

City of Grand
Rapids Police and
Fire Retirement
System



Years Ended
December 31,
2018 and 2017

Financial
Statements

City of Grand Rapids Police and Fire Retirement System

Table of Contents

	<u>Page</u>
Independent Auditors' Report	1
Management's Discussion and Analysis	3
Basic Financial Statements	
Statements of Fiduciary Net Position	10
Statements of Changes in Fiduciary Net Position	11
Notes to Financial Statements	13
Required Supplementary Information	
Schedule of Changes in the Employer's Net Pension Liability and Related Ratios	30
Schedule of Employer Contributions	32
Schedule of Investment Returns	34
Schedule of the Employer's Net Pension Liability	35
Internal Control and Compliance	
Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	39



INDEPENDENT AUDITORS' REPORT

June 5, 2019

Board of Trustees
City of Grand Rapids Police and Fire Retirement System
Grand Rapids, Michigan

Report on the Financial Statements

We have audited the financial statements of the City of Grand Rapids Police and Fire Retirement System (the "System"), a pension trust fund of the City of Grand Rapids, Michigan, as of and for the years ended December 31, 2018 and 2017, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Independent Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the City of Grand Rapids Police and Fire Retirement System as of December 31, 2018 and 2017, and the change in fiduciary net position thereof for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Reporting Entity

As discussed in Note 1, the financial statements present only the City of Grand Rapids Police and Fire Retirement System and do not purport to, and do not, present fairly the financial position of the City of Grand Rapids, Michigan as of December 31, 2018 and 2017 or the change in its financial position for the years then ended, in conformity with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the schedules of pension information, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated June 5, 2019 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

The image shows a handwritten signature in cursive script that reads "Lehmann Johnson LLC". The signature is written in black ink and is positioned in the lower right area of the page.

Management's Discussion and Analysis

**City of Grand Rapids Police and Fire Retirement System
Management's Discussion and Analysis
For the Year Ended December 31, 2018**

This section of the City of Grand Rapids Police and Fire Retirement System's (the System) annual financial statements presents a discussion and analysis of the financial performance of the System for the fiscal year ended December 31, 2018. This discussion has been prepared by management and should be read in conjunction with the financial statements. This discussion and analysis is designed to focus on current activities, resulting changes and current known facts. The financial statements and this discussion are the responsibility of management.

Overall Fund Structure and Objectives

The System exists to pay benefits to its retirees and beneficiaries. Active members earn service credit that entitles them to receive benefits in the future. Generally speaking, benefits paid out in any given year are significantly greater than the contributions received. The excess of benefits over contributions must be funded through investment income. The employer contribution rate was/will be 23.59% from July 1, 2017 through June 30, 2018, 24.79% from July 1, 2018 through June 30, 2019, and 27.82% from July 1, 2019 through June 30, 2020.

Asset Allocation

The System has established asset allocation policies, which are expected to deliver sufficient investment income over a very long period of time to satisfy the obligations to pay the benefits promised to its members. To maximize investment returns and preserve fund assets, the System carefully monitors the performance of each of its investment managers and takes the necessary corrective action to ensure acceptable investment results. The following is a summary of the System's asset allocation policy as of December 31, 2018 and 2017:

	2018	2017
U.S. equity	17.75%	22.50%
Fixed income	24.50	25.00
Non-U.S. equity	10.25	15.00
American Depository Receipts (ADRs)	7.50	7.50
Global low volatility	10.00	0.00
Real estate securities	5.00	5.00
Master Limited Partnerships (MLPs)	5.00	5.00
Treasury Inflation Protected Securities	5.00	10.00
Private equity	5.00	5.00
Commodities	5.00	5.00
Private Credit	5.00	0.00

Investment Results

The System's performance consultant, Wilshire Associates, reported a market rate of return of -5.99% and 14.21% on retirement system assets for the years ended December 31, 2018 and 2017, respectively. Had the assets all been invested passively, the return would have been -5.85% and 13.18%, which means that the System's assets underperformed their benchmark by 0.14% for the year ended December 31, 2018 and outperformed their benchmark by 1.03% for the year ended December 31, 2017.

Management believes, and actuarial studies concur, that at an 80.59% funding level the System is in a solid financial position to meet its current obligations. We believe that the current financial position will continue to improve due to a prudent investment program, cost controls and strategic planning.

Using the Financial Statements

The System's financial report includes two financial statements: the Statements of Fiduciary Net Position and the Statements of Changes in Fiduciary Net Position. These statements include all assets and liabilities using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, all revenues and expenses are taken into account regardless of when cash is received or paid.

The Statements of Fiduciary Net Position present all of the System's assets and liabilities, with the difference between the two reported as net position. Over time, increases and decreases in net position measure whether the System's financial position is improving or deteriorating. The Statements of Changes in Fiduciary Net Position present how the System's net position changed during the most recent fiscal year. These two financial statements should be reviewed along with the Required Supplementary Information to determine whether the System is becoming financially stronger or weaker, and to understand changes over time in the funded status of the System.

Statements of Fiduciary Net Position

The following table shows, in a condensed format, the current year's fiduciary net position compared to the prior two years:

	2016	2017	2018	Change From Prior Year	
				In Dollars	As %
Assets					
Cash and money market funds	\$ 5,401,356	\$ 6,597,667	\$ 3,550,467	\$ (3,047,200)	-46.2%
Stocks, equity mutual funds and partnerships	240,487,092	267,085,596	218,882,861	(48,202,735)	-18.0%
Fixed income	91,747,896	99,565,250	102,327,715	2,762,465	2.8%
Real estate	17,961,142	20,026,836	18,438,077	(1,588,759)	-7.9%
Private equity partnerships	11,278,926	14,573,844	20,505,570	5,931,726	40.7%
Commodities	14,331,487	17,768,977	15,662,584	(2,106,393)	-11.9%
Private credit partnerships	-	-	6,846,256	6,846,256	100.0%
Securities lending collateral	18,937,498	18,207,550	14,473,713	(3,733,837)	-20.5%
Total cash and investments	400,145,397	443,825,720	400,687,243	(43,138,477)	-9.7%
Receivables	3,108,005	3,152,397	6,779,362	3,626,965	115.1%
Total Assets	403,253,402	446,978,117	407,466,605	(39,511,512)	-8.8%
Liabilities					
Administrative expenses and investment management fees payable	310,591	365,892	412,034	46,142	12.6%
Pending trades - purchases	832,374	2,858,640	5,025,176	2,166,536	75.8%
Amounts due broker under securities lending agreement	18,937,498	18,207,550	14,473,713	(3,733,837)	-20.5%
Total Liabilities	20,080,463	21,432,082	19,910,923	(1,521,159)	-7.1%
Net Position Restricted for Pension Benefits	\$383,172,939	\$425,546,035	\$387,555,682	\$(37,990,353)	-8.9%

Cash and money market funds increased in 2017 and decreased in 2018. The System has no cash allocation, so any fluctuations from one year to the next are due to pending trades and the timing of cash flows due to settlement dates. The increase in fixed income in both years was mainly due to strong performance by the System's fixed income managers. The large increases in private equity partnerships for both years was due to an increase in capital calls of previously committed funds. Commodities experienced strong returns in 2017 and negative returns in 2018. The difference in receivables from one year to the next is simply a timing issue related to when funds are received, as well as pending securities sales.

The System participates in a securities lending program. The Northern Trust Company is the exclusive agent of the System. The agent fully indemnifies the System against borrower default in compliance with state statutes. As of December 31, 2018, the market value of securities on loan was approximately \$14.2 million, and as of December 31, 2017, the market value of securities on loan was approximately \$17.8 million.

When a security is placed on loan, the System receives cash collateral in an amount not less than 102% of the market value of the security loaned. Loans are marked-to-market daily. Cash collateral is invested by the agent in a separately managed account. Borrowers receive a daily interest rebate on the cash collateral provided to the agent. Earnings from securities lending represent the difference, or spread, between the earnings on the cash collateral and the interest rebate paid to the borrower. Securities lending income is used to offset the System's custody and benefit payment expenses.

The market value of the collateral invested is carried as an asset, and the amount of collateral repayable to the borrower upon return of the securities from loan is carried as a liability in the financial statements. The increase in assets caused by securities lending will always be offset by a corresponding liability of the same amount, so that the two amounts cancel each other out.

Because the number of securities out on loan under the System's lending program can fluctuate greatly depending on demand and available securities, the assets and liabilities can be expected to vary widely from one year to the next, or not much at all, depending on how many securities are out on loan on December 31 of each year.

Statements of Changes in Fiduciary Net Position

The following table shows, in a condensed format, the changes in fiduciary net position, compared to the prior two years:

	2016	2017	2018	Change From Prior Year	
				In Dollars	As %
Additions					
Contributions	\$ 12,096,193	\$ 14,026,330	\$ 14,734,432	\$ 708,102	5.0%
Net investment income (loss)	25,615,694	53,624,902	(24,803,545)	(78,428,447)	-146.3%
Securities lending	97,250	115,689	85,431	(30,258)	-26.2%
Total Additions	37,809,137	67,766,921	(9,983,682)	(77,750,603)	-114.7%
Deductions					
Benefits	29,360,463	24,813,135	27,404,159	2,591,024	10.4%
Administrative expense	542,277	580,690	602,512	21,822	3.8%
Total Deductions	29,902,740	25,393,825	28,006,671	2,612,846	10.3%
Net Increase (Decrease)	7,906,397	42,373,096	(37,990,353)	(80,363,449)	-189.7%
Net Position Restricted for Pension Benefits, beginning of year	375,266,542	383,172,939	425,546,035	42,373,096	11.1%
Net Position Restricted for Pension Benefits, end of year	\$383,172,939	\$425,546,035	\$387,555,682	\$(37,990,353)	-8.9%

The increase in net investment income in 2017 was primarily due to a very strong investment environment, with the opposite for 2018. Contributions increased in both years due to salary increases and a higher employer contribution rate. The decrease in benefit payments for 2017 was due to not issuing a 13th Check. A 13th Check was issued in 2018. The amount of the 13th Check, when issued, can vary greatly from one year to the next. Securities lending income increased in 2017 and decreased in 2018. This is due to changes in demand and securities available to lend.

Other Important Matters

In late 2018 the System added an allocation to global low volatility equities, with funding to occur in 2019.

Contacting System Financial Management

This financial report is designed to provide the Board of Trustees, our membership, taxpayers and creditors with a general overview of the System's finances and to demonstrate the System's accountability for the money it receives. If you have any questions about this report or need additional financial information, contact the Retirement Systems office, 233 E. Fulton, Suite 216, Grand Rapids, Michigan, 49503.

Financial Statements

City of Grand Rapids Police & Fire Retirement System

Statements of Fiduciary Net Position

<i>December 31,</i>	2018	2017
Assets		
Receivables		
Plan member contributions	\$ 566,510	\$ 297,817
Employer contributions	1,229,933	403,141
Interest and dividends	425,123	374,012
Pending trades - sales	4,557,796	2,077,427
Total Receivables	6,779,362	3,152,397
Investments		
Cash and money market funds	3,550,467	6,597,667
Government obligations	26,569,182	23,209,646
State and municipal bonds	620,387	398,536
Corporate bonds and fixed income commingled funds	69,698,256	70,425,357
Common and preferred stocks and equity mutual funds	218,882,861	267,085,596
Real estate	18,438,077	20,026,836
Asset backed securities	5,439,890	5,531,711
Commodities	15,662,584	17,768,977
Private equity partnerships	20,505,570	14,573,844
Private credit partnerships	6,846,256	-
Investments held as collateral for securities lending	14,473,713	18,207,550
Total Investments	400,687,243	443,825,720
Total Assets	407,466,605	446,978,117
Liabilities		
Administrative expenses payable	123,668	106,367
Investment management fees payable	288,366	259,525
Pending trades - purchases	5,025,176	2,858,640
Amounts due broker under Securities lending agreement	14,473,713	18,207,550
Total Liabilities	19,910,923	21,432,082
Net Position Restricted for Pension Benefits	\$ 387,555,682	\$ 425,546,035

See accompanying notes to financial statements

City of Grand Rapids Police & Fire Retirement System

Statements of Changes in Fiduciary Net Position

<i>Year Ended December 31,</i>	2018	2017
Additions to Net Position		
Contributions:		
Plan members	\$ 5,313,127	\$ 5,114,841
Employer	<u>9,421,305</u>	<u>8,911,489</u>
Total Contributions	<u>14,734,432</u>	<u>14,026,330</u>
Investment Income (Loss):		
Interest and dividends	6,521,560	5,638,475
Net appreciation (depreciation) in fair value of investments	(30,280,912)	48,997,039
Securities lending income	<u>85,431</u>	<u>115,689</u>
Net investment income (loss)	(23,673,921)	54,751,203
Less investment expense	<u>(1,044,193)</u>	<u>(1,010,612)</u>
Net Investment Income (Loss), Less Investment Expense	<u>(24,718,114)</u>	<u>53,740,591</u>
Total Additions to Net Position (Net of Investment Losses)	<u>(9,983,682)</u>	<u>67,766,921</u>
Deductions from Net Position		
Benefits	27,404,159	24,813,135
Administrative expenses	<u>602,512</u>	<u>580,690</u>
Total Deductions From Net Position	<u>28,006,671</u>	<u>25,393,825</u>
Net Increase (Decrease) in Net Position	(37,990,353)	42,373,096
Net Position Restricted for Pension Benefits, Beginning of year	<u>425,546,035</u>	<u>383,172,939</u>
Net Position Restricted for Pension Benefits, End of year	<u><u>\$ 387,555,682</u></u>	<u><u>\$ 425,546,035</u></u>

See accompanying notes to financial statements.

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Notes to Financial Statements

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

1. Summary of Significant Accounting Policies

Reporting Entity

The City of Grand Rapids (the City) sponsors the City of Grand Rapids Police and Fire Retirement System (the System), which is a contributory single-employer retirement plan. The System, which is administered by the System's Board of Trustees, is a defined benefit plan. The System provides retirement, disability and survivor benefits to plan members and beneficiaries.

The System is an independent trust qualified under applicable provisions of the Internal Revenue Code (IRC) and is an independent entity (separate and distinct from the employer/plan sponsor) as required by: (1) state law and (2) IRC provisions setting forth qualified plan status. The Trustees of the plan have fiduciary obligations and legal liability for any violations of fiduciary duties as independent Trustees. There are seven Trustees: one elected by Police members, one elected by Fire members, one member of the City Commission to be appointed by the City Commission, one person appointed by the Mayor, two persons appointed by the City Commission and one person appointed by the City Commission from a list of not less than four (4) eligible persons submitted jointly by the Police and Fire members.

The financial statements of the System are included in the basic financial statements of the City of Grand Rapids as a Pension Trust Fund. The assets of the Pension Trust Fund include no securities or loans to the City or any other related party.

Basis of Accounting

The System's financial statements are prepared using the accrual basis of accounting. Employer contributions are recognized when due according to the formal commitment made by the City to provide the contributions. Plan member contributions are recognized when due. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

Methods Used to Value Investments

Investments are reported at estimated fair value. Short-term investments are reported at cost, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. For private equity partnerships, private credit partnerships, commodities funds, real estate funds, and fixed income commingled funds, values are based on net asset values provided by underlying investment managers and/or their administrators.

Use of Estimates

The preparation of the System's financial statements in conformity with generally accepted accounting principles requires management to make significant estimates and assumptions that affect the reported amounts of net position available for benefits at the date of the financial statements. Significant estimates are made for investments, the actuarial present value of accumulated plan benefits as of the benefit information date, the changes in net position available for benefits during the reporting period and, when applicable, the disclosures of contingent assets and liabilities at the date of the financial statements. Actual results could differ from those estimates.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

Risks and Uncertainties

System contributions and the actuarial present value of accumulated plan benefits are calculated based on certain assumptions pertaining to interest rates, inflation rates and employee demographics, all of which are subject to change. Investments are exposed to various risks, such as interest rate, market and credit risks. Due to uncertainties inherent in the estimations and assumptions process and the level of uncertainty related to changes in the value of investments, it is possible that changes in these estimates, assumptions and risks in the near term would be material to the financial statements.

Investment Income

Investment income is comprised of interest and dividends, net appreciation or depreciation in fair value of investments, securities lending income, and is net of investment expenses paid. Certain investment fees are deducted directly from the investment portfolios and net with preceding income items. The investment fees deducted directly from the investment portfolios amounted to \$875,713 for the fiscal year ending December 31, 2018.

2. Plan Description and Contribution Information

Plan Description

The System is a single-employer, defined benefit pension plan, which provides retirement and disability benefits to plan members and beneficiaries. Benefits are established or amended via collective bargaining between the City and System members. Benefit provisions are outlined in the City's ordinance and administered by Trustees. Eligible members consist of all uniformed police and fire staff who are regularly employed by the City. Benefit provisions are established and amended by City ordinance and provide for either a 13th Check or an annual escalator increase to each member's retirement allowance subsequent to his/her retirement date. The adjustment is a 1% non-compounding escalator for Police members (1.5% for Fire members). The specified waiting period is two years for firefighters and the Fire Chief. The specified waiting period is five years for the Police Chief, Deputy Police Chief, and Police members. Eligibility for the escalator depends upon the member's bargaining unit and termination date. Annual post-retirement benefit increases are paid to eligible groups as described below:

Covered Group	Termination Date
Fire Chief	On or after January 1, 2016
Firefighters, except Fire Chief	On or after July 1, 2007
Police Chief and Deputy Police Chief	On or after January 1, 2016
Police Officers	On or after December 17, 2008
Police Command	On or after February 19, 2010

For members not eligible for automatic post-retirement increases, one-half of net investment income over 8% which is attributable to retired life assets is distributed annually (in January) to retired members and beneficiaries who have been on the retirement rolls for 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. Subsequent to the calculations above, the benefit so calculated for Chief of Police, Deputy Chief, Police Command, Police Officers and Sergeants, Firefighters, and beneficiaries having had at least 10 years of service under any bargaining unit shall be increased by twenty percent.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

Eligibility

An eligible employee becomes a participant in the System as of his or her date of permanent employment. The System provides for 100% vesting in System benefits with 10 years of credited service. Fire members may elect to retire after attaining age 55 and completing 10 years of service, or upon attainment of their credited service cap. Police members may elect to retire after attaining age 50 and completing 10 years of service. The yearly allowance, payable monthly for life to the retired member, equals 2.8% of the member's final average compensation times years and months of credited service, up to the applicable allowance cap. Fire members hired on or after January 10, 2012 will have a 2.0% multiplier for the first five years of employment and will have an option between four-and-a-half years and five years of employment to irrevocably elect to increase his/her benefit multiplier to 2.2%, 2.4%, 2.6% or 2.8% for all future credited service after the first five years. If no election is made by such Fire member prior to his/her five-year employment anniversary date, then all credited service shall be calculated using a 2.0% multiplier. Police members hired on or after December 20, 2011 will have a 2.0% multiplier for the first five years of employment and will have an option between four and five years of employment to irrevocably elect to increase his/her benefit multiplier to 2.2%, 2.4%, 2.6% or 2.8% for all future credited service after the first five years. If no election is made by such Police member prior to his/her five-year employment anniversary date, then all credited service shall be calculated using a 2.0% multiplier. If a Police Command member is promoted into the unit from the Police Officers and Sergeants unit and has already elected a higher multiplier, or defaulted to a 2.0% multiplier for all service, then that election or default shall be applicable for service earned while in the Command unit as well. For purposes of benefit calculations, the final average compensation is based on the member's three highest consecutive compensated calendar years of credited service, provided no such rates of salary occur in a calendar year after the calendar year in which the employee attains the number of years of credited service which, when multiplied by the applicable benefit multiplier, equals the allowance cap, increased by 10.2% for Fire members and 13.2% for Police members for the period July 1, 2018 to December 31, 2018, and increased by 9.8% for Fire members and 12.6% for Police members for the period July 1, 2017 to June 30, 2018, and increased by 9.2% for Fire members and 12.1% for Police members for the period January 1, 2017 to June 30, 2017.

At December 31, 2018 and 2017, the System's membership consisted of the following:

<i>December 31,</i>	2018	2017
Retirees and beneficiaries receiving pension benefits	710	677
Terminated plan members entitled to but not receiving benefits	32	32
Active plan members	466	488
Total	1,208	1,197

Contributions

The City is required by City ordinance to contribute at an actuarially determined rate, calculated to be 23.59% of active member payroll for the period July 1, 2017 through June 30, 2018 and 24.79% for the period July 1, 2018 through December 31, 2018. The required rate was calculated to be 23.27% for the period January 1, 2017 through June 30, 2017. Plan member contributions, which are required by ordinance, are based on compensation. Contributions currently range from 9.86% to 10.89% of regular compensation paid by the City, depending on the bargaining unit, benefit multiplier chosen, and funding level of the System. These contributions are 100% vested. Plan members retain the right upon termination to withdraw their contributions plus regular interest, as defined by City Code, in lieu of any pension rights they may have.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

Legally Required Reserves

The System maintains a member deposit fund, which is used to accumulate contributions made by plan members and related accrued interest. As detailed in City ordinance, the fund is legally required to distribute individual employee contributions and related interest upon request by a terminated plan member. The balance in the member deposit fund at December 31, 2018 and 2017 was \$46,610,797 and \$44,902,221, respectively.

3. Deposits and Investments

The investments of the System are designed to comply with requirements of the State of Michigan, which has numerous investment limitations depending on the type of investment. The investment policy adopted by the Board is in accordance with state law and has authorized investments according to Michigan Public Act 314 of 1965, as amended. The most significant requirements as they impact the System are as follows:

1. Investments in stock and global securities (securities traded outside of the United States) are limited to 70.0% of the System's assets; investments in the stock of any one corporation are limited to 5.0% of the System's assets. Per the investment policy, the total plan target weight for domestic equity is 17.75% and the total plan target weight for the non-U.S. equity is 17.75%. The style factor breakdown is as follows: Active Core - 4.45%; Passive/Index - 11.35%; and Enhanced Indexing - 1.95%. The size factor breakdown is as follows: large stocks - 13.30% and small stocks - 4.45%.
2. Investments in real estate are limited to 10.0% of the System's assets. Per the investment policy, the total plan target weight for global real estate investments is 5.0%.
3. Investments in state and local government obligations are limited to 5.0% of the System's assets.

The following was the Board's adopted asset allocation policy as of December 31, 2018 and 2017:

<i>Asset Class</i>	<u>Target Allocation</u>	
	2018	2017
U.S. equity	17.75%	22.50%
Fixed income	24.50	25.00
Non-U.S. equity	10.25	15.00
American Depository Receipts	7.50	7.50
Real estate	5.00	5.00
Master Limited Partnerships	5.00	5.00
Treasury Inflation Protected Securities	5.00	10.00
Private equity	5.00	5.00
Commodities	5.00	5.00
Private Credit	5.00	0.00
Global Low Volatility	10.00	0.00

The Board of Trustees voted at the May 17, 2017 Joint Board meeting to further diversify the asset allocation per the private equity pacing model recommendation provided by the System's investment consultant, Wilshire Associates. The portfolio was restructured to commit an additional \$6.0 million to the Adams Street Partners 2017 Global Fund, which began in June 2017. The Board of Trustees voted at the Joint Board meeting on August 15, 2018 to allocate 5.0% of the assets (roughly \$21.0 million) to a new investment account in private credit with 50 South Capital Advisors

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

and Grosvenor Capital Management. The Board of Trustees voted at the Joint Board meeting on November 14, 2018 to allocate 10.0% (roughly \$41.0 million) to a new investment account in global low volatility with BlackRock.

For years ended December 31, 2018 and 2017, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was -5.75% and 14.44% respectively. The money-weighted rate of return expresses investment performance net of investment expense, adjusted for the changing amounts actually invested.

The System's cash and investments are subject to several types of risk, which are examined in more detail below.

Custodial Credit Risk

Custodial credit risk for investments is the risk that in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of investment or collateral securities that are in the possession of an outside party. This portfolio will minimize custodial credit risk by limiting investments to those permitted by Michigan Public Act 314 of 1965, as amended, which include: (a) United States Treasury and Agency; (b) Mortgages (Collateral and CMOs); (c) Corporate Bonds (industrial, finance, asset-backed, utilities, telephone and Yankee); (d) Derivatives (futures, swaps, option contracts on the S&P 500 Index and U.S. Interest Rates, and futures and option contracts on U.S. Treasury and Agency securities); (e) American Depository Receipts; (f) Non-Dollar Bonds; (g) Emerging Market Debt; (h) Cash equivalent investments (including repurchase agreements); (i) Short-term investment funds; (j) International Depository Receipts; (k) Global Depository Receipts; (l) Convertible Bonds; (m) Open and Closed-End country funds; and (n) Warrants.

In addition, the System will conduct business only with investment management firms that will: comply with all relevant provisions contained in Michigan Public Act 314 of 1965, as amended; support the overall investment policies of the System; understand and accept their designated "role" within the System's investment structure; construct a portfolio of securities that reflect the execution of their assigned investment strategy; and adhere to the guidelines of this document and/or any additional written instructions that amend the Investment Policy Statement. As of December 31, 2018 and 2017, no deposits or investments were exposed to custodial credit risk.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. This portfolio structures its fixed income allocation to be approximately neutral in duration and interest rate risk to that of the benchmark (Barclays Aggregate Index). This should mitigate the relative over- or under-performance of the fixed income composite as a result of changing interest rates.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

As of December 31, 2018, the System had the following investments and maturities.

	Fair Value	Less Than 1 Year	1-6 Years	6-10 Years	More Than 10 Years	No Maturity
Equities						
Common and preferred stocks and equity mutual funds	\$ 218,882,861	\$ -	\$ -	\$ -	\$ -	218,882,861
Private equity partnerships	20,505,570	-	-	-	-	20,505,570
Private credit partnerships	6,846,256	-	-	-	-	6,846,256
Total	246,234,687	-	-	-	-	246,234,687
Fixed Income						
Government obligations	26,569,182	-	6,338,754	5,535,931	14,694,497	-
State and municipal bonds	620,387	-	45,645	261,958	312,784	-
Corporate bonds and fixed income commingled funds	69,698,256	1,863,023	7,689,360	54,424,969	5,720,904	-
Asset-backed securities	5,439,890	2,502	915,508	368,306	4,153,574	-
Total	102,327,715	1,865,525	14,989,267	60,591,164	24,881,759	-
Other						
Cash and money market funds	3,550,467	3,550,467	-	-	-	-
Real estate	18,438,077	-	-	-	-	18,438,077
Commodities	15,662,584	-	-	-	-	15,662,584
Investments held as collateral for securities lending	14,473,713	14,473,713	-	-	-	-
Total	52,124,841	18,024,180	-	-	-	34,100,661
Grand Total	\$ 400,687,243	\$ 19,889,705	\$ 14,989,267	\$ 60,591,164	\$ 24,881,759	\$ 280,335,348

As of December 31, 2017, the System had the following investments and maturities.

	Fair Value	Less Than 1 Year	1-6 Years	6-10 Years	More Than 10 Years	No Maturity
Equities						
Common and preferred stocks and equity mutual funds	\$ 267,085,596	\$ -	\$ -	\$ -	\$ -	267,085,596
Private equity partnerships	14,573,844	-	-	-	-	14,573,844
Total	281,659,440	-	-	-	-	281,659,440
Fixed Income						
Government obligations	23,209,646	3,541	5,131,132	4,018,619	14,056,354	-
State and municipal bonds	398,536	-	50,833	-	347,703	-
Corporate bonds and fixed income commingled funds	70,425,357	1,416,531	8,671,805	55,320,429	5,016,592	-
Asset-backed securities	5,531,711	-	812,225	650,609	4,068,877	-
Total	99,565,250	1,420,072	14,665,995	59,989,657	23,489,526	-
Other						
Cash and money market funds	6,597,667	6,597,667	-	-	-	-
Real estate	20,026,836	-	-	-	-	20,026,836
Commodities	17,768,977	-	-	-	-	17,768,977
Investments held as collateral for securities lending	18,207,550	18,207,550	-	-	-	-
Total	62,601,030	24,805,217	-	-	-	37,795,813
Grand Total	\$ 443,825,720	\$ 26,225,289	\$ 14,665,995	\$ 59,989,657	\$ 23,489,526	\$ 319,455,253

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The fixed income portfolio invests in both investment grade bonds and high yield bonds. However, the overall credit rating for the composite is not to be below an “A” rating. At December 31, 2018 and 2017, the System held debt investments with the following credit ratings.

	December 31,	
	2018	2017
S&P AAA	\$ 2,540,665	\$ 2,578,412
S&P AA	2,452,201	1,246,016
S&P A	58,881,180	60,850,263
S&P BBB	8,526,691	8,083,563
S&P BB	95,500	193,938
S&P B	215,657	209,250
S&P CCC	-	383,503
S&P CC	313,426	-
S&P D	11,961	47,434
Not subject to credit risk	25,925,276	22,482,148
Unrated	3,365,158	3,490,723
	<u>\$ 102,327,715</u>	<u>\$ 99,565,250</u>

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the System’s investment in a single issuer. It is the System’s policy that no single holding will represent more than 5% of the total fund. As of December 31, 2018 and 2017, no single holding within this portfolio represented more than 5% of the total fund.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. In general, the foreign currency exposure resulting from international investments is not hedged. This exposes the portfolio to foreign currency risk, which is not expected to harm or help the performance of the fund in a significant way over the long-term.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

As of December 31, 2018 and 2017, the System had the following foreign investments:

<i>December 31, 2018</i>	Amount (currency in U.S. dollar)
Common and preferred stocks and equity mutual funds	\$ 81,556,514
Private equity partnerships	9,226,312
Private credit partnerships	6,146,256
Government obligations	290,690
Corporate bonds and fixed income commingled funds	7,316,239
Total	\$ 104,536,011
<i>December 31, 2017</i>	Amount (currency in U.S. dollar)
Common and preferred stocks and equity mutual funds	\$ 101,574,182
Private equity partnerships	5,671,896
Government obligations	97,500
Corporate bonds and fixed income commingled funds	8,039,631
Total	\$ 115,383,209

Securities Lending Risk

As of December 31, 2018, the System had the following investment types on loan for securities lending purposes, and received the following cash collateral for those loans:

<i>Investment Type</i>	Fair Value of Loaned Securities Collateralized by Cash Collateral	Cash Collateral
U.S. corporate fixed	\$ 2,086,935	\$ 2,124,789
U.S. equities	5,092,901	5,212,330
U.S. government fixed	7,019,051	7,136,594
Total	\$ 14,198,887	\$ 14,473,713

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

As of December 31, 2017, the System had the following investment types on loan for securities lending purposes, and received the following cash collateral for those loans:

<i>Investment Type</i>	Fair Value of Loaned Securities Collateralized by Cash Collateral	Cash Collateral
U.S. corporate fixed	\$ 2,923,557	\$ 2,981,152
U.S. equities	8,653,651	8,872,177
U.S. government fixed	6,236,951	6,354,221
Total	\$ 17,814,159	\$ 18,207,550

Michigan Public Act 314 of 1965, as amended, permits, and Trustees have implemented, a securities lending program whereby the System, through The Northern Trust Company, lends its securities to broker-dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future. The System has authorized The Northern Trust Company to utilize the Core U.S.A. Collateral Section in which all collateral is in U.S. dollars only and available to participating lenders who are domiciled or reside in the U.S.A. The System only receives cash collateral. Initial collateral levels will not be less than 102% of the market value of the borrowed securities, or not less than 105% if the borrowed securities and the collateral are denominated in different currencies.

The Northern Trust Company will indemnify the System if it is unable to recover borrowed securities and distributions made during the term of the loan or loans with respect to those securities as a result of The Northern Trust Company's failure to: (1) make a reasonable determination of the creditworthiness of a borrower, (2) demand adequate and appropriate collateral on a prompt and timely basis, perfect a security interest, obtain equivalent rights in the collateral or maintain control of the collateral, or (3) otherwise perform its duties and responsibilities under its agreement with the System or applicable law.

All securities loans can be terminated on demand by either the System or The Northern Trust Company and are subject to the performance by both parties of any of their respective obligations that remain outstanding at the time of termination. Upon termination of this program by either party, The Northern Trust Company shall terminate all outstanding loans of the System's securities and shall make no further loans. There are no restrictions on the amount of the loans that can be made. Cash collateral may also be invested separately in "term loans," in which case the investments match the loan term. These loans can be terminated on demand either by lender or borrower.

Fair Value Measurements

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs are inputs - other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Finally, Level 3 inputs are unobservable and are based on estimates and assumptions. These levels are determined by the System's investment consultant. These are determined at the fund level based on a review of the investment's class, structure, and what kind of securities are held in the funds. The investment consultant will request the information from the fund manager if necessary.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

The System had the following fair value measurements as of December 31, 2018 and 2017:

Investments Measured at Fair Value

<i>December 31, 2018</i>	Level 1	Level 2	Level 3	Total
Government obligations	\$ 26,569,182	\$ -	\$ -	\$ 26,569,182
State and municipal bonds	620,387	-	-	620,387
Corporate bonds and fixed income commingled funds	17,915,852	51,782,404	-	69,698,256
Common and preferred stocks and equity mutual funds	44,844,884	174,037,977	-	218,882,861
Real estate	-	18,438,077	-	18,438,077
Asset backed securities	5,439,890	-	-	5,439,890
Commodities	-	15,662,584	-	15,662,584
Private equity partnerships	-	-	20,505,570	20,505,570
Private credit partnerships	-	-	6,846,256	6,846,256
Investments held as collateral for securities lending	14,473,713	-	-	14,473,713
	\$ 109,863,908	\$ 259,921,042	\$ 27,351,826	397,136,776
Investments measured at amortized cost -				
Cash and money market funds				3,550,467
Total Investments				\$ 400,687,243

Investments Measured at Fair Value

<i>December 31, 2017</i>	Level 1	Level 2	Level 3	Total
Government obligations	\$ 23,209,646	\$ -	\$ -	\$ 23,209,646
State and municipal bonds	398,536	-	-	398,536
Corporate bonds and fixed income commingled funds	18,104,528	52,320,829	-	70,425,357
Common stocks and equity mutual funds	121,425,555	145,660,041	-	267,085,596
Real estate	-	20,026,836	-	20,026,836
Asset backed securities	5,531,711	-	-	5,531,711
Commodities	-	17,768,977	-	17,768,977
Private equity partnerships	-	-	14,573,844	14,573,844
Investments held as collateral for securities lending	18,207,550	-	-	18,207,550
	\$ 186,877,526	\$ 235,776,683	\$ 14,573,844	437,228,053
Investments measured at amortized cost -				
Cash and money market funds				6,597,667
Total Investments				\$ 443,825,720

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

Fund Investments - Mutual Funds & Separately Managed Accounts (SMAs)

An open-ended mutual fund, a registered investment company, produces a daily net asset value (NAV) that is validated with a sufficient level of observable activity (i.e., purchases and sales at NAV) to support classification of the fair value measurement as Level 1 in the fair value hierarchy. In this case, the NAV represents the exit value of the security at the measurement date. The primary rationale to support the classification of Mutual Funds as Level 1 in the fair value hierarchy are: (1) the investments in the funds are required to be measured at fair value (SEC regulated), (2) the NAV is unadjusted and is in all cases the transaction price for purchases and sales (the NAV represents the exit value of the security at the measurement date), (3) there are no restrictions on redemptions and (4) the NAV is made publicly available daily. The System's investment consultant also typically views SMAs as being reasonably considered Level 1 in the fair value hierarchy. The Fund Investment provides look-through capability to the underlying holdings, which can then be valued at fair market prices with strong liquidity.

Fund Investments - Commingled Funds & Trusts

Commingled Funds and Common Trust Funds do not all meet these criteria listed above for mutual funds. A fund administrator typically does not have the transparency into valuation methodology and valuation frequency of each of these pooled investment vehicles to make an accurate appraisal of whether the NAV does represent the exit value of the fund at each measurement date. For this reason, the System's investment consultant takes a conservative approach with the default position being to consider these investments as Level 2 in the fair value hierarchy.

The NAV of an open-ended fund, whether a registered investment company fund, such as a mutual fund, or certain alternative investment funds, such as a hedge fund, serves as the basis for subscription and redemption transactions for investors in such funds. For investments in funds for which the underlying assets and liabilities are required to be measured at fair value, and where NAV is available, the NAV is generally the most appropriate starting point when determining the fair value measurement for an interest in such fund. However, when valuing such an investment, the holder must estimate the fair value of the interest held, which at times may be different from a value based solely on the NAV of the fund. The holder should also consider various factors including, but not limited to, the attributes of the interest held, including any restrictions or illiquidity on the disposition of the interest, and the holders' requirements to understand and accept the valuations provided by the fund (or modify them if appropriate), to determine the fair value of the interest itself. Depending on the facts and circumstances, the NAV may need to be adjusted depending upon the rights and obligations of the ownership interest and/or other factors. Furthermore, any adjustments to NAV based on unobservable inputs may result in the fair value measurement being categorized as a Level 3 measurement, if those inputs are significant to the overall fair value measurement.

Private Equity

The valuation of nonpublic private equity investments requires significant management judgment due to the absence of quoted market prices, inherent lack of liquidity and the long-term nature of such assets. As such, private equity investments are often valued initially based upon cost. Each quarter, valuations are reviewed utilizing available market data to determine if the carrying value of these investments should be adjusted. Such market data primarily includes observations of the trading multiples of public companies considered comparable to the private companies being valued. Valuations are adjusted to account for company-specific issues, the lack of liquidity inherent in a nonpublic investment and the fact that comparable public companies are not identical to the companies being valued. Such valuation adjustments are necessary because in the absence of a committed buyer and completion of due diligence similar to that performed in an actual negotiated sale process, there may be company-specific issues that are not fully known that may affect value.

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

In addition, a variety of additional factors are reviewed by management, including, but not limited to, financing and sales transactions with third parties, current operating performance and future expectations of the particular investment, changes in market outlook and the third-party financing environment. As a result of these characteristics, the System's investment consultant believes private equity investments should be included in Level 3 of the fair value hierarchy.

The Adams Street Partners agreement provides that the term of each partnership fund will begin on the initial closing date of the applicable partnership fund for a 12 - 15-year commitment. Generally, investors may not withdraw from the Global Fund, the feeder vehicles or a fund, except under very limited circumstances.

The Aberdeen Asset Management agreement provides for a 12 - 15-year commitment from the initial capital call. Limited partners may not withdraw from the fund, nor may they sell, transfer or assign their interests except with the consent of the General Partner.

Private Credit

Much like for private equity, the valuation of private credit investments requires significant judgement due to the absence of quoted market prices, inherent lack of liquidity, and the long-term nature of the assets. Factors that influence valuation include duration, credit score, time until maturity, whether the bond is callable, covenants, among others. Each quarter, valuations are reviewed utilizing available public and private market data to determine if the carrying value of these investments should be adjusted. Valuations are adjusted to account for company-specific issues, the lack of liquidity inherent in a nonpublic investment and the fact that comparable public companies are not identical to the companies being valued. Such valuation adjustments are necessary because in the absence of a committed buyer and completion of due diligence similar to that performed in an actual negotiated sale process, there may be company-specific issues that are not fully known that may affect value. As a result of these characteristics, the System's investment consultant believes private credit investments should be included in Level 3 of the fair value hierarchy.

4. Capital Funding Commitments

At December 31, 2018 the System had the following approximate amounts (in millions) outstanding on initial private equity commitments of \$22.5 million with Adams Street Partners and \$5.0 million with Aberdeen Asset Management. At December 31, 2017 the System had the following approximate amounts (in millions) outstanding on initial private equity commitments of \$16.5 million with Adams Street Partners and \$5.0 million with Aberdeen Asset Management.

	2018	2017
Adam Street Partners (2010)	\$ 0.6	\$ 0.6
Aberdeen Asset Management	0.2	0.5
Adams Street Partners (2013)	1.2	1.7
Adams Street Partners (2015)	2.3	4.6
Adams Street Partners (2017)	4.1	5.7

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

At December 31, 2018, the System had the following approximate amounts (in millions) outstanding on initial private credit commitments of \$14.0 million with Grosvenor Capital Management and \$7.0 million with 50 South Capital Advisors.

	2018	2017
Grosvenor Capital Management	\$ 7.8	\$ 0.0
50 South Capital Advisors	6.3	0.0

5. Net Pension Liability

Net Pension Liability

The components of the net pension liability at December 31, 2018 and 2017, were as follows:

December 31	2018	2017
Total pension liability	\$530,714,452	\$508,955,227
Plan fiduciary net position	387,555,682	425,546,035
Net Pension Liability	\$143,158,770	\$83,409,192
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	73.03%	83.61%

Actuarial Assumptions

The total pension liability was determined by an actuarial valuation as of December 31, 2018 and 2017, using the following actuarial assumptions, applied to all periods included in the measurement:

	2018	2017
Inflation	3.25% - wage inflation	3.25% - wage inflation
	2.50% price inflation	2.50% - price inflation
Salary Increases	3.25% - 20.25% including inflation	3.25% - 20.25% including inflation
Investment rate of return	7.15%	7.15%

Per the most recent experience study for the period December 1, 2009 - December 31, 2014, mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table projected to 2019 using the MP-2014 Mortality Improvement Scale as of December 31, 2015. Per the experience study for the period January 1, 2004 - December 31, 2009, they were based on the 1983 Group Annuity Male and Female Mortality Tables set back 3 years for males and 2 years for females.

Key Employee Incentive Program (KEIP)

Effective December 2016, participation in a Key Employee Incentive Program (KEIP) is open to any employee of the City of Grand Rapids Police and Fire Retirement System who attains service retirement eligibility and maintains a minimum leave accrual balance of 100 hours. A regular retirement benefit is computed for the member as of his/her KEIP election date based upon final average compensation (FAC), credited service and benefit multiplier as of this date. Monthly

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

payments equal to 75% of the computed monthly benefit are deposited into the KEIP Reserve Account (KRA) on behalf of this member. Interest is credited monthly to this balance in the KRA at the rate of 3%, compounded annually. Employer and member contributions shall cease as of the member's KEIP election date. The members may remain in the KEIP for up to five years and then must cease participation in the KEIP. The member's monthly benefit at retirement will be the original monthly payment determined at the KEIP election date plus any applicable post-retirement benefit increases. As of December 31, 2018, there were 21 members in the KEIP program, and the balance of the amount held by the pension plan pursuant to the KEIP program was \$972,312. As of December 31, 2017, there were eight members in the KEIP program, and the balance of the amount held by the pension plan pursuant to the KEIP program was \$389,832.

Long-Term Expected Rate of Return

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Based on information provided by the System's investment advisor, capital market expectations for each major asset class that was included in the plan's current asset allocation as of January 2019 were used; the best estimates for the long-term expected return are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Return 10-Year	Long-Term Expected Return 20-Year	Long-Term Expected Return 30-Year
U.S. equity	17.75%	7.00%	7.53%	7.70%
Non-U.S. equity	17.75%	7.75%	8.00%	8.08%
Core Fixed Income	24.50%	3.85%	4.58%	4.82%
Treasury Inflation Protected Securities	5.00%	3.00%	4.15%	4.53%
Real estate	5.00%	5.85%	6.63%	6.88%
Private equity	5.00%	10.05%	10.48%	10.62%
Commodities	5.00%	4.35%	5.05%	5.28%
Master Limited Partnerships	5.00%	8.40%	9.33%	9.63%
Private credit	5.00%	9.01%	8.76%	8.68%
Global low volatility	10.00%	7.39%	7.82%	7.96%
Cash	0.00%	0.00%	0.00%	0.00%
Total	100.00%	6.85%	7.39%	7.57%
Inflation		1.70%	2.23%	2.10%

City of Grand Rapids Police & Fire Retirement System

Notes to Financial Statements

Discount Rate

A single discount rate of 7.15% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on System investments of 7.15%. 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 System'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 System's net pension liability, calculated using a single discount rate of 7.15% as well as what the net pension liability would be if it were calculated using a single discount rate that is 100 basis points lower or 100 basis points higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption - December 31, 2018

	Current Single Discount		
	100 Basis Point Decrease	Rate Assumption	100 Basis Point Increase
	6.15%	7.15%	8.15%
Total Pension Liability	\$587,429,896	\$530,714,452	\$484,034,474
Plan Net Position	387,555,682	387,555,682	387,555,682
Net Pension Liability	\$199,874,214	\$143,158,770	\$ 96,478,792

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption - December 31, 2017

	Current Single Discount		
	100 Basis Point Decrease	Rate Assumption	100 Basis Point Increase
	6.15%	7.15%	8.15%
Total Pension Liability	\$568,383,072	\$508,955,227	\$459,538,770
Plan Net Position	425,546,035	425,546,035	425,546,035
Net Pension Liability	\$142,837,037	\$ 83,409,192	\$ 33,992,735

Required Supplementary Information

City of Grand Rapids Police and Fire Retirement System

Required Supplementary Information Schedule of Changes in the Employer's Net Pension Liability and Related Ratios

<i>Year ended December 31,</i>	2018	2017	2016*
Total Pension Liability			
Service cost	\$ 8,780,168	\$ 8,723,494	\$ 8,588,314
Interest on the total pension liability	35,724,491	34,356,314	32,676,162
Changes in benefit terms	-	-	114,084
Difference between expected and actual experience	4,658,725	3,265,534	7,264,098
Assumption changes	-	5,497,995	1,551,086
Benefit payments	(27,117,475)	(24,794,055)	(29,338,856)
Refunds	(286,684)	(19,080)	(21,606)
Net Change in Total Pension Liability	\$ 21,759,225	\$ 27,030,202	\$ 20,833,282
Total Pension Liability, beginning	\$ 508,955,227	\$ 481,925,025	\$ 461,091,743
Total Pension Liability, ending (a)	\$ 530,714,452	\$ 508,955,227	\$ 481,925,025
Plan Fiduciary Net Position			
Contributions - employer	\$ 9,421,305	\$ 8,911,489	\$ 7,166,351
Contributions - member	5,313,127	5,114,841	4,929,842
Pension plan net investment income (loss)	(24,718,114)	53,740,591	25,712,942
Benefit payments	(27,117,475)	(24,794,055)	(29,338,856)
Refunds	(286,684)	(19,080)	(21,606)
Pension plan administrative expense	(602,512)	(580,690)	(542,277)
Net Change in Plan Fiduciary Net Position	37,990,353	42,373,096	7,906,396
Plan Fiduciary Net Position, beginning	425,546,035	383,172,939	375,266,542
Plan Fiduciary Net Position, ending (b)	\$ 387,555,682	\$ 425,546,035	\$ 383,172,939
Net Pension Liability - Ending (a) - (b)	\$ 143,158,770	\$ 83,409,192	\$ 98,752,086
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.03%	83.61%	79.51%
Covered Payroll	\$ 38,122,879	\$ 38,919,488	\$ 38,129,771
Net Pension Liability as a Percentage of Covered Payroll	375.52%	214.31%	258.99%

*Totals may not add up due to rounding.

City of Grand Rapids Police and Fire Retirement System

Required Supplementary Information Schedule of Changes in the Employer's Net Pension Liability and Related Ratios

<i>Year ended December 31,</i>	2015	2014
Total Pension Liability		
Service cost	\$ 7,482,069	\$ 7,794,219
Interest on the total pension liability	29,375,231	28,440,421
Changes in benefit terms	-	-
Difference between expected and actual experience	16,663,107	2,978,624
Assumption changes	35,683,769	-
Benefit payments	(32,070,933)	(21,079,038)
Refunds	(11,369)	(24,749)
Net Change in Total Pension Liability	\$ 57,121,874	\$ 18,109,477
Total Pension Liability, beginning	\$ 403,969,869	\$ 385,860,392
Total Pension Liability, ending (a)	\$ 461,091,743	\$ 403,969,869
Plan Fiduciary Net Position		
Contributions - employer	\$ 5,630,297	\$ 6,331,848
Contributions - member	4,557,165	4,563,692
Pension plan net investment income (loss)	(9,083,712)	29,375,836
Benefit payments	(32,070,933)	(21,079,038)
Refunds	(11,369)	(24,749)
Pension plan administrative expense	(581,364)	(523,607)
Net Change in Plan Fiduciary Net Position	(31,559,916)	18,643,982
Plan Fiduciary Net Position, beginning	406,826,458	388,182,475
Plan Fiduciary Net Position, ending (b)	\$ 375,266,542	\$ 406,826,458
Net Pension Liability - Ending (a) - (b)	\$ 85,825,201	\$ (2,856,589)
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	81.39%	100.71%
Covered Payroll	\$ 36,827,593	\$ 35,710,964
Net Pension Liability as a Percentage of Covered Payroll	233.05%	(8.00)%

GASB 67 was implemented for the plan year ending December 31, 2014; this schedule is being built prospectively. Ultimately, 10 years of data will be presented.

City of Grand Rapids Police and Fire Retirement System

Required Supplementary Information Schedule of Employer Contributions

FY Ending December 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2009	\$0	\$0	\$0	\$33,490,487	0.00%
2010	\$3,709,786	\$3,709,786	\$0	\$34,665,767	10.70%
2011	\$7,851,051	\$7,851,051	\$0	\$34,566,692	22.71%
2012	\$8,194,227	\$8,194,227	\$0	\$33,970,131	24.12%
2013	\$7,531,566	\$7,531,566	\$0	\$33,110,530	22.75%
2014	\$6,331,848	\$6,331,848	\$0	\$35,710,964	17.73%
2015	\$5,630,297	\$5,630,297	\$0	\$36,827,593	15.29%
2016	\$7,166,351	\$7,166,351	\$0	\$38,129,771	18.79%
2017	\$8,911,489	\$8,911,489	\$0	\$38,919,488	22.90%
2018	\$9,421,305	\$9,421,305	\$0	\$38,122,879	24.71%

Methods and Assumptions Used to Determine Contribution Rates

Valuation Date	Actuarially determined contribution rates are calculated as of December 31, two years prior to the end of the fiscal year in which contributions are reported.
Actuarial Cost Method	Individual Entry Age
Amortization Method	Level Percentage of Payroll, Closed (was level percent open for plan years ending 12/31/09 - 12/31/12)
Remaining Amortization Period	Multiple periods (was 30 years for the plan years ending 12/31/09-12/31/12 and 12/31/15; was 25 years for the plan year ending 12/31/13; was 24 years for the plan year ending 12/31/14)
Asset Valuation Method	5-Year Smoothed Market
Inflation	3.25% -- wage inflation, 2.50% -- price inflation (inflation was at 4.00% for the plan year ending 12/31/09; and inflation was at 3.50% wage inflation and 2.75% price inflation for plan years ending 12/31/10 - 12/31/15)
Salary Increases	3.25% to 20.25% including inflation (was 4.0% to 21.0% for the plan year ending 12/31/09; and 3.50% to 20.50% for plan years ending 12/31/10 - 12/31/15)
Investment Rate of Return	7.15% (was 7.50% for the plan year ending 12/31/09; was blended rate of 7.36% for the plans years ending 12/31/10 - 12/31/14; was 7.25% as of December 31, 2015 and 2016)

City of Grand Rapids Police and Fire Retirement System

Required Supplementary Information Schedule of Employer Contributions

Cost-of-Living Adjustments	<p>Ad hoc “13th check” tied to plan investments for benefit recipients who do not have an automatic benefit increase.</p> <p>1.5% simple escalator for firefighters retired on or after July 1, 2007 with commencement delayed 2 years after retirement.</p> <p>1.5% simple escalator for Fire Chief retired on or after January 1, 2016 with commencement delayed 2 years after retirement.</p> <p>1.0% simple escalator for police command officer retired on or after February 19, 2010 with commencement delayed 5 years after retirement.</p> <p>1.0% simple escalator for police officers and sergeants retired on or after December 17, 2008 with commencement delayed 5 years after retirement</p> <p>1.0% simple escalator for Police Chief and Deputy Police Chief retired on or after January 1, 2016 with commencement delayed 5 years after retirement.</p>
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	RP-2014 Healthy Annuitant Mortality Table projected to 2019 using the MP-2014 Mortality Improvement Scale as of December 31, 2015. Prior to that, the 1983 Group Annuity Male and Female Mortality Tables set back 3 years for males and 2 years for females was used.

City of Grand Rapids Police and Fire Retirement System
Required Supplementary Information
Schedule of Investment Returns
Annual Money-Weighted Rate of Return, Net of Investment Expense
Last Nine Years

2018	2017	2016	2015	2014	2013	2012	2011	2010
-5.75%	14.44%	7.22%	(2.27)%	7.82%	17.19%	15.21%	0.46%	17.23%

This schedule is being built prospectively. Ultimately, 10 years of data will be presented.

City of Grand Rapids Police and Fire Retirement System

Required Supplementary Information Schedule of the Employer's Net Pension Liability

<u>FY Ending December 31,</u>	<u>Total Pension Liability</u>	<u>Plan Fiduciary Net Position</u>	<u>Net Pension Liability</u>	<u>Plan Fiduciary Net Position as a % of Total Pension Liability</u>	<u>Covered Payroll</u>	<u>Net Pension Liability as a % of Covered Payroll</u>
2014	\$403,969,869	\$406,826,458	\$(2,856,589)	100.71%	\$35,710,964	(8.00)%
2015	\$461,091,743	\$375,266,542	\$85,825,201	81.39%	\$36,827,593	233.05%
2016	\$481,925,025	\$383,172,939	\$98,752,086	79.51%	\$38,129,771	258.99%
2017	\$508,955,227	\$425,546,035	\$83,409,192	83.61%	\$38,919,488	214.31%
2018	\$530,714,452	\$387,555,682	\$143,158,770	73.03%	\$38,122,879	375.52%

GASB 67 was implemented for the plan year ending December 31, 2014; this schedule is being built prospectively. Ultimately, 10 years of data will be presented.

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Internal Control and Compliance

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INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

June 5, 2019

Board of Trustees of the
City of Grand Rapids Police and Fire Retirement System
Grand Rapids, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the *City of Grand Rapids Police and Fire Retirement System* (the "System"), a pension trust fund of the City of Grand Rapids, Michigan, as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the System's basic financial statements, and have issued our report thereon dated June 5, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the Plan's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "Rehmann Johnson LLC". The signature is written in a cursive, flowing style.