Values of Projected Benefit Payments

Beginning July 1, 2020

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)}
1	\$ 403,408,591	\$ 36,460,784	\$ 36,460,784	\$ -	\$ 35,247,968	\$ -	\$ 35,247,968
2	411,445,982	37,711,494	37,711,494	-	34,072,034	-	34,072,034
3	418,409,330	38,974,020	38,974,020	-	32,909,081	-	32,909,081
4	424,239,262	40,176,511	40,176,511	-	31,705,090	-	31,705,090
5	428,926,641	41,351,497	41,351,497	-	30,497,500	-	30,497,500
6	432,419,512	42,571,920	42,571,920	-	29,343,537	-	29,343,537
7	434,600,253	43,527,982	43,527,982	-	28,039,740	-	28,039,740
8	435,669,328	44,525,577	44,525,577	-	26,805,951	-	26,805,951
9	435,511,003	45,541,931	45,541,931	-	25,624,142	-	25,624,142
10	434,015,263	46,537,437	46,537,437	-	24,471,274	-	24,471,274
11	431,115,122	47,383,348	47,383,348	-	23,286,063	-	23,286,063
12	426,885,247	47,970,479	47,970,479	-	22,032,339	-	22,032,339
13	421,542,804	48,378,398	48,378,398	-	20,766,068	-	20,766,068
14	415,231,055	48,672,024	48,672,024	-	19,525,331	-	19,525,331
15	408,014,963	48,760,217	48,760,217	-	18,281,038	-	18,281,038
16	400,069,503	48,510,114	48,510,114	-	16,997,449	-	16,997,449
17	391,724,672	48,168,739	48,168,739	-	15,773,677	-	15,773,677
18	383,048,915	47,791,107	47,791,107	-	14,626,182	-	14,626,182
19	374,051,454	47,274,039	47,274,039	-	13,521,436	-	13,521,436
20	364,863,498	46,595,164	46,595,164	-	12,455,386	-	12,455,386
21	355,657,353	45,806,569	45,806,569	-	11,443,538	-	11,443,538
22	346,554,757	44,831,373	44,831,373	-	10,467,207	-	10,467,207
23	337,768,041	43,681,645	43,681,645	-	9,531,560	-	9,531,560
24	329,519,796	42,380,485	42,380,485	-	8,642,654	-	8,642,654
25	322,016,557	41,017,389	41,017,389	-	7,817,456	-	7,817,456
26	315,382,000	39,535,270	39,535,270	-	7,042,038	-	7,042,038
27	296,575,388	37,927,033	37,927,033	-	6,313,625	-	6,313,625
28	278,110,362	36,247,538	36,247,538	-	5,639,293	-	5,639,293
29	260,086,868	34,541,037	34,541,037	-	5,022,243	-	5,022,243
30	242,565,134	32,828,396	32,828,396	-	4,460,959	-	4,460,959
31	225,587,493	31,101,363	31,101,363	-	3,949,792	-	3,949,792
32	209,207,451	29,350,601	29,350,601	-	3,483,598	-	3,483,598
33	193,491,620	27,616,732	27,616,732	-	3,063,370	-	3,063,370
34	178,469,132	25,910,297	25,910,297	-	2,686,061	-	2,686,061
35	164,160,176	24,240,563	24,240,563	-	2,348,564	-	2,348,564
36	150,576,763	22,615,354	22,615,354	-	2,047,761	-	2,047,761
37	137,723,635	21,041,084	21,041,084	-	1,780,575	-	1,780,575
38	125,599,223	19,522,995	19,522,995	-	1,544,027	-	1,544,027
39	114,196,425	18,065,044	18,065,044	-	1,335,253	-	1,335,253
40	103,503,549	16,670,043	16,670,043	-	1,151,536	-	1,151,536
41	93,505,170	15,339,739	15,339,739	-	990,319	-	990,319
42	84,182,983	14,074,896	14,074,896	-	849,217	-	849,217
43	75,516,606	12,875,473	12,875,473	-	726,027	-	726,027
44	67,484,276	11,740,889	11,740,889	-	618,738	-	618,738
45	60,063,305	10,670,153	10,670,153	-	525,524	-	525,524
46	53,230,444	9,662,119	9,662,119	-	444,744	-	444,744
47	46,962,002	8,715,605	8,715,605	-	374,931	-	374,931
48	41,233,850	7,829,236	7,829,236	-	314,768	-	314,768
49	36,021,596	7,001,410	7,001,410	-	263,071	-	263,071
50	31,300,792	6,230,592	6,230,592	-	218,792	-	218,792



Single Discount Rate Development

Present Values of Projected Benefit Payments

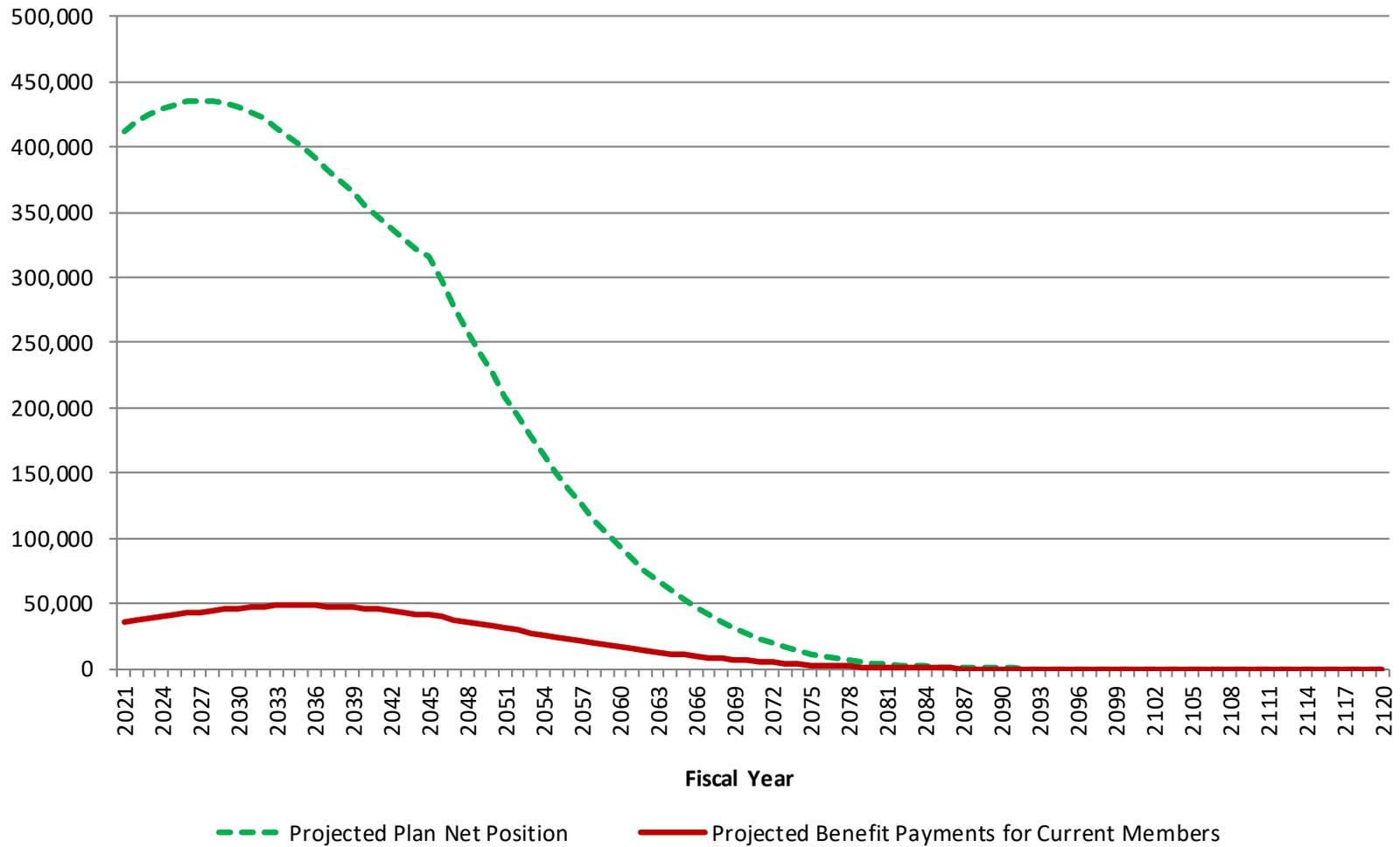
Beginning July 1, 2020 (Concluded)

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}
51	\$ 27,046,872	\$ 5,515,488	\$ 5,515,488	\$ -	\$ 181,010	\$ -	\$ 181,010
52	23,234,888	4,855,027	4,855,027	-	148,911	-	148,911
53	19,839,251	4,248,171	4,248,171	-	121,774	-	121,774
54	16,833,655	3,693,743	3,693,743	-	98,954	-	98,954
55	14,191,173	3,190,383	3,190,383	-	79,878	-	79,878
56	11,884,398	2,736,529	2,736,529	-	64,032	-	64,032
57	9,885,618	2,330,296	2,330,296	-	50,960	-	50,960
58	8,167,135	1,969,446	1,969,446	-	40,251	-	40,251
59	6,701,624	1,651,442	1,651,442	-	31,544	-	31,544
60	5,462,473	1,373,532	1,373,532	-	24,519	-	24,519
61	4,424,053	1,132,905	1,132,905	-	18,901	-	18,901
62	3,561,852	926,667	926,667	-	14,448	-	14,448
63	2,852,629	751,800	751,800	-	10,955	-	10,955
64	2,274,645	605,131	605,131	-	8,241	-	8,241
65	1,807,917	483,445	483,445	-	6,153	-	6,153
66	1,434,392	383,651	383,651	-	4,564	-	4,564
67	1,137,947	302,824	302,824	-	3,366	-	3,366
68	904,360	238,190	238,190	-	2,475	-	2,475
69	721,279	187,119	187,119	-	1,817	-	1,817
70	578,211	147,191	147,191	-	1,336	-	1,336
71	466,431	116,276	116,276	-	986	-	986
72	378,804	92,528	92,528	-	733	-	733
73	309,609	74,362	74,362	-	551	-	551
74	254,361	60,453	60,453	-	419	-	419
75	209,633	49,734	49,734	-	322	-	322
76	172,862	41,373	41,373	-	250	-	250
77	142,166	34,692	34,692	-	196	-	196
78	116,232	29,188	29,188	-	154	-	154
79	94,177	24,524	24,524	-	121	-	121
80	75,401	20,487	20,487	-	95	-	95
81	59,488	16,946	16,946	-	73	-	73
82	46,123	13,821	13,821	-	56	-	56
83	35,054	11,068	11,068	-	42	-	42
84	26,059	8,676	8,676	-	31	-	31
85	18,909	6,645	6,645	-	22	-	22
86	13,359	4,958	4,958	-	15	-	15
87	9,166	3,590	3,590	-	10	-	10
88	6,095	2,514	2,514	-	7	-	7
89	3,921	1,702	1,702	-	4	-	4
90	2,434	1,111	1,111	-	3	-	3
91	1,455	696	696	-	2	-	2
92	837	417	417	-	1	-	1
93	464	239	239	-	-	-	-
94	249	132	132	-	-	-	-
95	129	71	71	-	-	-	-
96	65	37	37	-	-	-	-
97	32	18	18	-	-	-	-
98	15	9	9	-	-	-	-
99	7	5	5	-	-	-	-
100	2	2	2	-	-	-	-
Totals	\$ 581,996,709	\$ -	\$ 581,996,709	\$ -	\$ -	\$ -	\$ -



Projection of Plan Net Position and Benefit Payments

\$ [thousands]



SECTION H

MICHIGAN PUBLIC ACT 202

State Reporting Assumptions as of June 30, 2020

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 October 21, 2019.

Uniform Assumption	PA 202	Valuation Assumption Used	Uniform Assumption Used
Investment Rate of Return Discount Rate	Maximum of 7.00%^	7.00%	7.00%
Salary Increase	Minimum of 3.50% or based on experience study within last 5 years	3.00% + Merit and longevity (based on experience study dated June 8, 2020)	3.00% + Merit and longevity (based on experience study dated June 8, 2020)
Mortality	Version of Pub-2010 with fully generational mortality improvements using MP-2018 or based on experience study	A version of Pub-2010 (based on experience study dated June 8, 2020)	A version of Pub-2010 (based on experience study dated June 8, 2020)
Amortization of the Unfunded Accrued Actuarial Liability: Period	Maximum Period of 19 Years	25-30 years	19 years
Method	Closed Plans: Level Dollar Open Plans: Level Percent of Payroll or Level Dollar	Level Dollar	Level Dollar
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 7.00%; for periods in which projected plan assets are NOT sufficient to make projected benefit payments – 3.00%.

State Reporting as of June 30, 2020

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 No. 5572). Additional resources are available on the State website.

Line	Descriptive Information	
23	Uniform Assumptions¹	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$426,996,313
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions	\$557,599,165
26	Funded ratio using uniform assumptions	Auto ²
27	Actuarially Determined Contribution (ADC) using uniform assumptions ³	\$ 13,432,176
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, June 30, 2020, after reflecting uniform assumptions.

² Automatically calculated by State of Michigan Form 5572.

³ For the fiscal year ending June 30, 2020.

SECTION I

GLOSSARY OF TERMS

Glossary of Terms

<i>Accrued Service</i>	Service credited under the system that was rendered before the date of the actuarial valuation.
<i>Actuarial Accrued Liability (AAL)</i>	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."
<i>Actuarial Assumptions</i>	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.
<i>Actuarial Cost Method</i>	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.
<i>Actuarial Equivalent</i>	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.
<i>Actuarial Gain (Loss)</i>	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.
<i>Actuarial Present Value (APV)</i>	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.
<i>Actuarial Valuation</i>	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.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	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

<i>Amortization Method</i>	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).
<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	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.
<i>Covered Payroll</i>	The payroll of employees that are provided with pensions through the pension plan.
<i>Deferred Inflows and Outflows</i>	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.
<i>Deferred Retirement Option Program (DROP)</i>	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.
<i>Discount Rate</i>	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: <ol style="list-style-type: none">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; and2. 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 cost 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 market value of the assets of the trust dedicated to the defined benefit provisions.

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 contributing entities to plan members for benefits provided through a defined benefit pension plan.

Non-Employer Contributing Entities

Non-employer contributing 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 statements, plan members are not considered non-employer contributing entities.

Normal Cost

The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	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 post-employment benefits do not include termination benefits.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.