YEAR OF RENEWAL

Comprehensive Annual Financial Report

For Fiscal Year Ended
June 30, 2020

PUBLIC EMPLOYEES RETIREMENT
ASSOCIATION OF MINNESOTA

PENSION TRUST FUNDS OF THE STATE OF MINNESOTA

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Public Employees Retirement Association of Minnesota

Pension Trust Funds of the State of Minnesota

Comprehensive Annual Financial Report

For the Fiscal Year Ended June 30, 2020

Executive Director
Doug Anderson

Prepared by PERA Finance Division.

Member of Government Finance Officers Association of the United States and Canada

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INTRODUCTORY SECTION

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Achievement Awards

Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Public Employees Retirement
Association of Minnesota**

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

June 30, 2019

Christopher P. Morrill

Executive Director/CEO

Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to Public Employees Retirement Association (PERA) for its comprehensive annual financial report for the fiscal year ended June 30, 2019. This was the 27th consecutive year that the government has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to GFOA to determine its eligibility for another certificate.

Government Finance Officers Association

Award for Outstanding Achievement in Popular Annual Financial Reporting

Presented to

Public Employees Retirement Association of Minnesota

For its Annual
Financial Report
for the Fiscal Year Ended

June 30, 2019

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council

Recognition Award for Administration 2020

Presented to

Minnesota Public Employees Retirement Association

In recognition of meeting professional standards for
plan administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle

Alan H. Winkle
Program Administrator

December 21, 2020

Dear Members, Annuitants, Beneficiaries, Governmental Employers, and Taxpayers:

On behalf of the Board of Trustees, I am pleased to present the Public Employees Retirement Association (PERA) Comprehensive Annual Financial Report (CAFR) for the year ended June 30, 2020. The report provides financial, investment, actuarial, statistical, and other related information about PERA and the pension plans it administers. The information is offered to help readers understand and make reasoned judgments about the sustainability of PERA's funds. Responsibility for the accuracy and completeness of the report rests with PERA’s management.

In their letter transmitting the CAFR to the Board, PERA’s managers note that FY2020 was a difficult year. From a strictly financial perspective, the biggest difficulty for PERA in FY2020 has been the market volatility and uncertainty created by the Coronavirus pandemic. Between February 19th and March 23rd, 2020, the stock market dropped by 34%. Although the markets have largely recovered, we will not be complacent. The effects of the pandemic are likely to include economic impacts that will affect individuals, communities and organizations like PERA for some time to come.

For example, recent widespread unemployment has the potential to create future tax collection problems for local governments. Local collections problems, in turn could cause reductions in local government workforces (as we saw after the Great Recession of 2007-2009). Reduced local government workforces could in turn could lead to a downturn in PERA contribution revenue.

Similarly, for years the rates of return on government bonds have been dropping; this trend affects the pricing and returns on all types of investments. As noted in management’s transmittal letter, PERA’s plans are “mature” and therefore plan funding is very sensitive to changes in investment returns. It is possible that low bond rates and economic uncertainty could lead to decreased economic activity and therefore, generally lower investment returns which could put adverse pressure on PERA’ funded status and ability to amortize the unfunded pension liability by 2048. The Board carefully considers these and all risks facing PERA’s plans.

PERA, its Board and employees are poised to meet the challenges. Even given the difficult financial conditions of FY2020, PERA's funded status declined only minimally, as seen in the table below:

Comparative Fiscal Year-end 2020 and 2019 Funded Ratios			
Cost Sharing Plans			
	General Plan	Police and Fire	Local Corrections
FY2019	80.2%	89.3%	98.7%
FY2020	79.1%	87.2%	96.7%
Y-O-Y Increase/ (Decrease)	-1.2%	-2.1%	-2.0%

PERA's Board of Trustees works closely with the Executive Director on understanding the financial variables affecting our plans and identifying ways to evolve the existing plan designs to ensure that all members are paid their benefits in-full and on-time now and in the future. As needed, changes that preserve our plans' sustainability, while also maintaining fairness and affordability, will be brought to the legislature.

Without a doubt, FY2020 created challenges, but we have met them head-on. Lessons learned this year will help us in the future. Within twenty years, if all assumptions are met, all of PERA's plans will be fully funded and benefits will be financed on a completely prepaid basis.

Thomas Stanley
President
PERA Board of Trustees

Letter of Transmittal

December 21, 2020

Board of Trustees
Public Employees Retirement Association
of Minnesota
60 Empire Drive, Suite 200 St.
Paul, Minnesota 55103

Dear President and members of PERA Board of Trustees:

On behalf of the management and staff of PERA, it is our pleasure to present the Public Employee Retirement Association's *Comprehensive Annual Financial Report* (CAFR) for the fiscal year ended June 30, 2020. The financial report is meant to provide useful information about the certainty, amount, and timing of PERA's cash flows to help our Board and other stakeholders make reasoned decisions about the safety and soundness of PERA's retirement plans.

To state the obvious, the Fiscal Year ended June 30, 2020 has been difficult. Global spread of the corona virus has caused wide-spread economic disruption. CAFR readers can see the negative financial effects in PERA's investment earnings for the year. However, PERA has made its pension payments in full and on-time not just during this past year, but through wars and recessions over the past 89 years. Corona virus and related economic disruption notwithstanding, PERA's statement of net position shows PERA's plans are strong. PERA's statement of changes in net position shows PERA has adequate, diverse, and reliable income streams to ensure that benefits will continue to be paid in-full and on-time while amortizing the unfunded pension debt accumulated in earlier years.

The Association's financial reports are prepared on the accrual basis of accounting in conformity with accounting principles generally accepted in the United States of America. The statements also comply with the reporting requirements of Minnesota State Statutes (MSS) 356.20. Management is responsible for the completeness and reliability of the information in this report. We believe the enclosed financial statements and disclosures are fairly presented in all material respects. We believe that PERA's internal accounting controls are sufficient to provide reasonable assurance regarding the safekeeping of the Association's assets and the fair presentation of the financial statements and related schedules.

The Office of the Legislative Auditor has issued an unmodified opinion on the Public Employees Retirement Association's Statement of Fiduciary Net Position as of June 30, 2020 and the related Statement of Changes in Fiduciary Net Position for the fiscal year then ended. The independent auditor's report is found at the front of the Financial Section of this report.

Management's Discussion and Analysis (MD&A) follows the independent auditor's report to provide a narrative introduction, overview, and analysis of PERA's basic financial statements. The MD&A complements this letter of transmittal and should be read in conjunction with it.

The Association

In 1931, two years after the stock market crash of 1929 and the start of The Depression, the Minnesota State Legislature created PERA "to provide for the retirement of their members and to provide funds for the beneficiaries of members in the event of death of a member" (MSS 356.001). Over the past eighty-nine years, PERA has expanded its pension umbrella to cover additional groups:

- In 1959 the Police and Fire Plan was opened for employees not covered by local relief associations.
- In 1968 the General Employee Plan coordinated with Social Security.
- In 1999 the Local Correctional Plan was opened for officers serving in city and county jails.
- And, from 2011-2015 the previously independent but financially distressed City of Minneapolis retirement plans were consolidated under PERA.

Currently PERA administers five pension plans each of which is accounted for separately:

- Three cost-sharing, multiple employer, defined benefit plans: the General Employees Plan; Police and Fire Plan; and Local Corrections Plan.
- One agent, multiple employer, defined benefit plan: the State Volunteer Firefighter Plan, and
- One defined contribution plan primarily for elected local officials.

PERA's mission for its members, its member's employers, and for the State as a whole is to:

- Administer and promote sustainable pension plans, and
- Provide services that members value

Services

Besides acting as trustee for retirement assets and making benefit payments to retirees and other recipients, PERA provides a variety of services to its members including but not limited to: individual benefit determinations, personal benefit statements, access to preretirement group counseling, and individual retirement benefit counseling. Members can also use the online MY PERA system to check their total accumulated contributions and service credits and use the benefit calculator to estimate their retirement benefits at various ages or dates. We provide educational videos and specialized publications with information on specific topics of interest to members via our website. PERA also staffs a call center from which members and other stakeholders can access information and receive immediate responses to questions.

Sustainability

The sustainability of PERA's retirement plans has three dimensions:

- Funding policies and practice;
- Investment policies and outcomes; and,
- Plan design

Funding

Two of PERA's central business values are:

- Pre-funding, which refers to the practice of setting aside sufficient financial assets during employees' careers to make the employers' promised payments after retirement or disability; and,
- Full funding, which means having sufficient assets on hand to satisfy the actuarially determined value of the total promised payments.

However, the values of prefunding and full funding are sometimes difficult to fully realize. In a fully funded plan the net fiscal position (net assets) of the pension trust would be equal to the "Total Pension Liability" calculated by the actuaries (see note 6). In fact, over eight decades, due to a variety of reasons, PERA's plans have accumulated an "unfunded" pension liability—debt owed for benefits that have already been earned but for which assets have not yet been set aside. Most Public Pension Plans have unfunded liabilities. Amortizing—paying off—that accumulated debt before 2048, the statutory amortization target date, and achieving full funding is one of PERA's strategic and statutory goals.

The pension equation in Management's Discussion and Analysis shows that PERA's principal sources of PERA's funds are contributions and investment income. In Fiscal Year 2020, combined employer and employee contributions for the three cost-sharing defined benefit plans totaled approximately $1.32 Billion. This was a modest $37 million (3%) increase over Fiscal 2019 contributions. FY2020 total investment income was approximately $1.31 Billion which was approximately $876 Million (40%) *less* investment income than booked in fiscal 2019.

Contributions

Contributions are determined by the total payroll of PERA-member employees multiplied by the contribution rates established by the legislature. Many government services are labor intensive. For examples, think of the work performed by police, or public utilities workers, or social workers. Because government services are often labor-intensive, and because the size of the total (local) government workforce is determined by independent decisions made at over 2,000 participating employers, the size of the total underlying government labor force is usually fairly predictable. Because the total workforce is fairly stable, the total payroll on which contributions are based is also stable and usually grows at a small but steady rate primarily from wage inflation.

Contribution rates applied to the underlying payroll are set by the legislature. PERA's board works collaboratively with stakeholders when necessary to suggest changes. However, the PERA Board does not control the rates.

Contributions are a stable and predictable source of funds. Nevertheless, PERA faces some risk because it could be difficult for the legislature to change rates quickly in response to sudden, adverse economic or business developments (such as the global recession in FY2007-9 or the current Covid pandemic). One of the reasons PERA's plans have accumulated an unfunded liability is the relatively slow response to external events that can sometimes cause contributions to fall below the Actuarially Determined Contribution (ADC). The levels and trend of contribution rates for the past three years are shown in Note No. 5 to the Financial Statements.

In Fiscal Year 2020,

- Combined employment (active, contribution-paying members) of the three cost sharing, defined benefit plans increased 202 persons (0.1%) from 169,469 FY2019 to 169,671 in FY2020. (Police and Fire actives increased by 262; General by 50; and Corrections *declined* by 110).
- Combined payroll of the three cost sharing, defined benefit plans increased by about $237 million (3.1%) from $7.749 Billion in FY2019 to $7.986 Billion in FY2020.
- Combined contributions increased by about $37 million (2.9%) from $1.257 Billion in FY2019 to $1.294 Billion in FY2020.

Non-employer Contributions

Non-employer contributions from the State of Minnesota represent a very small portion of PERA's total sources of funds. In Fiscal FY2020, the State provided support to PERA as follows:

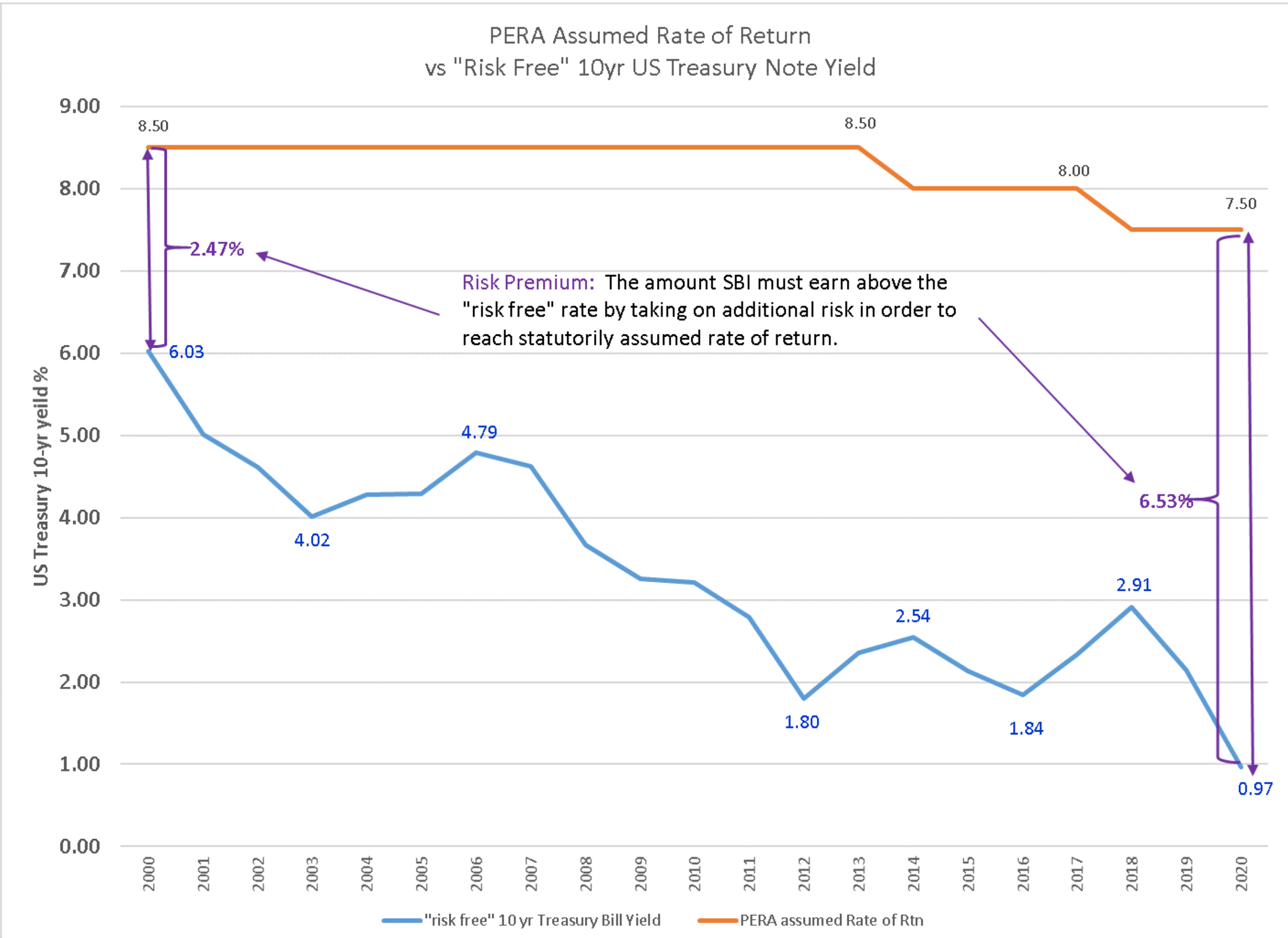
- $16 million to help fully fund the unfunded liability assumed by the General Employee Plan resulting from the merger with the Minneapolis Employees Retirement Fund (MERF).
- $13.5 million to help the Police and Fire plan reach full funding.
- State non-employer contributions were the same in FY2019 and FY2020.
- Total non-employer contributions from the State amounted to about 1% of PERA's total contributions.

Investment Income

Investment income (in most recent years) has been the largest source of funds for PERA's plans. As discussed in the MD&A, PERA's plans are mature and generally have negative net cash flow (before investment income). That is, annual cash in-flows from contributions are insufficient to cover out-flows for benefits and expenses and the difference must be made-up with investment income. Negative net cash flow is both expected and common in mature pension plans. Expectations for future negative net cash flows are exactly why pre-funding of pension plans is important.

Minnesota Statutes, (MSS Section 353.06), requires PERA to invest its funds through the Minnesota State Board of Investment (SBI). All investments undertaken by SBI are governed by the common law prudent person rule and other standards codified in Chapter 11A of the *Minnesota Statutes*. SBI has one overriding responsibility: to ensure that sufficient funds are available to finance promised retirement benefits.

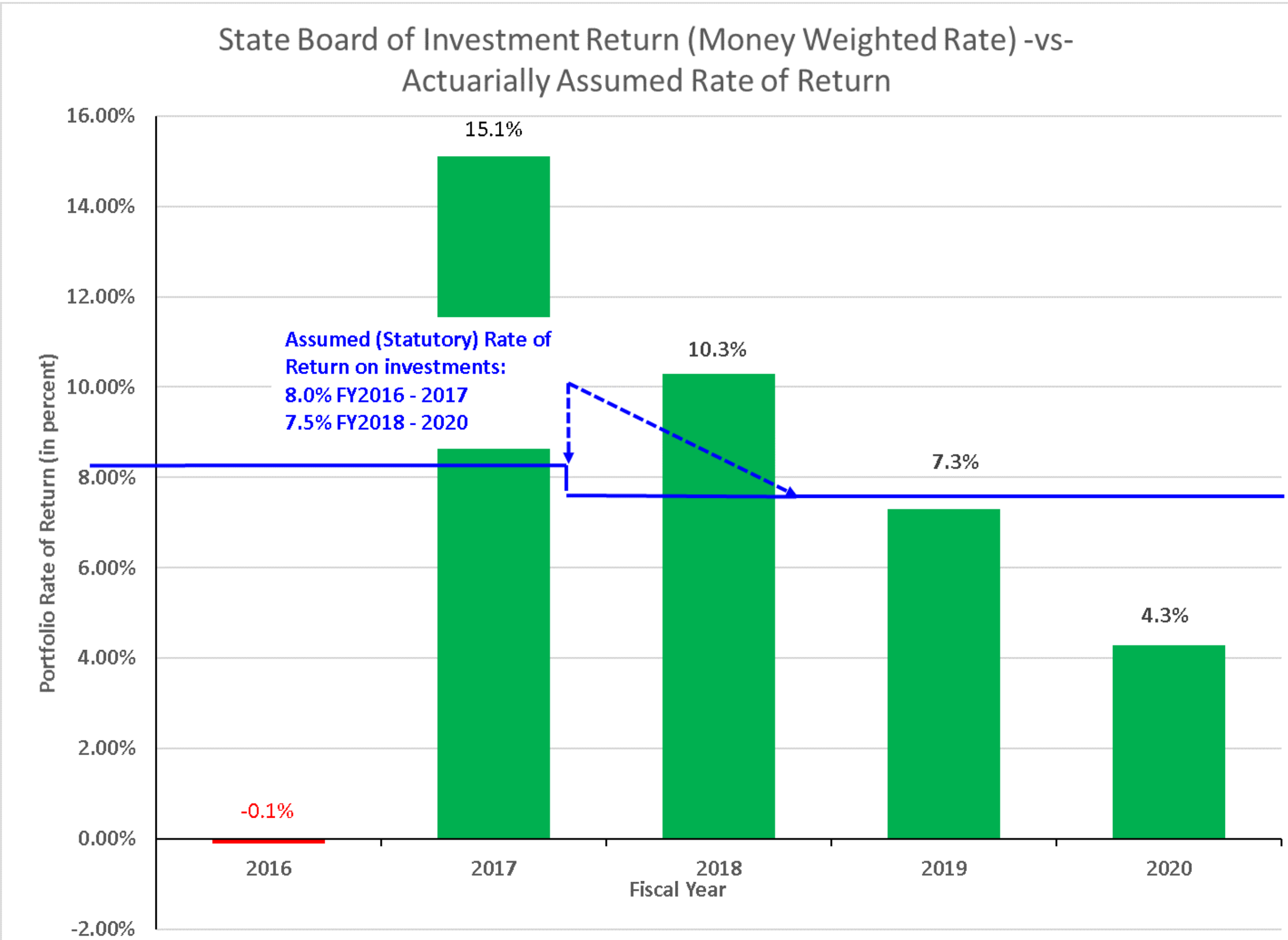
Just as PERA's Board can recommend but not control contribution rates, the Board can influence, but not control, PERA's investment practices. Given the high dependence upon investment returns to fund pension plans, the volatility of returns is an obvious risk that the Board monitors regularly. Of particular importance to the Board is the distribution of investments among different asset classes. Note No. 2 to the financial statements cites the SBI in stating, "…allocation policy is the primary determinant of the…long-term investment return and…risk" and "diversification improves the risk-adjusted return…of the portfolio."



Over the past 20 years, the "risk-free" rate of return on the US Government ten-year Treasury Note has trended downward: In 2000 the ten year Treasury note yielded an average of 5.6%; in 2010 (on the heels of the great recession) it yielded 3.3%; and, in 2020 it has averaged 0.89%. In order to meet PERA's statutorily assumed rate of return, SBI must earn a premium over the risk-free rate by allocating larger shares of the investment portfolio to riskier asset classes which increases the volatility of returns. Over the last several decades, in response to declining market rates on fixed-income investments, SBI increased its allocation of riskier assets in the combined retirement investment portfolio as follows:

Year	2000	2010	2020
Asset type:			
Fixed Income and Cash	26%	25%	25%
US Equities	50%	44%	40%
Int'l Equities	15%	16%	20%
Alternatives (private equity, etc)	9%	14%	16%

For the year ended June 30, 2020, the pooled investment portfolio for the cost sharing plans produced approximately a 4.27 *percent* weighted average rate of return on invested assets (see Note 2, figure 4). Three of the past five years, the average rate of return on PERA's invested assets has been below the 7.5% assumed rate of return. However, the weighted average return for the entire five-year period has been almost exactly the assumed 7.5% rate (7.52% actual).



Plan Maturity

Plan maturity affects the *mix* of contribution and investment income. One measure of maturity is the ratio of active members making contributions to members receiving benefits. As a plan matures, the number of benefit recipients increases faster than the number of active members and the ratio becomes smaller. As plans mature, their investment balances grow. Therefore, the plans rely more heavily on investment income and less on contributions over time.

At fiscal year-end 2020, the ratio of active members to benefit recipients in PERA's three cost sharing, defined benefit plans was as follows:

	Police and Fire	General Plan	Local Corrections
Active Members	12,025	153,741	3,855
Retirees (and other benefit recipients)	11,201	108,492	1,443
Ratio – Active : Retiree	1.1:1	1.4:1	2.7:1

Another measure of maturity is the ratio of total assets to covered payroll. Over time, PERA's plans asset bases have grown through contributions, dividends and interest, and, market appreciation. As a plan matures its asset base grows at a faster rate than the combined payrolls of member employers; the ratio of assets to covered payroll gets larger.

	Police and Fire	General Plan	Local Corrections
Investment Assets	$8,973,460	$22,631,459	$787,322
Covered Payroll	$1,069,489	$6,698,754	$217,702
"Liquidity" Ratio	8.4	3.4	3.6

Amounts in thousands of dollars

An important implication of the assets-to-payroll measure is that it shows how, as plans mature, their income and funded status become increasingly dependent on investment income. Increased dependence on investment income increases plan vulnerability to asset price volatility. The ratio of investments to covered payroll is called the "leverage ratio" because it can be used to calculate the impact of investment income or loss as a percentage of covered payroll. For example, the table above shows the leverage ratio for each of PERA's cost-sharing plans. The Police and Fire Plan has a leverage ratio of 8.4 whereas the less "mature" General Plan has a liquidity ratio of 3.4. This means that a 10% loss on investments in a year would be equivalent to 84% of covered payroll for the Police and Fire plan but only 34% of covered payroll for the Corrections Plan. Because mature plans have higher proportion of annual benefit payments to contributions the cash-flow needs of a mature plan translates into a shortened time-frame to recover losses or sub-par investment earnings ("sub-par" relative to the plan's assumed level of earnings). Therefore, not only do mature plans become more dependent upon *amount* of investment income, but they also become more sensitive to the *timing* of investment returns.

Like most governmental defined benefit pension plans, PERA faces a challenge: It has accumulated an unfunded pension liability which it must amortize; however, the contribution rates the PERA Board recommends to the legislature must be affordable for local taxpayers and at a level that does not exceed the future benefit for employees. PERA's plans are mature and therefore sensitive to investment income volatility; however, interest rates on fixed income instruments are at historic lows thereby forcing PERA's investment manager (SBI) to increase the amount of risk in the portfolio in order to earn the 7.5% average return on investments needed to fully fund the plans. PERA reconciles these competing pressures through plan design.

Plan Design

Plan design is the sustainability dimension that PERA's Board of Trustees affect directly. It is also the most complex dimension. Plan design determines which of PERA's stakeholders incur what costs and which members receive what benefits, when. Virtually every change in plan design will affect different groups of stakeholders and will affect each group differently.

Over the past ten years, the PERA Board has championed numerous changes which have improved their plan sustainability:

Year	Change
2020	See below under "legislative and other developments"
2018	Replaced General Plan fixed COLA with inflation indexed COLA at ½ CPI with floor of 1% and a cap of 1.5% Delayed COLA adjustments for retirees until reaching the age of 66 years beginning 2024 Phased out early retirement subsidies over five years Fixed the Police and Fire Plan COLA at 1% Increased the Police and Fire employee contribution rate from 9.6% to 10.6% phased in over two years beginning 1/1/2019. Reduced the interest rate paid on refunded member contributions from 4% to 3%
2014	Increased the employer contribution rate in the General Plan from 7.25% to 7.5% Increased employee contribution rate in the General Plan from 6.25% to 6.5%
2013	Increased the Police and Fire employee contribution rate from 9.6% to 10.2% on 1/1/2014 and to 10.8% on 1/1/2015 Increased the Police and Fire employer contribution rate from 14.4% to 15.3% on 1/1/2014 and to 10.8% on 1/1/2015
2010	Reduced COLA from 2.5% to 1% until system funded ratio => 90% Increased the Police and Fire employee contribution rate from 9.4% to 9.6% Increased the Police and Fire employer contribution rate from 14.1% to 14.4% Increased the employer contribution rate in the General Plan from 7% to 7.25% Increased employee contribution rate in General Plan from 6% to 6.25% Reduced the interest rate paid on refunded member contributions from 6% to 4% Increased vesting period from three to five years

Source: Adapted from "Spotlight on Significant Reforms to State Retirement Systems", Brainerd, Keith and Alex Brown, December 2018, by National Association of Retirement Administrators, at https://www.nasra.org/files/Spotlight/Significant%20Reforms.pdf

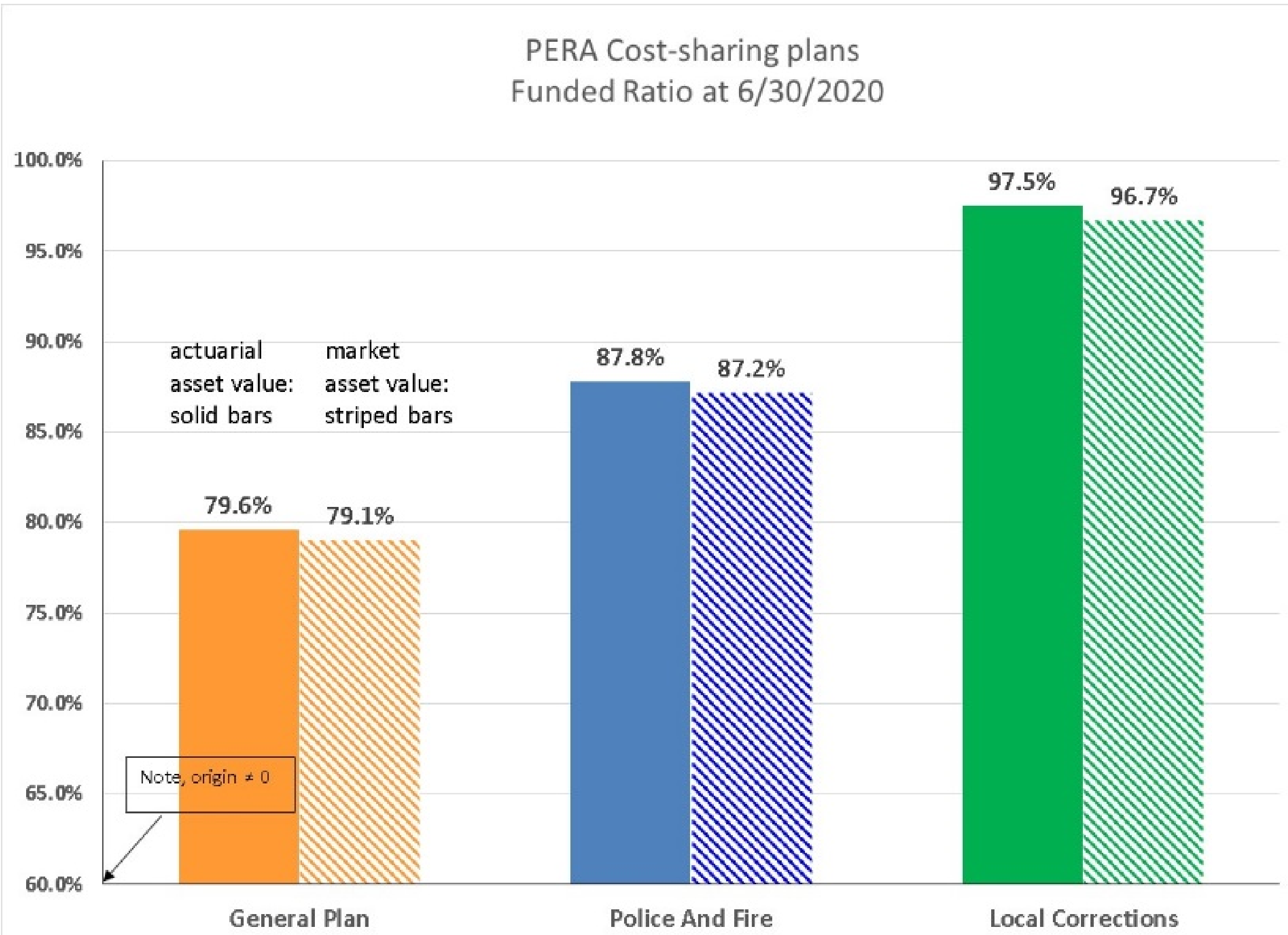
PERA's Board and management regularly review its plans and recommend adjustments to the legislature to ensure the plans are affordable for the taxpayer, provide reasonable benefits for members, and are equitable across generations. Currently the Board is developing a policy framework to help guide future plan design to ensure funding mechanisms are in place to meet desired benefit levels and to equitably share costs between the employer and employees.

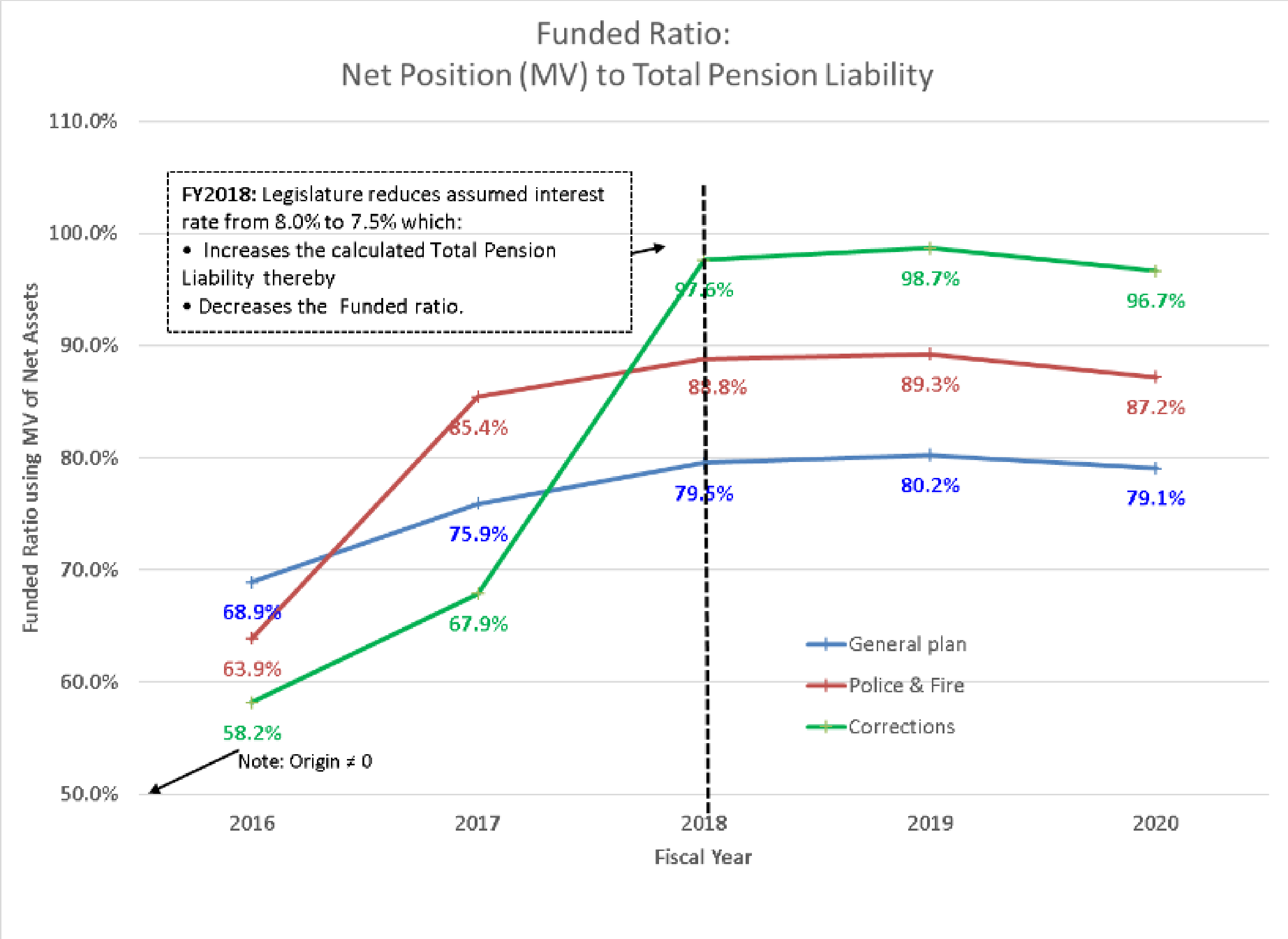
Legislative and Other Recent Developments

In the 2020 session, the Legislature made several changes to Chapter 353F, which governs privatization. Chapter 353F applies to medical facilities that have the primary purpose of providing medical care and are governmental subdivisions (e.g. district hospitals). These entities are allowed to privatize and leave the PERA General Employees Plan. Previously, members of privatized entities received augmentation on their benefits. The augmentation rates depended on what year the entity privatized. The Legislature reduced the augmentation to two percent for all members currently receiving augmentation. In addition, augmentation will be eliminated for all current privatized members as of December 31, 2023. Members of entities that privatize after June 30, 2020 will not receive any augmentation.

Conditions and Outlook

The Funded Ratio is an important measure the Board and PERA management use to monitor pension plan financial health and sustainability. The Funded Ratio compares a plan's assets divided by the actuarially determined total pension liability. At the end of fiscal year 2020, the ratio of assets to the total pension liability were as shown in the accompanying chart. The actuarial value of assets uses a five-year average to smooth the values whereas market value reflects the actual market value of traded assets and a fiscal year-end appraisals of non-traded (alternative) assets. The downturn in the equity markets near the end of FY2020 is reflected in the fact that market values are lower than the actuarially smoothed asset values.





The trend of the funding ratio over time is also necessary for a full understanding of plan sustainability. Ten-year schedules of PERA's historical funding ratios using the actuarial value of assets are shown in the *Schedule of Funding Progress* in the *Actuarial Section* of the report and funding ratio trends on both an actuarial and market basis of asset-valuation are discussed in the MD&A.

In general, the trends show long-term improvement that should result in full funding before the statutorily required full-funding dates for all plans. Strong investment returns in FY2017 and 2018 propelled growth in the funded ratio. However, in FY2018 PERA reduced the assumed rate of return on its investments from 8% to 7.5%. Lowering the assumed rate of return, which is the rate our actuaries use to discount future benefit payments to calculate Total Pension Liability, caused the value of the pension liability to increase in FY2018. This increase in the total pension liability was followed by two years of lower than assumed investment earnings (see investment discussion above). As a result, the funded status of the plans remained essentially unchanged for the past two years.

Our investment manager, SBI, has demonstrated great skill in managing investment allocation and risk to generate returns necessary to support the existing retirement plans. We have confidence the SBI will continue to provide good, risk-adjusted returns for the foreseeable future. Our actuary, Gabriel Roeder and Smith, has done a careful study of market returns and volatility and are of the opinion that our current 7.5% assumed rate of investment return is reasonable. Furthermore, FY2020 has been an unusually volatile year for investments; it is reasonable to expect investment income to return to the mean in the coming years.

Therefore, based on the proven skill of our independent investment manager; the carefully reasoned advice of our independent actuaries; and, the leadership of our Board in evolving the design of our plans to keep them sustainable; we are confident that:

- PERA will pay all benefits due to all members in full and on time;

- PERA's funded status will continue to improve and the unfunded liability will be amortized by or before the 2048 amortization target date set in statutes.
- PERA will continue to offer reasonable retirement benefits that help public employers attract and retain staff;
- At an affordable cost to Minnesota taxpayers.

Awards

PERA received national recognition in pension fund administration and disclosure of financial information. The Government Finance Officers Association of the United States and Canada (GFOA) awarded a *Certificate of Achievement for Excellence in Financial Reporting* to PERA for its CAFR for the fiscal year ended June 30, 2019.

The *Certificate of Achievement* is a prestigious national award, recognizing conformance with the highest standards for preparation of state and local government financial reports. To be awarded a *Certificate of Achievement*, a government unit must publish an easily readable and efficiently organized CAFR. This report must satisfy both generally accepted accounting principles and applicable legal requirements. A *Certificate of Achievement* is valid for one year only. We believe our current report continues to meet the *Certificate of Achievement* program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

The GFOA established the Popular Annual Financial Reporting (PAFR) Awards Program in 1991 to encourage governments to extract information from the CAFR and produce a high quality popular annual report specifically designed to be readily accessible and easily understandable. The GFOA awarded PERA the *Award for Outstanding Achievement in Popular Financial Reporting* for the fiscal year ended June 30, 2019.

We are also pleased to report that PERA received the Public Pension Coordinating Council's (PPCC) Public Pension Standards 2019 Award in recognition of meeting professional standards for plan administration as set forth in the Public Pension Standards. These standards were developed by a coalition of three associations that represent public pension funds who cover the vast majority of public employees in the U.S. They are intended to reflect minimum expectations for public retirement systems management and administration, and serve as a benchmark by which all defined benefit public plans should be measured. PERA is proud to receive this award.

Acknowledgments

We wish to thank the Board of Trustees for their leadership in conducting PERA's affairs in a fiduciarily responsible and financially sound manner.

We wish to thank all the employees at PERA for their consistent, dedicated efforts to serve the interests of our members and other stakeholders.

We especially wish to thank David Andrews, PERA's Controller, and his staff not only for this CAFR but also for the excellent work they do daily in conducting PERA's financial business according to the highest professional standards.

Respectfully Submitted,

Doug Anderson
Executive Director

Michael Hagerty
Chief Finance Officer

Luis Lugo
Chief Operating Officer

Board of Trustees & Professional Consultants

Board of Trustees

Thomas Stanley, President
Elected General Membership Representative
Trustee since March 2013
Current term expires January 2023

Paul Bourgeois
Elected General Membership Representative
Trustee since February 2011
Current term expires January 2023

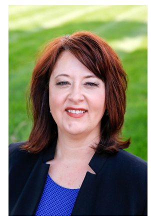
Mary Falk
Appointed General Public Representative
Trustee since June 2015
Current term expires January 2023

Paul Ford
Elected Police & Fire Representative
Trustee since August 2017
Current term expires January 2023

Barb Johnson
Appointed City Representative
Trustee since January 2017
Current term expires January 2021

Leigh Lenzmeier
Appointed County Representative
Trustee since November 2010
Current term expires January 2021

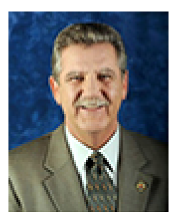
Kathryn A. Green, Vice President
Appointed School Board Representative Trustee since April 2006
Current term expires January 2022



Julie Blaha
State Auditor
Trustee since January 2019
Current term expires January 2023

David Metusalem
Elected Retiree/Disabilitant Representative
Trustee since April 2019
Current term expires January 2023

Thomas Rupp
Elected General Membership Representative
Trustee since February 2019
Current term expires January 2023



Thomas Thornberg
Appointed Annuitant Representative
Trustee since February 2020
Current term expires January 2024

Professional Consultants

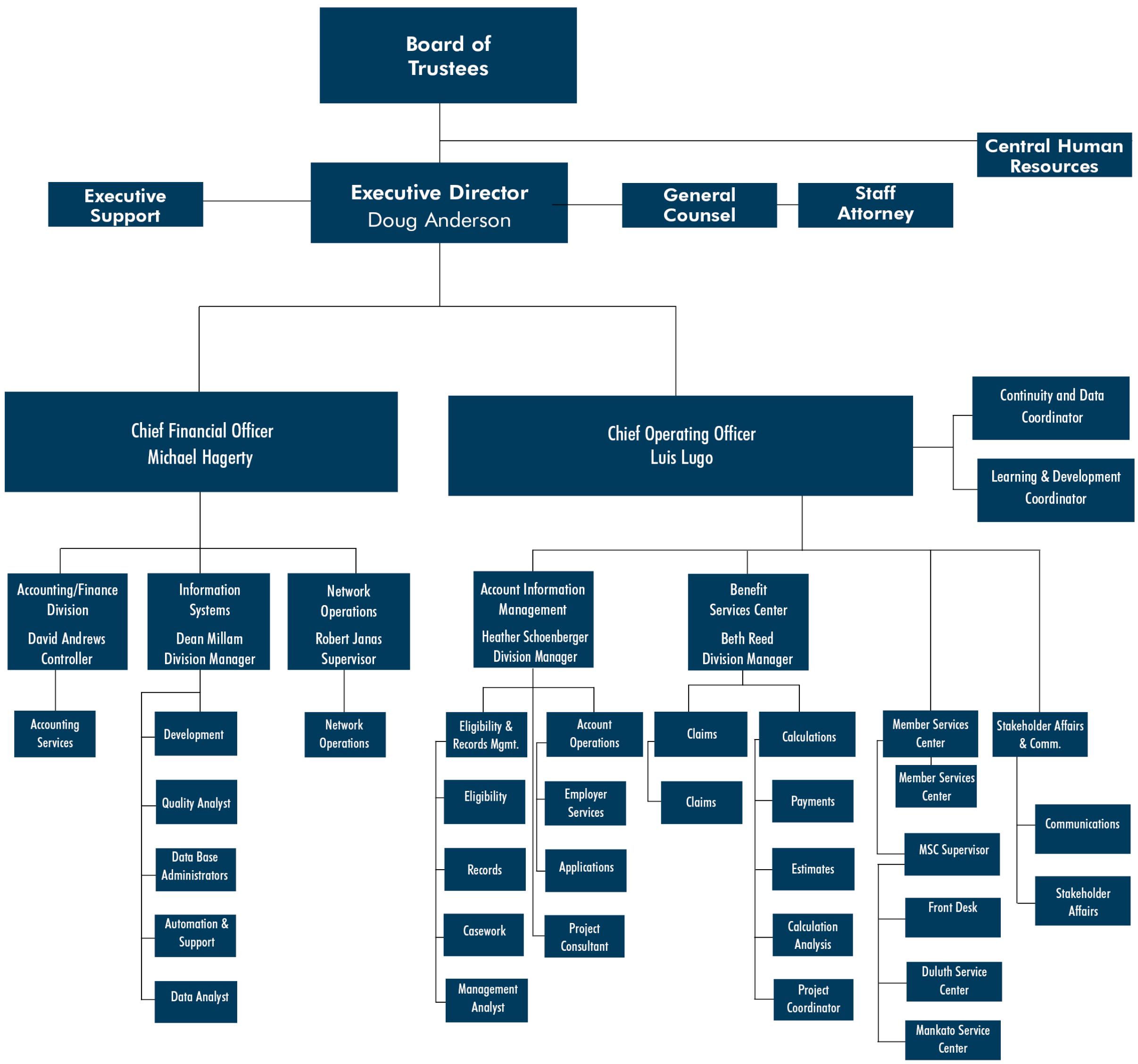
Actuary:
Gabriel Roeder Smith & Company

Auditors:
Minnesota Office of the Legislative Auditor
Clifton Larson Allen

Legal Counsel:
Minnesota Office of Attorney General

Medical Advisor:
MMRO - Managed Medical Review Organization

NOTE: PERA invests its funds in various investment pools administered by the Minnesota State Board of Investment (SBI). The SBI retains various investment advisors whose fees are paid by the pool participants, including PERA. A schedule of these advisors and PERA's share of their fees is located on page116 in the *Investment Section* of this CAFR.



Our Mission & Vision

PERA's mission is to administer and promote sustainable retirement plans and provide services that our members value. PERA's vision: PERA will be a recognized leader in efficient and excellent service delivery and plan management.

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FINANCIAL SECTION

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OFFICE OF THE LEGISLATIVE AUDITOR
STATE OF MINNESOTA • James Nobles, Legislative Auditor

Independent Auditor's Report

Members of the Board of Trustees
Public Employees Retirement Association of Minnesota

Mr. Doug Anderson, Executive Director
Public Employees Retirement Association of Minnesota

Report on the Financial Statements
We have audited the accompanying financial statements of the Public Employees Retirement Association of Minnesota (PERA), which included the Statement of Fiduciary Net Position as of June 30, 2020, the related Statement of Changes in Fiduciary Net Position, and Notes to the Financial Statements, as listed in the Financial Section of 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 controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility
Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit 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 of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of 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 auditor's 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 controls relevant to PERA'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 PERA's internal controls. 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.

Members of the Board of Trustees
Mr. Doug Anderson, Executive Director
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Opinion
In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Public Employees Retirement Association of Minnesota as of June 30, 2020, and the changes in financial position for the fiscal year then ended in conformity with accounting principles generally accepted in the United States of America.

Required Supplementary Information
Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis and the other required supplementary information, as listed in the Financial Section of 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, which 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 Management's Discussion and Analysis and the other 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 Information Included with the Financial Statements
Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise PERA's basic financial statements. The supporting schedules in the Financial Section and the Introductory, Investment, Actuarial, and Statistical Sections, as listed in the Table of Contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The supporting schedules, as listed in the Financial Section of the Table of Contents, are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. The supporting schedules have been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supporting schedules are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The Introductory, Investment, Actuarial, and Statistical Sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by Government Auditing Standards
In accordance with *Government Auditing Standards* Government Auditing Standards, we will issue a report on our consideration of the Public Employees Retirement Association of Minnesota's internal controls over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts,

Members of the Board of Trustees
Mr. Doug Anderson, Executive Director
Page 3

grant agreements, and other matters. The purpose of that report is to describe the scope and results of our testing of internal controls over financial reporting and compliance and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

Lori Leysen, CPA
Deputy Legislative Auditor

Tracy Gebhard, CPA
Audit Director

December 21, 2020
Saint Paul, Minnesota

Management Discussion and Analysis

The following *Management Discussion and Analysis* and the related financial statements provide insight into PERA's overall financial condition and results of operations for the fiscal year ended June 30, 2020. The Agency's financial condition is an essential element of PERA's ability to sustain its pension plans.

The following narrative supplements the financial statements. It should be read in conjunction with the transmittal letter and footnotes to the statements presented elsewhere in this Comprehensive Annual Financial Report (CAFR). Readers should also familiarize themselves with the Annual Valuations and periodic Experience Studies prepared by our independent actuaries available on our website (https://www.mnpera.org/about/financial/) and with the State Board of Investment's Annual Report available on their website (http://mn.gov/sbi/)

Overview of PERA

PERA provides pension plans for persons who retire from covered local government service in the State of Minnesota and their survivors. PERA has two types of pension plans: defined benefit retirement plans and a defined contribution plan.

The defined benefits plans make payments whose amount and timing are determined by the terms of the applicable retirement plan. All PERA plans are multiple employer plans. PERA provides both cost-sharing, and agent multiemployer plans. In the cost-sharing plans, PERA pools the assets *and* the obligations of the participating government employers. Pooled assets can be used to pay the retirement obligations of any employer in the plan. In the Statewide Volunteer Firefighter agent plan, PERA pools the assets of the participating fire departments for investment purposes. However, a separate account is maintained for each fire department. In essence, the agent plan can be thought of as a bundle of separate retirement plans with their own obligations and assets.

PERA accounts for each defined benefit plan in its own pension trust fund as follows:

Plan name	Type of Plan	Fund type
General Employees Retirement Plan	Cost-sharing multiple-employer	Pension Trust
Police and Fire Plan	Cost-sharing multiple-employer	Pension Trust
Correctional Plan	Cost-sharing multiple-employer	Pension Trust
Statewide Volunteer Firefighter Plan	Agent multiple- employer	Pension Trust

Under plan-defined circumstances, members of the three cost-sharing multiple employer plans may be eligible for non-retirement benefits if they suffer a disability as defined in State Law.

Ancillary Services: PERA administers a defined contribution plan primarily for local government elected officials. The plan provides benefits that are limited to member contributions and related investment earnings.

PERA also has custodial responsibilities for an Other Post-employment Benefit plan (OPEB) open to local governments on a voluntary basis. And, PERA acts as a conduit and has custodial duties for qualifying local governments who wish to make long-term investments through the State Board of Investment.

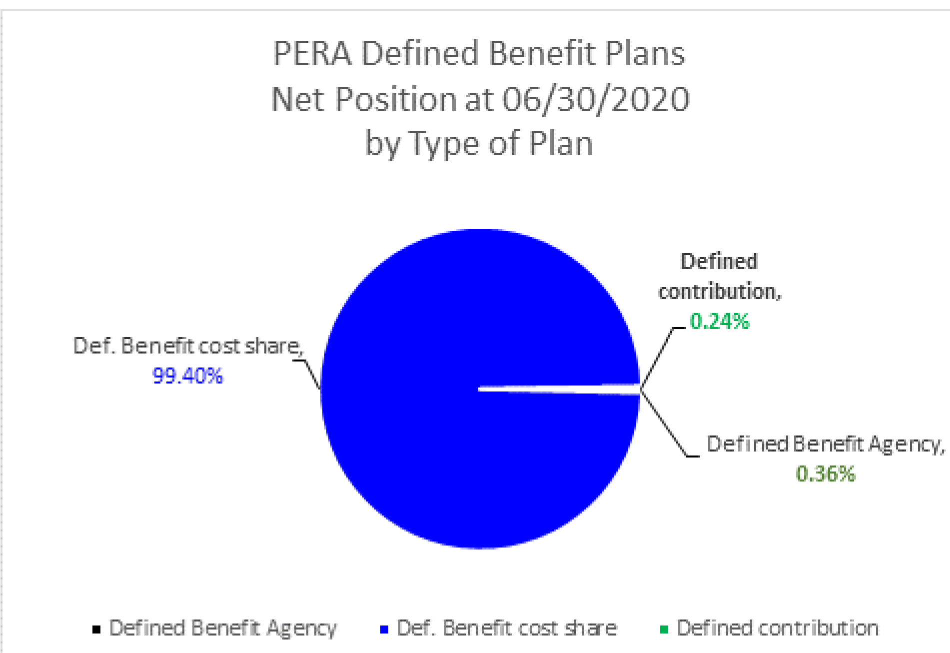
Note 1 to the financial statements contains detailed information about the plans.

PERA's Basic Financial Statements

1. The *Statement of Fiduciary Net Position* reports the difference between the assets held in trust and the liabilities owed to third parties. As a trust, all of the PERA's pension fund net assets are available to pay the plan's pension liabilities. *However*, the liability for future benefit payments remains with the employer. Therefore, "the bottom line" of the Fiduciary Statement of Net Positio*n* (Fiduciary Net Position) measures the resources PERA has available to pay benefits as of the end of the fiscal year but not the aggregate pension liability owed by participating employers at that time. Fiduciary Net Position must be considered with actuarial valuation reports and other information to get a complete understanding of the financial position and sustainability of PERA's retirement plans.

PERA's *Statement of Fiduciary Net Position* shows a combined Net Position of $32.6 billion for all activities for the fiscal year ended (FY) June 30, 2020. By type of plan, FY2020 net position is distributed as follows:

◦ Defined benefit cost-sharing multiple-employer plans	$32.4 billion	99.40%
◦ Defined benefit agent multiple-employer plan (Volunteer Fire)	$0.12 billion	0.36%
◦ Defined contribution plan	$0.08 billion	0.24%



Because cost-sharing multiple employer plans represent an overwhelming share of PERA's assets and net position, the rest of this discussion will focus on PERA's three defined benefit, cost sharing multiple employer plans.

Note: Because the collateral for securities lent (asset) and the liability to return securities lending collateral are fully offsetting, they have no effect on net position. Therefore, securities lending collateral is omitted from the discussion of PERA's assets and liabilities.

Condensed Schedule of Fiduciary Net Position - Cost-Sharing Plans (in thousands)

	General Employees Fund	Police & Fire Fund	Correctional Fund	FY 2020 Combined Total	FY 2019 Combined Total	Change $	Change %
Assets							
Cash & Cash Equivalents	$968,024	$389,655	$34,069	$1,391,748	$895,617	$496,131	55.4%
Receivables	39,659	13,148	912	53,719	70,206	(16,487)	(23.5%)
Investments	21,627,720	8,576,505	752,886	30,957,121	31,075,797	(118,676)	(0.4%)
Capital Assets & Other	5,997	0	0	5,997	6,332	(335)	(5.3%)
Total Assets Before Security Lending	**22,641,400**	8,979,318	787,867	32,408,585	32,047,952	360,633	1.1%
Security Lending Collateral	1,589,801	630,439	55,343	2,275,583	2,379,690	(104,107)	(4.4%)
Total Assets per Statements	**24,231,201**	**9,609,757**	**843,210**	**34,684,168**	**34,427,642**	**256,526**	**0.7%**
Liabilities							
Accounts Payable	5,667	5,858	545	12,070	13,039	(969)	(7.4%)
Accrued Compensated Absences	1,016	0	0	1,016	1,012	4	0.4%
Bonds Payable	3,258	0	0	3,258	3,958	(700)	(17.7%)
Total Liabilities Before Securities Lending	**9,941**	**5,858**	**545**	**16,334**	**18,009**	**(1,665)**	**(9.3%)**
Liability to Return Securities Lending Collateral	1,589,801	630,439	55,343	2,275,583	2,379,690	(104,107)	(4.4%)
Total Liabilities Per Statements	1,599,742	636,297	55,888	2,291,927	2,397,699	(105,772)	(4.4%)
Total Net Position	**$22,631,459**	**$8,973,460**	**$787,322**	**$32,392,241**	**$32,029,943**	**$362,298**	**1.1%**

2. The *Statement of Changes in Fiduciary Net Position* reports the changes to the PERA's fiduciary net position that happened during the year. Additions to net position include contributions from members, members' employers, and others as well as the net appreciation in the fair value of the investment portfolio. Deductions from net position during the year include benefit payments and administrative expenses.

Condensed Schedule of Changes in Fiduciary Net Position - Cost-Sharing Plans (in thousands)

Additions	General Employees Fund	Police & Fire Fund	Correctional Fund	FY 2020 Combined Total	FY 2019 Combined Total	Change $	Change %
Employer Contributions	$509,821	$193,819	$19,043	$722,683	$708,937	$13,746	1.9%
Member Contributions	435,419	123,525	12,692	571,636	548,291	23,345	4.3%
State Contributions	16,000	13,500	0	29,500	29,500	0	0.0%
Investment Income (Loss)	931,041	368,949	31,774	1,331,764	2,207,589	(875,825)	(39.7%)
Other Additions	267	260	0	527	208	319	153.4%
Total Additions	**1,892,548**	**700,053**	**63,509**	**2,656,110**	**3,494,525**	**(838,415)**	**(24.0%)**
Deductions							
Benefits	1,604,842	567,040	17,569	2,189,451	2,099,151	90,300	4.3%
Refunds of Contributions	84,947	3,181	2,709	90,837	71,361	19,476	27.3%
Administrative Expenses	12,268	924	332	13,524	14,849	(1,325)	(8.9%)
Total Deductions	**1,702,057**	**571,145**	**20,610**	**2,293,812**	**2,185,361**	**108,451**	**5.0%**
Increase (Decrease) in Net Position	**$190,491**	**$128,908**	**$42,899**	**$362,298**	**$1,309,164**	**($946,866)**	**(72.3%)**

3. The *Notes to the Financial Statements* are an integral part of the basic financial statements and provide additional information that is necessary for understanding the financial statements.

Required Supplementary Information:

In addition to the *Basic Financial Statements*, the following *Required Supplementary Information* is found after the *Notes to the Financial Statements*:

1) *Schedule of Changes in Net Pension Liabilities and Related Ratios*
2) *Schedule of Contributions from Employers and Non-employers*
3) *Schedule of Investment Returns*

Financial Highlights:

The *Statement of Fiduciary Net Position* presents the value of fiduciary net position.

- Fiduciary Net Position increased by approximately $362 million (1.1%) from $32.0 billion at fiscal year-end (FY) 2019 to $32.4 billion at FY2020 for the combined cost-sharing plans.
- Total Pension Liability is an actuarial *estimate* of the present value of pension benefits already earned by government employees. Combined Total Pension Liability for PERA's three cost-sharing plans increased by approximately $1.1 billion from 38.6 billion at FY2019 to $39.7 billion at FY2020.
- Net Pension Liability is the Association's Total Pension Liability less Fiduciary Net Position. Although Total Pension Liability increased by approximately $1.1 billion, because Net Fiduciary Position (net assets) also increased by approximately $362 million, PERA's *Net* Pension Liability increased by approximately $733 million from $6.61 billion at FY2019 to $7.34 billion at FY2020. Information about Total and Net Pension Liability estimates are disclosed in the footnotes and required supplementary information of this report.

Transactions affecting Net Fiduciary Position during the year include:

- *Contributions* to PERA's cost-sharing plans increased by approximately $37 million (2.9%) from approximately $1.29 billion during FY2019 to approximately $1.32 billion in FY2020.
- *Benefit and Refund Payments* increased approximately $110 million (5.1%) from $2.17 billion during FY2019 to $2.28 billion during FY2020.
- *Administrative Expenses* decreased approximately $1.3 million (approximately 8.8%) from approximately $14.8 million in FY2019 to $13.5 million in FY2020.
- *Net Cash Flow* (contributions less benefit payments and expenses) <u>used</u> $72 million more financial resources in FY2020 at ($969) million versus ($897) million cash flow in FY2019.
- *Investment Income*, including increases in fair market value less investment-related expenses, decreased by approximately $875 million from approximately $2.21 billion in FY2019 to $1.33 billion in FY2020. FY2020 positive investment income of $1.33 billion more than offset negative net cash flow of ($969) million increasing PERA's net position by $362 million.
- *Investment Rate of Return* decreased. Investment earned a money-weighted rate of return of 7.3% in FY2019 versus 4.3% in FY2020.

Analysis:

Over the long run, a defined benefit plan must balance cash in from contributions and investment income with cash out for benefits and expenses as expressed in the equation:

Contributions + Investment Income = Benefits Paid + Expenses

$$\underbrace{C + I}_{\text{Cash in}} \qquad \underbrace{B + E}_{\text{Cash out}}$$

During any given year, one side of the equation may be larger than the other side. Differences accumulate in the Fiduciary Net Position which is a reserve for paying future benefits.

Changes to Fiduciary Net Position Fiscal Year 2020:

Additions to Net Position come from two sources:

- Net Cash Flow, and
- Net Investment Income.

<u>Net Cash Flow</u>: excluding investment income and rearranging the terms of the basic pension equation, net cash flow is defined as:

Contributions - Benefits - Expenses = Net Cash Flow

As retirement plans mature, the number of members receiving benefits increases relative to the number of active members making contributions. As a result, net cash flow turns negative. However, negative net cash flow by itself is not an alarming fact because pension plans are meant to accumulate an investment portfolio over time which can support later benefit payments.

PERA's General and Police and Fire plans are "mature" plans. They have been in existence long enough that there is a full generation of beneficiaries drawing benefits from the plans. One typical measure of plan maturity is the number of benefit recipients versus the number of active (contributing) employees. The table below shows PERA's maturity and net cash flows for the three cost-sharing plans:

Cost Sharing Plan Maturity and Related Net Cash Flow

Plan	Maturity (active :retirees)	FY 2020 Net Cash Flow (in thousands)	Net Cash Flow as Percent of Net Position
Police and Fire	1.1:1	($237,120)	(2.60%)
General	1.4:1	($655,870)	(2.90%)
Corrections	2.7:1	$13,834	1.76%

Contributions come from three sources: participating employers; active, covered employees; and, non-employer sources. Contributions increased by approximately $37 million, or about 2.9% from approximately $1.29 billion in FY2019 to approximately $1.32 billion in FY2020.

Schedule of Contributions: FY2020 versus FY2019 (in thousands)

	Employer Contributions	Member Contributions	State Contributions	Total Contributions FY 2020	Total Contributions FY 2019
General Employees Fund	$509,821	$435,419	$16,000	$961,240	$955,488
Police & Fire Fund	193,819	123,525	13,500	330,844	300,079
Correctional Fund	19,043	12,692	0	31,735	31,161
Total Contributions FY 2020	**$722,683**	**$571,636**	**$29,500**	**$1,323,819**	
Total Contributions FY 2019	$708,937	$548,291	$29,500		**$1,286,728**

Employer and employee contributions for the three cost-sharing plans are determined by two factors:

1. Covered payroll which, in turn, is determined by two factors:
    a. The number of pension-covered employees times (labor volume factor)
    b. The average pension-eligible compensation per covered employee (labor rate factor)

2. Contribution rates applied to covered payroll are set by the Minnesota State legislature (*Minnesota Statutes*, Chapter 353 and Chapter 353E). These legislatively determined rates are a critical variable in PERA's funding practices.

Covered payroll increased in each of the three funds during FY2020. Combined, covered payroll for the three plans increased by about $236 million or about 3%. As shown in the table below, the changes in combined total covered payroll were due to:

1. Decreased number of active eligible employees (labor volume). Combined active employment in the three funds decreased 0.1% or 237 persons. Employment in the Police and Fire plan increased by 262; covered employment in the General Plan and local correction plan declined by 389 and 110 respectively. Even though total employment in the three cost sharing plans declined, because of different average pay-rates between employee groups in the different plans, the change in the *mix* of employees increased total covered payroll by a very small amount.

2. Increased average rates of pay for active employees (labor rate) accounted for virtually all of the increase in covered payroll in FY2020. On a combined basis, the change in pay rates for employees increased covered payroll by approximately $236 million or about 3%.

Schedule of Changes in Covered Members and Payroll - Multi-Employer Cost-sharing Pension Plan

	FY2020			FY2019			FY2020 increment (%) over (under) FY2019		
Plan	Covered Payroll (in thousands)	Number of Active Employees	Average Pension-eligible compensation per employee	Covered Payroll (in thousands)	Number of Active Employees	Average Pension-eligible compensation per employee	Total Change (%) in Covered Payroll	Due to change in the Number of Active Employees	Due to change in Average Pension-eligible compensation per employee
General	$6,698,754	153,741	$43,572	$6,523,754	154,130	$42,326	2.7%	(0.3%)	2.9%
Police and Fire	1,069,481	12,025	88,938	1,011,421	11,763	85,983	5.7%	2.2%	3.4%
Local Corrections	217,702	3,855	56,473	214,151	3,965	54,010	1.7%	(2.8%)	4.6%
Total	$7,985,937	169,621		$7,749,326	169,858				

Contribution rates applied to covered payroll for Police and Fire members and their employers changed in FY2019 and FY2020. Rates for the General and Correctional plans remained the same in FY2020 as FY2019. Contribution rates for members and their employers were as follows in FY2019 and FY2020:

Retirement Plan Contribution Rates

		General Employees Fund				
Effective Date	Contributor	Basic	Coordinated	MERF	Police & Fire Fund	Correctional Fund
01/01/2018	Member	9.10%	6.50%	9.75%	10.80%	5.83%
	Employer	11.78%	7.50%	9.75%	16.20%	8.75%
01/01/2019	Member	9.10%	6.50%	9.75%	11.30%	5.83%
	Employer	11.78%	7.50%	9.75%	16.95%	8.75%
01/01/2020	Member	9.10%	6.50%	9.75%	11.80%	5.83%
	Employer	11.78%	7.50%	9.75%	17.70%	8.75%

Other Contributions are statutorily mandated. State non-employer contributions include amounts to offset costs incurred by PERA in the past to absorb underfunded local government retirement plans and to help the Police and Fire plan reach full-funding. In total, State contributions to the three cost-sharing defined benefits plans totaled $29.5 million and represented 2.2% of contributions and 1.1% of total additions to net position.

Benefit payments are the principal use of net cash flow. Annual benefit payments from cost-sharing plans in FY2020 were approximately $2.19 billion or about $90 million (about 4.3%) higher than FY2019 payments of approximately $2.10 billion. Two factors increased the total amount of benefits paid in FY2020 over FY2019:

1. Number of recipients: Combined, the number of benefit recipients in the three cost-sharing plans grew by 3,544 persons (3%). Of the $90 million increase in benefit payments, approximately $57 million was due to the increased number of persons receiving benefits.

2. Change in average benefit paid per recipient: Combined, Cost-of-Living Adjustments (COLA) to retirees' benefits and higher initial benefits due to higher final salaries for more recent retirees increased total FY2020 benefit payments by approximately $33 million over FY2019's level.

Schedule of Changes in Benefit Payments and Recipients - Cost-Sharing Multi-Employer Plans

	FY 2020			FY 2019			FY 2020 percent over (under) FY2019		
	Benefit Payments (in thousands)	Number of Benefit Recipients	Average Benefit per Recipient	Benefit Payments (in thousands)	Number of Benefit Recipients	Average Benefit per Recipient	Benefit Payments (in thousands)	Number of Benefit Recipients	Average Benefit per Recipient
General Employees Fund	$1,604,842	108,492	$14.8	$1,536,071	105,243	$14.6	4.5%	3.1%	1.3%
Police & Fire Fund	567,040	11,201	$50.6	547,699	11,031	$49.7	3.5%	1.5%	2.0%
Correctional Fund	17,569	1,443	$12.2	15,381	1,318	$11.7	14.2%	9.5%	4.3%
	$2,189,451	**121,136**		**$2,099,151**	**117,592**				

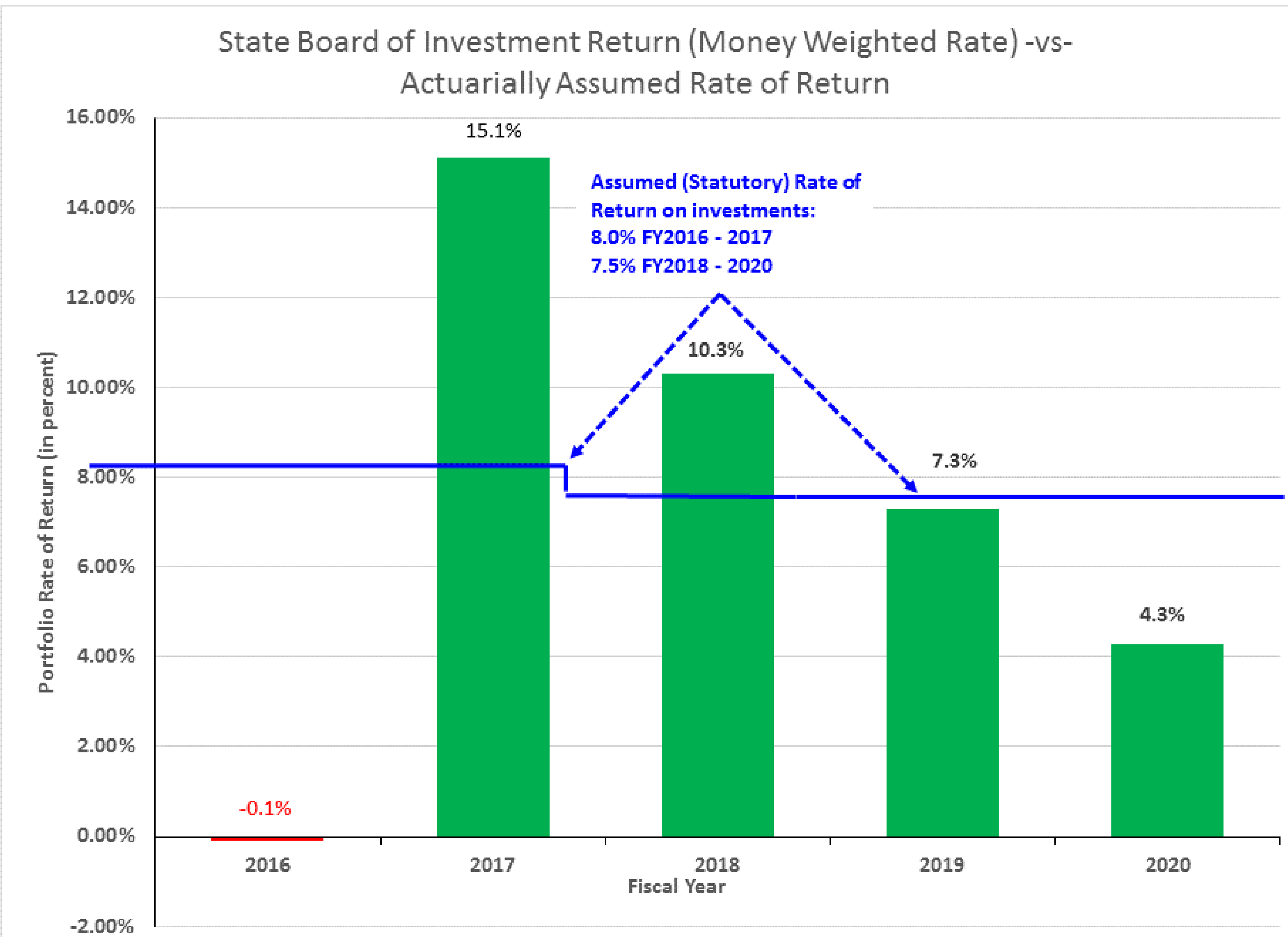
Note: Police and fire benefit payments appear to be high relative to other plans because members of the Police and Fire Plan do not participate in Social Security's Old Age Security and Disability Insurance program (OASDI). Because they don't participate in Social Security , Police and Firefighter members and their employers pay higher contributions to PERA than non-Police and Fire (P&F) members and, correspondingly, receive a higher benefit.

Net Investment Income: Two out of the three cost sharing plans have negative net cash flow. Therefore, investment income is essential to plan success. Investment income for any year is the *rate* of return times the *volume* of invested assets.

1. The money-weighted rate of return: During FY2020 the three cost sharing plans recorded net investment income of $1.3 billion which the SBI calculates is a money-weighted average rate of 4.3% on the plans' investments. This is a decrease from the $2.2 billion earned by the plans in FY2019.

2. However, more important than any given year's return is the long-term average return. The rate of return on PERA's investments have been positive four out of the past five years and has exceeded the statutorily assumed rate of return (7.5%) in two out of the past five years.

3. The weighted average return on PERA's investments from 2016 to 2020 has been 7.52%.



According to PERA's investment managers at the State Board of Investments (SBI), "The SBI's strategic allocation policy is the primary determinant of the asset portfolio's long-term investment return and asset portfolio's risk." (see: *Notes to The Financial Statements No. 2*). As discussed in the transmittal letter, the twenty-year bull market in bonds has driven the rate on the "risk-free" ten-year Treasury note down from an average of approximately 6% in 2000 to under 1% in 2020. This has caused SBI (and all pension investment managers) to reallocate investments to riskier asset classes in order to earn the returns necessary to sustain plans. However, PERA's independent actuaries review PERA's pension plan assumptions annually. After accounting for the risks inherent in the portfolio, the actuaries have concluded that it is reasonable to assume that over a multi-year period the actual average rate of return should be approximately equal to the statutory rate of 7.5%.

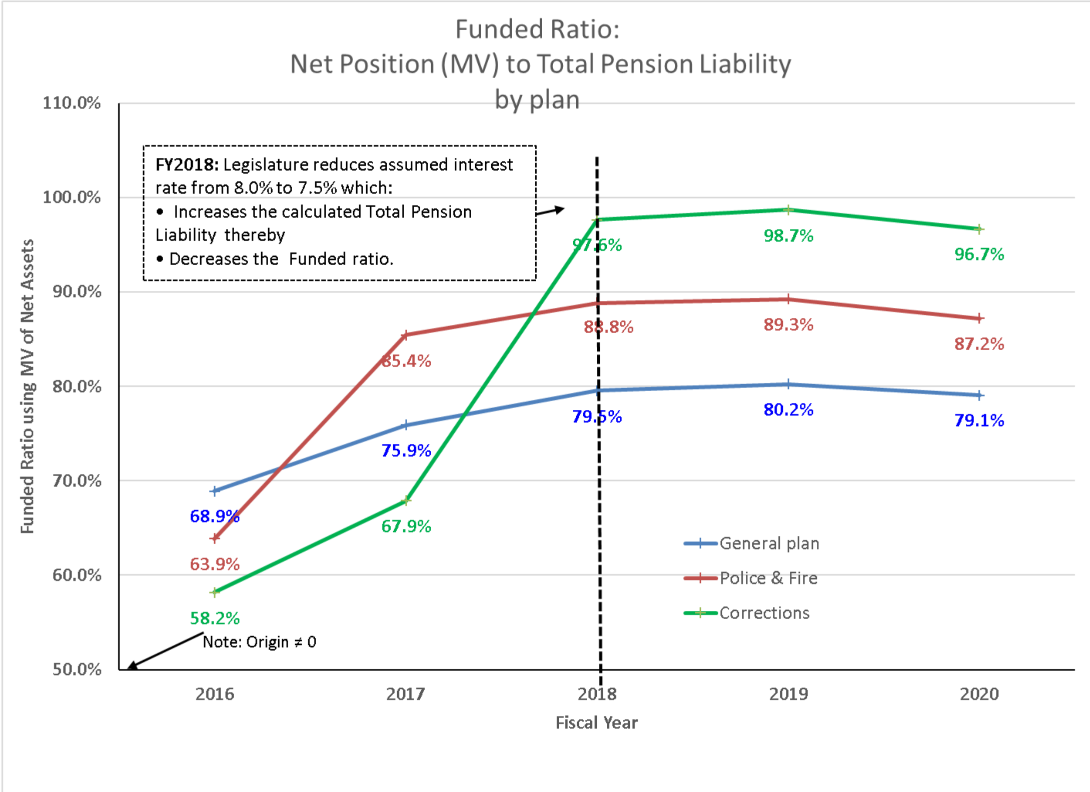
Overall Financial Condition:

Is PERA financially better off in FY2020 than it was in FY2019?

The level and trend of the funded ratio provides the best answer to the question above. The funded ratio compares the level of net assets reported in PERA's financial statements to the actuaries' estimate of the total pension liability. The funded ratio is the most important single measure of the financial health of PERA's retirement plans.

The funded ratio can be calculated either by dividing the Market Value of Assets by the estimated Total Pension Liability or by using the actuarial value of assets. The actuarial value of assets averages investment gains and losses over a five-year period (see the *Schedule of Funding Progress* in the Actuarial Section of this CAFR). The accompanying chart uses Market Value in the denominator to agree with the values reported in the *Statement of Net Position*.

Strong investment returns in FY2017 and FY2018 propelled growth in the funded ratio. However, in FY2018 PERA reduced its assumed rate of return on investments from 8% to 7.5%. Lowering the assumed rate of return, which is the rate our actuaries use to discount future benefit payments to calculate Total Pension Liability, caused the reported value of the pension liability to increase in FY2018. This increase in the total pension liability was followed by two years of lower than assumed investment earnings. As a result, the funded status of the plans remained essentially unchanged for the past two years. However, over the longer-term, the trends in funded status show improvement. Ten-year schedules of PERA's historical funding ratios using the actuarial value of assets are shown in the *Schedule of Funding Progress* in the *Actuarial Section* of the report.



Therefore, although PERA's funded status growth paused over the past two years, based on our current financial condition and long-term trends, we are confident that PERA will fully fund its pension plans by the statutory full-funding date of 2048. Furthermore, we are confident that PERA will reach full-funding for all its plans with no disruption in benefit payments, and at an affordable cost to Minnesota's taxpayers.

Additional information about funding and actuarial results are available in the *Notes to the Financial Statements*, the *Required Supplementary Information*, and the *Actuarial Section* of the CAFR. However, the CAFR is not a substitute for the actuarial reports available on PERA's web-site. The actuarial valuation reports should be read in conjunction with this CAFR.

This financial report is designed to provide a general overview of the Minnesota Public Employees Retirement Association's finances for all interested parties. An electronic copy of this report is available at the Agency's website at mnpera.org. Questions or requests for additional information should be directed to the PERA at 60 Empire Drive, Suite 200, St. Paul, Minnesota, 55103-2088.

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Statement of Fiduciary Net Position

As of June 30, 2020 (in thousands)

	Defined Benefit Funds		
	General Employees Fund	**Police and Fire Fund**	**Correctional Fund**
Assets			
Cash and Cash Equivalents			
Cash	$2,320	$2,204	$255
Cash Equivalents	965,704	387,451	33,814
Total Cash and Cash Equivalents	**968,024**	**389,655**	**34,069**
Receivables			
Accounts Receivable	38,144	13,084	904
Due from Other Funds	1,515	64	8
Total Receivables	**39,659**	**13,148**	**912**
Investments at Fair Value			
Bond Pool	4,605,517	1,826,327	160,323
US Equities	9,070,936	3,597,097	315,770
Broad International Stock Pool	4,415,171	1,750,845	153,697
Alternatives	3,536,096	1,402,246	123,096
Total Investments	**21,627,720**	**8,576,515**	**752,886**
Securities Lending Collateral	**1,589,801**	**630,439**	**55,343**
Capital Assets			
Equipment Net of Accumulated Depreciation	164	0	0
Property Net of Accumulated Depreciation	5,833	0	0
Total Capital Assets	**5,997**	**0**	**0**
Total Assets	**24,231,201**	**9,609,757**	**843,210**
Liabilities			
Accounts Payable	5,595	4,927	195
Payable to Other Funds	72	931	350
Accrued Compensated Absences	1,016	0	0
Bonds Payable	3,258	0	0
Securities Lending Collateral	1,589,801	630,439	55,343
Total Liabilities	**1,599,742**	**636,297**	**55,888**
Net Position Restricted for Pensions	**$22,631,459**	**$8,973,460**	**$787,322**

The accompanying notes are an integral part of the financial statements.

Volunteer Firefighter Fund	Defined Contribution Fund	Agency Fund	Total
$0	$559	$995	$6,333
5,774	3,821	31,601	1,428,165
5,774	**4,380**	**32,596**	**1,434,498**
145	122	0	52,399
0	0	0	1,587
145	**122**	**0**	**53,986**
53,229	21,707	162,053	6,829,156
41,435	49,251	508,484	13,582,973
17,586	3,186	0	6,340,485
0	0	0	5,061,438
112,250	**74,144**	**670,537**	**31,814,052**
0	**0**	**0**	**2,275,583**
0	0	0	164
0	0	0	5,833
0	**0**	**0**	**5,997**
118,169	**78,646**	**703,133**	**35,584,116**
42	87	703,133	713,979
0	234	0	1,587
0	0	0	1,016
0	0	0	3,258
0	0	0	2,275,583
42	**321**	**703,133**	**2,995,423**
$118,127	**$78,325**	**$0**	**$32,588,693**

Statement of Changes in Fiduciary Net Position

For the Fiscal Year Ended June 30, 2020 (in thousands)

	Defined Benefits Funds		
	General Employees Fund	Police and Fire Fund	Correctional Fund
Additions			
Contributions			
Employer	$509,821	$193,819	$19,043
Member	435,419	123,525	12,692
State of Minnesota	16,000	13,500	0
Total Contributions	**961,240**	**330,844**	**31,735**
Investment Income			
Net Appreciation in Fair Value of Investments	944,204	374,156	32,218
Less Investment Expense	(20,795)	(8,234)	(710)
Net Investment Income	**923,409**	**365,922**	**31,508**
From securities lending activities:			
Securities Lending Income	28,263	11,208	984
Borrower Rebates	(18,956)	(7,517)	(660)
Management Fees	(1,675)	(664)	(58)
Net Income from Securities Lending	7,632	3,027	266
Total Net Investment Income	**931,041**	**368,949**	**31,774**
Other Additions	**267**	**260**	**0**
Total Additions	**1,892,548**	**700,053**	**63,509**
Deductions			
Benefits	1,604,842	567,040	17,569
Refunds of Contributions	84,947	3,181	2,709
Administrative Expenses	12,268	924	332
Total Deductions	**1,702,057**	**571,145**	**20,610**
Net Increase (Decrease) in Net Position	**190,491**	**128,908**	**42,899**
Net Position Restricted for Pensions			
Beginning of year	22,440,968	8,844,552	744,423
End of year	**$22,631,459**	**$8,973,460**	**$787,322**

The accompanying notes are an integral part of the financial statements.

Volunteer Firefighter Fund	Defined Contribution Plan	Total
$1,051	$2,160	$725,894
0	2,002	573,638
4,580	0	34,080
5,631	**4,162**	**1,333,612**
7,767	5,291	1,363,636
(232)	(64)	(30,035)
7,535	5,227	1,333,601
0	0	40,455
0	0	(27,133)
0	0	(2,397)
0	0	10,925
7,535	**5,227**	**1,344,526**
4,802	**0**	**5,329**
17,968	**9,389**	**2,683,467**
7,057	0	2,196,508
0	3,971	94,808
298	234	14,056
7,355	**4,205**	**2,305,372**
10,613	**5,184**	**378,095**
107,514	73,141	32,210,598
$118,127	**$78,325**	**$32,588,693**

NOTE 1
Plan Description

A) Organization

Established by the Minnesota Legislature in 1931, the Public Employees Retirement Association (PERA) of Minnesota administers pension plans that serve current or former county, school, and local public employees, their survivors and dependents. Retirement plans administered by PERA provide a variety of retirement pensions, survivor, and disability benefits.

PERA's Board of Trustees is responsible for administering these plans in accordance with statutes passed by the Minnesota Legislature and has a fiduciary obligation to PERA's members, their governmental employers, the state, and its taxpayers. PERA's Board of Trustees is composed of 11 members. The state auditor is a member by statute. The governor appoints five trustees. Serving four-year terms, these five trustees represent cities, counties, school boards, retired annuitants, and the general public, respectively. The remaining five board members are elected by the PERA membership at large to serve four-year terms. Three trustees represent the general active membership, one represents Police and Fire Plan members, and one represents benefit recipients.

The board appoints an executive director to serve as chief administrative officer of PERA. With approval of the board, the director develops the annual administrative budget, determines staffing requirements, contracts for actuarial and other services, and directs the day-to-day operations of PERA. The director also serves as a member of the State Investment Advisory Council, which advises the Minnesota State Board of Investment (SBI) on the management and investment of public pension funds and other assets.

PERA is the administrator of five retirement plans. Each plan has specific membership, contribution, vesting, and benefit provisions. With certain statutory exceptions, an employee performing personal services for a governmental employer whose salary is paid, in whole or in part, from revenues derived from taxation, fees, assessments, or other sources, is a member of PERA. Plan participation is dependent on the occupation of the member. The plans, including benefit provisions and the obligation to make contributions, are established and administered in accordance with Minnesota Statutes, Chapters 353, 353D, 353E, 353G, and 356. These statutes also define financial reporting requirements.

PERA administers three cost-sharing multiple-employer defined benefit retirement plans: the General Employees Retirement Plan (accounted for in the General Employees Fund), the Public Employees Police and Fire Plan (accounted for in the Police and Fire Fund), and the Public Employees Local Government Correctional Service Retirement Plan, called the Public Employees Correctional Plan (accounted for in the Correctional Fund).

PERA administers one agent multiple-employer defined benefit retirement plan, the Statewide Volunteer Firefighter Retirement Plan (accounted for in the Volunteer Firefighter Fund) and one multiple-employer defined contribution plan, the Public Employees Defined Contribution Plan (accounted for in the Defined Contribution Fund). PERA also administers an agency fund to track the investments of qualifying entities held in an account or trust arrangement with the SBI for future long-term capital plans, long-term obligations, or postemployment benefit costs.

Figure 1 presents a summary of the laws, regulations, and administrative rules governing PERA's five retirement plans and should not be interpreted as a comprehensive explanation thereof. If there is any discrepancy between this summary and the laws governing PERA, the statutes and regulations shall govern. Specific details unique to certain aspects of the plans along with a description of the agency fund follow the summary.

Figure 1: Retirement Plan Summary

	General Employees Plan	Police and Fire Plan	Correctional Plan
STATUTORY AUTHORITY:	• *Minnesota Statutes* Chapters 353 and 356	• *Minnesota Statutes* Chapters 353 and 356	• *Minnesota Statutes* Chapters 353E and 356
DATE ESTABLISHED:	• Basic Plan 1931 • Coordinated Plan 1968 • MERF as a separate division in 2010 and merged into the plan in 2015	• 1959	• 1999
TYPE OF PENSION PLAN:	•Cost-sharing multiple-employer defined benefit	•Cost-sharing multiple-employer defined benefit	•Cost-sharing multiple-employer defined benefit
MEMBERSHIP:	• Employees of counties, cities, townships and employees of schools in non-certified positions, and other entities whose revenues are derived from taxation, fees, or assessments	• Police officers and firefighters not covered by a local relief association and all police officers and firefighters hired since 1980 • Effective July 1, 1999 the plan also covers police officers and fire fighters belonging to a local relief association that elected to merge with and transfer assets and administration to PERA	• Correctional officers serving in county and regional adult and juvenile corrections facilities • Participants must be responsible for the security, custody and control of the facilities and their inmates
APPROXIMATE # OF EMPLOYERS:	• 2,100	• 430	• 80

Volunteer Firefighter Plan	Defined Contribution Plan
• *Minnesota Statutes* Chapter 353G and 356 for the lump sum and monthly benefit divisions and *Minnesota Statutes* Chapter 424A for the monthly benefit division	• *Minnesota Statutes* Chapter 353D and Chapter 356
• 2010 for the lump sum division • 2016 for the monthly benefit division	• 1987
• Agent multiple-employer defined benefit	• Multiple-employer defined contribution
• Any municipal volunteer fire department or independent non-profit firefighting corporation	• Elected and appointed local government officials (except elected county sheriffs), city managers, emergency medical service personnel, including physicians, employed by or providing service to any participating public ambulance service who are not covered by another public or private pension and any publicly-operated ambulance service that receives an operating subsidy from a governmental entity and elects to participate in the plan
•187	• 1,100

Figure 1: Retirement Plan Summary (continued)

General Employees Plan	Police and Fire Plan	Correctional Plan
VESTING:		
• 3 years for members hired prior to July 1, 2010 • 5 years for members first hired on or after July 1, 2010	• 3 years for members hired prior to July 1, 2010 • Prorated basis from 50% after 5 years up to 100% after 10 years for members first hired on or after July 1, 2010 but before July 1, 2014 • Prorated basis from 50% after 10 years up to 100 percent after 20 years for members first hired on or after July 1, 2014	• 3 years for members hired prior to July 1, 2010 • Prorated basis from 50% after 5 years up to 100% after 10 years for members first hired on or after July 1, 2010
FINAL AVERAGE SALARY:		
• Average monthly salary over the highest paid 60 consecutive months or all months if less than 60	• Average monthly salary over the highest paid 60 consecutive months or all months if less than 60	• Average monthly salary over the highest paid 60 consecutive months or all months if less than 60
RETIREMENT ANNUITY FORMULAS:		
• Members hired prior to July 1, 1989, receive the higher of Method 1 or Method 2 formulas. Only Method 2 is used for members hired after June 30, 1989 • Method 1: The accrual rate for Coordinated members is 1.2% for each of the first 10 years of service and 1.7% for each additional year. The rates are 2.2% and 2.7%, respectively, for Basic members • Method 2: The accrual rate for Coordinated members is 1.7% for all years of service, and 2.7% for Basic members • The accrual rates for former MERF members is 2.0% for each of the first 10 years of service and 2.5% for each additional year	• Annuity accrual rate is 3.0% of average salary for each year of credited service	• Annuity accrual rate is 1.9% of average salary for each year of credited service

Volunteer Firefighter Plan	Defined Contribution Plan
•Prorated basis from 40% at 5 years to 100% at 20 years.	• No vesting requirements for member or employer contributions or earnings
N/A	N/A
•Lump-sum division benefits are based on the number of years of service multiplied by a service pension level chosen by the entity sponsoring the fire department from possible levels ranging from $500 per year of service to $10,000 per year of service •Monthly division benefits are determined at the individual plan level	N/A

General Employees Plan

The General Employees Plan encompasses two plans — the PERA Coordinated Plan and the PERA Basic Plan. The Coordinated Plan provides retirement and other benefits in addition to those supplied by Social Security Administration (SSA). The Basic Plan was PERA's original retirement plan and is not coordinated with the SSA. PERA's Basic Plan was closed to new membership in 1968, with the creation of the Coordinated Plan. Today, fewer than five Basic Plan members remain active public employees. The Minneapolis Employees Retirement Fund (MERF) was included in the General Employees Plan in June 2010, as a separate division and was merged into the plan January 1, 2015. A traditional defined benefit plan, MERF was closed to new membership in 1979. It encompasses employees of the City of Minneapolis, the Metropolitan Airports Commission, Minnesota State Colleges and Universities, and non-teaching personnel at Minneapolis schools. Annual state and employer appropriations of $37 million through 2031 ensure the plan remains self-sustaining. The active membership of MERF is also small with less than ten members.

Statewide Volunteer Firefighter Plan

Funding is provided through Minnesota Fire State Aid based on insurance premiums and administered by the Minnesota Department of Revenue and, if required, annual funding contributions from the governing body associated with the fire department. Additionally, the governing bodies are authorized by statute to make voluntary contributions to their account.

Defined Contribution Plan

Officials first elected to a governing body, such as a city council or county board after June 30, 2002, may only participate in PERA's Defined Contribution Plan. Previously, such officials could elect Coordinated Plan participation as an alternative to the Defined Contribution Plan. City managers may participate in the Defined Contribution Plan as an alternative to Coordinated Plan membership.

Agency Fund

PERA accounts for assets of qualifying government entities invested and held in accounts or trust arrangements with the SBI in an agency fund. In accordance with Minnesota Statutes, the agency fund was created in Chapter 471.6175 Trust for Postemployment Benefits and expanded in Chapter 118A.09, Additional Long-term Equity Investment Authority. The entity's purpose of the arrangement may only be for funds held to pay postemployment benefits (Chapter 471.6175) or for long-term capital plans, long-term obligations, or postemployment benefits (Chapter 118A.09).

Acting as either the account or trust administrator, PERA has established a separate account for each participating entity and charges a fee for reasonable administrative costs. An entity may provide investment direction to PERA, subject to the policies and procedures established by SBI. PERA reports to the entity on the investment returns of the invested funds and on all investment fees or costs incurred. Additionally, PERA complies with its annual reporting requirement to the state auditor. In exercising its duties as administrator, PERA may rely on representations made by the qualifying entity and has no duty to further verify qualifications, use, or intended use of the funds that are invested or withdrawn. As of June 30, 2020, there are 23 participating entities under Chapter 471.6175 and 1 participating entity under Chapter 118A.09.

B) Participating Members

Figure 2 shows membership totals in PERA's multiple-employer defined benefit plans as of June 30, 2020. In addition, the Defined Contribution Plan serves approximately 8,000 members.

Figure 2: PERA Membership — Defined Benefit Plans

	General Employees	Police and Fire	Correctional	Volunteer Firefighter	Total
Retirees and beneficiaries receiving benefits	108,492	11,201	1,443	136	121,272
Terminated employees entitled to benefits/ refunds but not yet receiving them:					
Vested	64,672	1,686	3,637	968	70,963
Non-Vested	79,069	894	2,184	—	82,147
Current, active employees:					
Vested	92,005	9,207	2,095	2,358	105,665
Non-Vested	61,736	2,818	1,760	1,415	67,729
Total	405,974	25,806	11,119	4,877	447,776

C) Benefit Provisions - Cost-sharing Multiple-Employer Defined Benefit Retirement Plans

PERA's defined benefit plans are tax qualified plans under Section 401(a) of the Internal Revenue Code. PERA provides retirement and disability benefits to members, as well as survivors upon the death of eligible members.

Retirement benefits are based on a member's highest average salary for 60 consecutive months of allowable service, age, and years of credit at termination of service. A reduced retirement annuity is also available to eligible members seeking early retirement. Members of PERA's defined benefit plans receive one service credit for each month which they are paid. Individuals may earn a maximum of 12 service credits per year. Salary used in retirement and disability benefit calculations is the average monthly salary over an individual's 60 highest-paid consecutive months of public service (high-five salary), or all months of service if less than 60.

Members of the PERA General Employees Plan, Police and Fire Plan, and Correctional Plan may select from several types of retirement benefits.

Single-Life Pension — A single-life pension is a lifetime annuity that ceases upon the death of the retiree. No survivor benefit is payable.

Survivor Options — Upon retirement, members may choose from one of four survivor options. All of these pensions are payable for the lifetime of the retiree. At the time of the retiree's death, the designated survivor begins to receive monthly benefit payments at varying levels for his or her lifetime. Depending on the survivor option chosen by the member, survivor payments are at a 25, 50, 75, or 100 percent level of that received by the member at retirement. Selection of a survivor option will result in a reduced pension benefit from the single-life benefit level. The amount of the reduction depends on the age of both the retiring member and the survivor. Due to the passing of the 2018 Omnibus Retirement Bill, plan assumptions, including mortality and investment expectations, were updated and resulted in minimal changes to survivor option reduction factors.

All PERA plans' survivor factors were updated for benefits beginning July 1, 2019. All survivor pension options incorporate an "automatic bounce back" feature. This returns the amount of the pension to the level of the single-life benefit in the event the designated survivor predeceases the retiree. The cost of this protection is borne by the funds, not by the retiree.

Deferred Pension — A vested member who terminates public service may leave contributions in the fund(s) in which he or she participated and qualify for a pension at retirement age. For members who terminated public service prior to January 1, 2012, the benefit amount calculated as of the date of termination will increase at a rate of 1 percent per year, compounded annually. Benefit increases accrued until December 31, 2018, at which point all benefit increases are discontinued. For members who terminate public service after December 31, 2011, there is no benefit growth.

Beginning June 30, 2018, if a deferred member returns to the same PERA plan, pension benefit increases will no longer apply to the entire benefit calculation.

Combined Service Annuity and Proportionate Pensions — Retiring members may elect to combine service in a PERA-covered position with service in any of the other eligible Minnesota retirement plans and qualify for a retirement benefit from each plan in which they participated. These covered plans are designated by statute. Vested members qualify for a combined service pension if they have six or more months of service in each covered plan and have not begun to receive a benefit from any of the applicable plans. The retirement annuity from each plan must be based upon the allowable service, accrual rates, and average salary in the applicable plan; any exceptions are specified in statute.

Proportionate Annuities — Members who retiree at or over their Social Security full retirement age with at least one year of service qualify for a proportionate pension in the applicable Plan. Benefits are based on the formula of each Plan.

Phased Retirement Option — The Phased Retirement Option (PRO) is a tool that allows employers to meet their workforce needs while employees transition into full retirement. The PRO permits an active member of the General Plan, who is at least age 62, to receive a PERA retirement annuity without a formal termination of employment. However, members must substantially reduce their work hours while participating in the PRO agreement. Availability of positions under this program is at the discretion of the employing unit. Any earnings under the PRO position are not subject to the postretirement annual earnings limits.

Retirement Annuity Formula

General Employees Plan — Method 1 provides that members are eligible for a normal retirement annuity if they are age 65 or over with at least one year of public service or their age plus years of public service equal 90 (Rule of 90) for members who were first hired prior to July 1, 1989. A reduced retirement annuity is payable as early as age 55 with three or more years of service. The reduction is 0.25 percent for each month under age 65. A member with 30 or more years of service may retire at any age with a reduction of 0.25 percent for each month a member is under age 62.

Method 2 provides for a normal retirement annuity at age 65 for members first hired prior to July 1, 1989, or age 66 (the age for unreduced Social Security benefits) for those first hired into public service on or after that date. Early retirement may begin at age 55 with an actuarial reduction for members retiring prior to full retirement age. Members beginning to receive an annuity on or after July 1, 2019, will have actuarial reduction factors phased in over five years that reflect the true actuarial cost of early retirement. These factors recognize recent updates to plan assumptions, including mortality and investment expectations, as well as the removal of the augmentation subsidy.

Police and Fire Plan — A normal retirement annuity is earned when members meet the following conditions: age 55 and vested, or age plus years of service total at least 90 if first hired prior to July 1, 1989. A reduced retirement annuity is available to members between the ages of 50 and 55. Under legislation enacted in the 2013 legislative session, the reduction for Police and Fire Plan early retirement began increasing incrementally in July 2014, culminating to a 5 percent per year reduction as of July 2019.

Correctional Plan — A normal retirement annuity is earned when members meet the following conditions: age 55 and vested, or age plus years of service total at least 90 if first hired prior to July 1, 1989. Early retirement may begin at age 50 with an actuarial reduction in a member's retirement annuity.

Postretirement Increases

General Employees Plan — Annuities, disability benefits, and survivor benefits are increased effective every January 1. Beginning in 2019, the postretirement increase will be equal to 50 percent of the the cost-of-living adjustment (COLA) announced by the SSA, with a minimum increase of at least 1.0 percent and a maximum of 1.5 percent. Recipients that have been receiving the annuity or benefit for at least a full year as of the June 30 before the effective date of the increase will receive the full increase. For recipients receiving the annuity or benefit for at least one month but less than a full year as of the June 30 before the effective date of the increase will receive a reduced prorated increase. For members retiring on January 1, 2024, or later, the increase will be delayed until normal retirement age (age 65 if hired prior to July 1, 1989, or age 66 for individuals hired on or after July 1, 1989). Members retiring under Rule of 90 are exempt from the delay to normal retirement.

Police and Fire Plan — Annuities, disability benefits, and survivor benefits are increased effective every January 1. Beginning in 2019, the postretirement increase will be fixed at 1 percent. Recipients that have been receiving the annuity or benefit for at least 36 months as of the June 30 before the effective date of the increase will receive the full increase. For recipients receiving the annuity or benefit for at least 25 months but less than 36 months as of the June 30 before the effective date of the increase will receive a reduced prorated increase.

Correctional Plan — Annuities, disability benefits, and survivor benefits are increased effective every January 1. Beginning in 2019, the postretirement increase will be equal to 100 percent of the COLA announced by SSA, with a minimum increase of at least 1 percent and a maximum of 2.5 percent. If the plan's funding status declines to 85 percent or below for two consecutive years or 80 percent for one year, the maximum will be lowered from 2.5 percent to 1.5 percent. Recipients that have been receiving the annuity or benefit for at least a full year as of the June 30 before the effective date of the increase will receive the full increase. For recipients receiving the annuity or benefit for at least one month but less than a full year as of the June 30 before the effective date of the increase will receive a reduced prorated increase.

The benefit provisions stated in the preceding paragraphs of this section are current provisions and apply to active plan participants. Vested, terminated employees who are entitled to benefits but are not receiving them yet are bound by the provisions in effect at the time they last terminated public service.

D) Benefit Provisions – Statewide Voluntary Firefighter Plan

PERA's Statewide Voluntary Firefighter defined benefit plan is tax qualified plans under Section 401(a) of the Internal Revenue Code. PERA provides service pensions to members and survivor benefits as well, upon the death of plan members.

An active member of the plan is entitled to a service pension when they have been separated from service for at least 30 days, have reached the age of 50, and have completed at least five years of good time service credit with the fire department as a member of the lump-sum retirement division or, if a member of the monthly benefit retirement division, has completed the minimum vesting requirement as specified in the retirement benefit plan document of the former relief association applicable to the fire department.

The service pension from the lump-sum retirement division is based on completed years of service in the department, the service pension level in effect for the department at termination, and the nonforfeitable percentage of the service pension as specified in statute. The service pension from the monthly benefit retirement division is specified in the retirement benefit plan document of the former relief association applicable to the fire department.

E) Benefit Provisions – Defined Contribution Plan

The Defined Contribution Plan is a tax qualified plan under Section 401(a) of the Internal Revenue Code and all contributions by or on behalf of employees are tax deferred until time of withdrawal. Plan benefits depend solely on amounts contributed to the plan plus investment earnings, less administrative expenses. Employer and employee contributions are combined and used to purchase shares in one or more of the seven accounts of the Minnesota Supplemental Investment Fund administered by the SBI. Investment options include the Broad International Stock Fund, U.S. Stock Actively Managed Fund, U.S. Stock Index Fund, Balanced Fund, Bond Fund, Stable Value Fund, and Money Market Fund. PERA receives 2 percent of employer contributions paid during the year, plus 0.25 percent of the assets in each member's account each year for administering the plan.

At the time of retirement or termination, PERA distributes the market value of a member's account to the member or transfers it to another qualified plan or individual retirement account. Upon the member's death, PERA distributes the value of the account to the member's designated beneficiary.

F) Earnings Limitation

Retirees who return to work in a PERA covered position are subject to the same earnings limitations as Social Security recipients. Benefits are reduced if these limits are exceeded, with the amount held in escrow. The retiree may request repayment of these funds one year after leaving the position. If reemployment extends through the end of a calendar year, the deductions from that year may be reclaimed one year later.

The earnings limitation only applies to PERA covered employment. Self or private employment and elected official service will not result in a benefit reduction for retirees. Earnings limits are waived for Coordinated Plan members who begin receiving benefits under a PRO agreement. The Defined Contribution Plan and the Volunteer Firefighter Plan only provide lump-sum benefits, there are no earnings limits.

G) Disability Benefits

Members may be eligible for benefits from PERA if they are unable to work because of a physical or mental disability. Disability is defined by statute, and PERA may require periodic medical examinations of those receiving these benefits. Neither the Defined Contribution Plan nor the Volunteer Firefighter Plan has specific disability benefits.

Disability benefit calculations are based upon years of service and average high-five salary for Coordinated Plan members. For Police and Fire Plan members, there is a minimum duty-related disability benefit of 60 percent of salary. The minimum duty-related disability benefit is 47.5 percent for Correctional Plan members. Disability under any other circumstances results in a minimum benefit of 45 percent of salary for Police and Fire Plan members and 19 percent for Correctional Plan members. A duty-related disability benefit will only be awarded if the disabling event occurred while the member was engaged in hazardous activities inherent to the occupation.

Coordinated Plan members qualify for disability when vested for a retirement benefit and by meeting the statutory definition. Police and Fire Plan and Correctional Plan members qualify by meeting the definition with one or more years of service if disabled outside the line of duty. If disabled in the line of duty, there is no minimum service requirement.

H) Survivor Benefits

PERA also provides survivor benefits for families of members who qualify for such coverage should they die before commencing retirement benefit payments. The qualifications and types of benefits vary with each plan. As of August 1, 2013, Minnesota recognizes same-sex marriage. PERA's governing statutes make no distinction concerning the gender of a spouse, and the agency therefore follows the state's definition of a valid marriage.

A lifetime survivor benefit is available to the surviving spouse of a General Employees Plan, Correctional Plan, or Police and Fire Plan member. For Police and Fire Plan members, this benefit is based on either 50 percent of the average of the full-time monthly base salary rate in effect during the last six months of allowable service or a formula using the member's total years of service, high-five salary, age at death, and age of the spouse. The surviving spouse benefit for General Employees Plan and Correctional Plan members is only based on the formula. This benefit is payable to the spouse of a deceased member for life, even upon remarriage. Automatic lifetime survivor benefits are also available to the spouse of Police and Fire Plan members who suffer total and permanent duty disability. Survivor benefits for other disabled members are only available if the member chooses a survivor option on their disability benefit.

For the surviving spouse of a General Employees Plan or Correctional Plan member, there are alternative term-certain benefits of 10, 15, or 20 years duration. The monthly payment, however, may not exceed 75 percent of the member's average highest 60 months of consecutive salary. Survivor benefits are immediately suspended for any survivor charged with causing the death of a PERA member. The benefit is permanently revoked upon conviction of such a crime.

Dependent children of active or disabled Police and Fire Plan members are eligible for benefits until age 18, or age 23 if full-time students. In this case, the maximum family benefit is 70 percent of the member's average monthly salary. If a General Employees Plan or Correctional Plan member dies and there is no surviving spouse, any children under age 20 qualify to receive a monthly term-certain benefit.

Instead of a monthly benefit, the surviving spouse, if a designated beneficiary, may elect a refund of any remaining employee contributions in the account, plus interest. However, a refund may not be elected if there are dependent children who are eligible for benefits.

The Volunteer Firefighter Plan provides for payment of the member's accrued benefits to a surviving spouse or, if none, to minor children or, finally, the member's estate, based on retirement at age 50. Similarly, the Defined Contribution Plan provides for payment of the account balance to beneficiaries.

I) Refunds

Refunds of contributions are available at any time to members who terminate public service and have not yet begun receiving a pension. The refund includes employee contributions plus interest, compounded annually. The interest rate is dependent on the timeframe in which the member contributions were received. The interest rate applied is 6 percent prior to June 30, 2011; 4 percent July 1, 2011 through June 30, 2018; and 3 percent July 1, 2018, and thereafter. Employer contributions are not refundable to the member or beneficiary.

A refund of employee contributions plus interest may also be elected by the designated beneficiary of a member or former member who dies before reaching retirement. If there is no beneficiary, payment is made to the surviving spouse or, if none, to the estate of the deceased member or former member.

If an annuitant or benefit recipient dies before all employee contributions are paid in the form of a pension or benefit, the remaining balance would be paid in the same manner outlined for beneficiaries. No interest is paid to beneficiaries on the balance in an account if the member was receiving retirement benefits.

NOTE 2

Summary of Significant Accounting Policies

A) Reporting Entity

PERA functions as a separate statutory entity. PERA maintains rights to sue or be sued in its own name and to hold property in its own name. For financial reporting purposes, PERA is considered a pension trust fund of the State of Minnesota and is included in the State's *Comprehensive Annual Financial Report* with its fiduciary funds. PERA does not have any component units.

B) Basis of Presentation and Basis of Accounting

The accompanying financial statements are prepared in accordance with accounting principles generally accepted in the United States of America (GAAP) that apply to governmental accounting for fiduciary funds. Financial statements for all funds are prepared using the accrual basis of accounting. Employee and employer contributions are recognized as revenues when due, pursuant to formal commitments and statutory requirements. Expenses are recorded when the corresponding liabilities are incurred, regardless of when payment is made. Benefits and refunds are recognized when due and payable in accordance with the terms of each plan.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. Actual results could differ from those estimates.

C) Cash and Cash Equivalents

For PERA's defined benefit and defined contribution funds, cash includes cash on deposit in the state's treasury, which is commingled with other state funds. Cash on deposit consists of year-end receipts not yet processed as of the investment cutoff on June 30. The majority of PERA's cash is invested as part of an investment pool with the SBI. PERA's investment in the cash pools is reported as a cash equivalent. In the Agency Fund, cash consists of recent receipts held by the SBI that have not yet been invested in one of the three investment pools available.

D) Receivables

Accounts receivable represents plan member and employer contributions which are received after fiscal year end for services rendered prior to fiscal year end. For the General Employees Fund, the receivable also includes an employer supplemental contribution of $21 million billed in fiscal year 2020 but not due from employers until fiscal year 2021. For the Police and Fire Fund, the receivable includes an employer supplemental contribution of $7.7 million due in fiscal year 2020 but not paid until 2021.

Due from other funds represents the reallocation of administrative expenses, which is done annually in October once the fiscal year's expenses have been finalized.

E) Investments

Investment Policy

The Minnesota State Board of Investment (SBI) is made up of Minnesota's governor, state auditor, secretary of state, and attorney general. The authority for establishing and amending investment policy decisions is granted to the SBI in *Minnesota Statutes*, Section 11A.04. The legislature has also established a 17-member Investment Advisory Council (IAC) to advise the Board and its staff on investment-related matters. PERA's executive director is a permanent member of the IAC. *Minnesota Statutes*, Section 11A.24, broadly restricts retirement fund investments to obligations and stocks of United States and Canadian governments, their agencies and their registered corporations; short-term obligations of specified high quality; restricted participation as a limited partner in venture capital, real estate or resource equity investments; restricted participation in registered mutual funds; and some qualified foreign instruments. Short-term investment securities include investments that have high credit quality and are highly liquid. The securities have a low-risk, low-return profile and include U.S. Government Treasury bills, bank certificates of deposit, bankers' acceptances, corporate commercial paper, and other money market instruments.

Pursuant to *Minnesota Statutes*, Section 11A.14, the state's retirement plan assets are commingled in various pooled investment accounts, administered by SBI. As of June 30, 2020, the participation shares in the combined retirement fund at fair value totaled approximately 31.8 percent for the General Employees Fund, 12.6 percent for the Police and Fire Fund, and 1.1 percent for the Correctional Fund.

Investments in the pooled accounts, including assets of the Defined Contribution Fund and the Agency Fund, are reported at fair value. Fair value is the proportionate share of the combined market value of the investment portfolio of the SBI investment pool in which the funds participate. All securities within the pools are valued at fair value except for U.S. Government short-term securities and commercial paper, which are valued at market less accrued interest. Accrued interest is recognized as short-term income. Note 3 provides additional disclosures on fair value reporting of investments.

Investment income is recognized as earned. Accrued investment income of the pooled investment accounts is included in participation in the accounts. Gains and losses on sales or exchanges are recognized on the transaction date.

For financial reporting purposes, the cost of security transactions is included in the transaction price. Investment expenses include administrative expenses of the SBI to manage the state's investment portfolio and investment management fees paid to the external money managers and the state's master custodian for pension plan assets. These expenses are allocated to the funds participating in the pooled investment accounts. Information on specific investments owned by the pooled accounts, investment activity, currency risk, interest rate risk, and a detailed schedule of fees and commissions by brokerage firm,along with the number of shares traded, total commissions, and commissions per share for the pooled investment accounts may be obtained from the SBI, 60 Empire Drive, Suite 355, Saint Paul, Minnesota 55103.

The SBI investment policy may be amended by a majority vote of its Board. The policy outlines the investment philosophy and guidelines within which the Combined Fund's investments will be managed.

Asset Allocation

To match the long-term nature of pension obligations, the SBI maintains an asset allocation for the Combined Funds that includes allocations to Public Equities (Domestic and International), Fixed Incomes (Core Bonds and Treasuries), Private Markets, and Cash Equivalents.

As of June 30, 2020, the asset allocation is as follows:

Public Equities		53.0%
Domestic Equities	*35.5%*	
International Equities	*17.5%*	
Fixed Incomes		20.0%
Core Bonds	*10.0%*	
Treasuries	*10.0%*	
Private Markets		25.0%
Cash Equivalents		2.0%

If the allocation to Private Markets is less than the 25 percent allocation target, the uninvested portion is invested in Public Equities. When the actual asset allocation deviates beyond specified ranges, assets are rebalanced to achieve the long-term allocation targets.

Description of Significant Investment Policy Changes During the Year

The following policy changes were approved at the end of Fiscal Year 2020 and will be implemented during Fiscal Year 2021.

- The Fixed Income Program shall be restructured to include a 20% combined Cash plus Short Duration Treasury Ladder allocation; a 40% Treasury Protection allocation; and a combined 40% Core/Core-plus and Return Seeking Bond allocation.
- The Total Combined Funds allocation to the Fixed Income Program shall be modified to 25%, which will be comprised of the current 20% allocation to Core Bonds and Treasuries, the current 2% allocation to Cash, and a transfer of 3% from Public Equities.
- The policy for the upper limit for Private Markets Market Value plus Unfunded Commitments shall be temporarily increased to a maximum of 45% from 35% currently, and SBI staff must present a proposed new permanent recommendation for the management of Unfunded Commitments by the end of Fiscal Year 2021. The temporary policy maintains the current target Market Value level of 25%, but allows the portfolio to hold private market investments up to the current statutory maximum Market Value level of 35%.

The following strategies were approved in Fiscal Year 2020 for implementation in Fiscal Year 2021.

- The segregation of the Unallocated Investment Funds associated with the Private Markets/Alternatives Program from the dedicated Public Equities Program, including the development of an investment strategy using physical securities in combination with an overlay program fully collateralized by cash.
- The use of cash overlay strategies to facilitate rebalancing and enhance portfolio liquidity.
- The use of a currency overlay strategy to more effectively manage the portfolio's non-dollar exposure.
- Implement a procedure, consistent with all applicable fiduciary duties, to remove publicly traded companies which derive 25% or more of their revenue from the extraction and/or production of thermal coal as authorized investments in the SBI's Combined Funds investment portfolio.

Future Asset Allocation by the End of June 30, 2021:

Public Equity		50.0%
Domestic Equity	*34%*	
International Equity	*17%*	
Fixed Income		25.0%
Core Bonds	*10%*	
Treasuries	*10%*	
Cash and Laddered Bonds	*5%*	
Private Markets		25.0%

If the invested market value for Private Markets is less than the 25% allocation target, the difference will be invested using a strategy comprised of physical securities in combination with an overlay program fully collateralized by cash.

Rate of Return

The long-term expected return on investment is based on the last asset allocation study completed by the SBI in 2016. The SBI has historically undertaken an asset allocation study about once every five years. The long-term expected rate of return on pension plan investments was determined using a building-block method. Best estimates for expected future real rates of return (expected returns, net of inflation) were developed for each asset class using both long-term historical returns and long-term capital market expectation from a number of investment management and consulting organizations. The asset class estimates and the target allocations were then combined to produce a geometric, long-term expected real rate of return for the portfolio. Inflation expectations were applied to derive the nominal rate of return for the portfolio. The target asset allocation and best estimates of geometric real rates of return for each major asset class included in the plan's target asset allocation as of June 30, 2020 are summarized in **Figure 3**.

Figure 3: Target Asset Allocation and Long-term Expected Real Rate of Return by Asset Class

For the Combined Funds: Asset Class	Target Allocation	Long-term Expected Real Rate of Return (Geometric)
Bond Pool	20.0%	0.75%
U.S. Equities	35.5%	5.10%
Broad International Stock Pool	17.5%	5.30%
Alternatives	25.0%	5.90%
Cash Equivalents	2.0%	0.00%
	100%	

(1) Bond Pool includes the Bond Fund, Transition Account and Treasuries Pool.

(2) US Equities includes U.S. Stock Index Fund, Large Cap Active and Passive Funds, and Small Cap Active and Passive Funds.

(3) Broad International Stock Pool includes Broad International Stock Fund.

(4) Alternatives includes the Alternative Investment Pool.

(5) Cash Equivalents includes the Defined Benefit Money Market.

Statewide Voluntary Firefighter Fund

Asset Class	Target Allocation	Long-term Expected Real Rate of Return (Geometric)
Bond Pool	45%	0.75%
U.S. Equities	35%	5.10%
Broad International Stock Pool	15%	5.30%
Cash Equivalents	5%	0.00%
Total	**100%**	

The money-weighted rate of return is a method of calculating period-by-period returns on pension plan investments that adjusts for the changing amounts actually invested. For purposes of this Statement, the money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expenses. Since PERA's various funds have different cash flows throughout the year, they have different money-weighted rates of return. The money-weighted rate of return for each fund is presented in **Figure 4**.

Figure 4: Money-Weighted Rate of Return

Fund	Fiscal Year 2020
General Employees Fund	4.29%
Police and Fire Fund	4.24%
Correctional Fund	4.24%
Volunteer Firefighter Fund	6.83%

F) Capital Assets

Capital assets, generally assets with a cost in excess of $30,000 and a useful life greater than one year, are capitalized at cost at the time of acquisition (see Note 4). Depreciation is computed on a straight-line basis over the estimated useful life of the related assets. The estimated useful lives are 3 to 10 years for furniture and equipment, and 40 years for the building. PERA's threshold for intangible assets is $1,000,000. PERA did not have any intangible assets in fiscal year 2020.

G) Accrued Compensated Absences

PERA's employees accrue vacation leave, sick leave, and compensatory leave at various rates within limits specified in collective bargaining agreements. Accumulated amounts for compensated absences are accrued when incurred. Such leave is liquidated in cash primarily at the time of termination of employment. The total liability at June 30, 2020, is $1,016,000. Of this, $112,000 is considered a short-term liability and $904,000 is considered a long-term liability. The total increased by $4,000 during fiscal year 2020.

H) Administrative Expenses

PERA's administrative expenses are paid during the year from the General Employees Fund. At year-end, a portion of the expenses are allocated to the Police and Fire Fund and the Correctional Fund, based on membership counts. The Defined Contribution Fund reimburses the General Employees Fund to the extent of fees collected for recovery of administrative costs. The Volunteer Firefighter Fund reimburses the General Employees Fund $30 per firefighter. The applicable amounts are reported as expenses and reported on the *Statement of Fiduciary Net Position* as a payable to other funds or due from other funds. Administrative costs are funded from investment income for the defined benefit plans.

NOTE 3
Deposits and Investment Risk Disclosures

A) Fair Value Reporting

GASB Statement No. 72, Fair Value Measurement and Application, sets forth the framework for measuring the fair value of investments based on a hierarchy of valuation inputs. The hierarchy has three levels:

Level 1: Market valuation approach using quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date.

Level 2: Market valuation approach using inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. Inputs for Level 2 include:

- Quoted prices for similar assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in inactive markets;
- Inputs other than quoted prices that are observable for the asset or liability;
- Inputs derived principally from or corroborated by observable market data by correlation or other means.

Level 3: Unobservable inputs for the asset or liability. Unobservable inputs reflect the SBI's assumptions about the inputs that market participants would use in pricing an asset or liability. Assets classified as a Level 3 typically use the cost approach, income approach, or consensus pricing for a valuation technique.

Net Asset Value (NAV): Investments that do not have a readily determinable fair value are measured using NAV per share (or its equivalent) as a practical expedient, and are not classified in the fair value hierarchy.

Cash and cash equivalents (investments with less than 12 months to maturity) are not leveled per GASB Statement No. 72. Therefore cash and short term investments are not included in **Figure 5**. All non-cash investments, including derivative investments that are not hedging derivatives, are required to be measured at fair value on a recurring basis. The SBI maintains investment pools that participants can invest in; participants own a proportionate share of the investment pools. The fair value of the investment pools is priced daily by the SBI custodian, when a daily price is available, by using independent pricing sources.

In **Figure 5**, Level 3 investments primarily consist of assets where the asset is distressed, or there is not an active market. The fair value of the assets measured at NAV have been determined using the March 31, 2020, values, adjusted for cash flows. The investments measured at NAV are typically not eligible for redemption. Distributions are received as underlying investments when the funds are liquidated, which occur over the life of the investment.

The SBI has 68 investments that are valued at NAV that are currently in the liquidation mode, totaling 3 percent of the NAV value. The majority of the remaining value of investments in liquidation mode will be returned to the SBI within a time period of three to five years. PERA's proportionate share of the unfunded commitments (funds committed to an investment but not yet transferred to the General Partner (Investor)) valued at NAV total $4,579,676,037.

Figure 5: Fair Value of PERA Investments As of June 30, 2020 (in thousands)	Fair Value	Level 1	Level 2	Level 3
Equity Investments				
Common Stock	$18,578,064	$18,570,595	$7,382	$87
Real Estate Investment Trust	524,477	524,477	0	0
Other Equity	635,146	397,740	5,571	231,835
Equity Total	19,737,687	19,492,812	12,953	231,922
Fixed Income Investments				
Government Issues	3,974,514	0	3,963,527	10,987
Corporate Bonds	1,374,953	0	1,374,932	21
Mortgage-Backed Securities	1,234,629	0	1,224,860	9,769
Asset-Backed Securities	225,134	0	203,292	21,842
Other Debt Instruments	9,685	0	9,685	0
Fixed Income Total	6,818,915	0	6,776,296	42,619
Investment Derivatives - Options	225	227	0	(2)
Total Investments by Fair Value	$26,556,827	$19,493,039	$6,789,249	$274,539

Investments Measured at the Net Asset Value (in thousands)	NAV	Percent of NAV	Number of Investments	Unfunded Commitments
Private Equity	$3,262,165	65 %	159	$3,086,075
Real Estate	472,654	9 %	28	550,956
Real Assets	775,564	15 %	36	353,768
Private Credit	537,316	11 %	41	588,877
NAV total	$5,047,699	100 %		$4,579,676

The following are explanations of investment types listed in **Figure 5**.

Equity Investments

Common Stock: Securities representing equity ownership in a corporation, providing voting rights, and entitling the holder to a share of the company's success through dividends and/or capital appreciation.

Real Estate Investment Trust (REIT): An investment pool established by a group of investors for the purpose of investing in real estate or mortgages. REITs are generally exempt from federal taxes, provided that 95 percent of earned income is distributed and that the various investors are not treated differently.

Other Equity: Includes Preferred Stock, Depository Receipts, Limited Partnerships Units, Common Stock Units, and Mutual Funds.

Fixed Income Investments

Government Issue: Securities or bonds issued by any of the 50 states, the territories and their sub- divisions, counties, cities, towns, villages and school districts, agencies (such as authorities and special districts created by the states), and certain federally-sponsored agencies such as local housing authorities.

Corporate Bonds: Debt obligations issued by corporations as an alternative to offering equity ownership by issuing stock. Like most municipal bonds and Treasuries, most corporate bonds pay semi-annual interest and promise to return the principal when the bonds mature. Maturities range from 1 to 30 years.

Mortgage-Backed Securities: An asset-backed security that is secured by a mortgage or collection of mortgages. The mortgages are sold to a government agency or investment bank that will package the loans together into a security that can be purchased by investors.

Asset-Backed Securities: Bonds or notes backed by financial assets, including auto loans and credit card receivables.

Other Debt Instruments: Includes Short Term Investment Funds (STIF) type instruments.

Investments Derivatives

Investment Derivatives: Options -- Futures. A contract that gives the holder the right to buy from or sell to the writer a specified amount of securities at a specified price, good for a specified period of time.

Investments Measured at Net Asset Value (NAV)

Private Equity: The private equity investment strategy is to establish and maintain a broadly diversified private equity portfolio composed of investments that provide diversification by industry type, stage of corporate development and location. The SBI has 159 Private Equity investments representing 65% of the NAV value.

Real Estate: The real estate investment strategy calls for the establishment and maintenance of a broadly diversified real estate portfolio composed of investments that provide overall diversification by property type and location. The main components of this portfolio consist of investments in closed-end commingled funds. The remaining portion of the portfolio may include investments in less diversified, more focused (specialty) commingled funds and REITs. The SBI has 28 Real Estate investments representing 9% of the NAV value.

Real Assets: The strategy for real assets investments is to establish and maintain a portfolio of real assets investment vehicles that provide an inflation hedge and additional diversification. Real assets investments will include oil and gas investments and energy service industry investments that are diversified by geographic area as well as by type. The SBI has 36 Real Assets investments representing 15% of the NAV value.

Private Credit: The strategy for private credit investments is to target funds that typically provide a current return and may have an equity component. Structures such as subordinated debt investments and mezzanine investments are typical yield-oriented investments. The SBI has 41 Private Credit investments representing 11% of the NAV value.

B) Custodial Credit Risk

Custodial credit risk for cash deposits and investments is the risk that, in the event of a bank or custodian failure, PERA will not be able to recover the value of its investments or collateral securities. *Minnesota Statutes*, Section 9.031, requires that cash deposits be secured by depository insurance or a combination of depository insurance and collateral securities held in the state's name by an agent of the state. Such insurance and collateral shall be in amounts sufficient to ensure that deposits do not exceed 90 percent of the sum of the insured amount and the market value of the collateral. Throughout fiscal year 2020, the combined depository insurance and collateral was sufficient to meet legal requirements and secure all PERA deposits, eliminating exposure to custodial credit risk.

C) Credit Risk

Credit risk is the risk that an issuer or counterparty to an investment will be unable to fulfill its obligations to the holder of the investment. The SBI has policies designed to minimize credit risk. They may invest funds in governmental obligations provided the issue is backed by the full faith and credit of the issuer or the issue is rated among the top four quality rating categories by a nationally recognized rating agency. They may invest funds in corporate obligations provided the issue is rated among the top four quality categories by a nationally recognized rating agency. They may also invest in unrated corporate obligations or in corporate obligations that are not rated among the top four quality categories provided that:

- The aggregate value of these obligations may not exceed 5 percent of the fund for which the state board is investing;
- Participation is limited to 50 percent of a single offering; and
- Participation is limited to 25 percent of an issuer's obligations.

The SBI may also invest in bankers' acceptances, deposit notes of U.S. banks, certificates of deposit, mortgage securities, and asset-backed securities rated in the top four quality categories by a nationally recognized rating agency. Commercial paper must be rated in the top two quality categories.

PERA's share of SBI's exposure to credit risk, based on the lower of Moody's or S&P Quality Ratings for debt securities and short-term investments, is shown in **Figure 6**. If a security is rated by only Moody's or S&P that rating will be used.

Figure 6: Credit Risk Exposure (in thousands)

Quality Rating	Fair Value as of June 30, 2020
AAA	$199,785
AA	5,020,481
A	190,768
BBB	920,967
BB	405,786
B	46,592
CCC	11,092
CC	5,507
C	1,133
D	308
Unrated Corporate	1,919,232
Total	$8,721,651

D) Concentration of Credit Risk

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of a government's investment in a single issuer. The SBI determined concentration of credit risk based on security identification number. PERA does not have exposure to a single issuer that equals or exceeds 5 percent of the overall portfolio and, therefore, there is no material concentration of credit risk.

E) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates of debt investments could adversely affect the fair value of an investment. The SBI does not have a policy on interest rate risk. Debt securities are held in external investment pools and PERA's share has the weighted average maturities shown in **Figure 7.**

Figure 7: Interest Rate Risk

Security	Weighted Average Maturity (in years)
Short-Term Investment Securities	0.01
Mortgage Backed Securities	4.10
Collateralized Mortgage Obligations	5.36
Asset-Backed Securities	5.57
Agency Securities	7.76
Yankee Bonds	7.87
Corporate Debt Obligations	10.91
Foreign Country Bonds	11.02
U.S. Treasuries	15.69
Municipal Debt Obligations	17.77

F) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates between the U.S. dollar and foreign currencies could adversely affect the fair value of an investment. Most foreign currency risk resides within the SBI's international equity investment holdings. In order to reduce foreign currency risk, the SBI has developed the following policies. Government obligations, including guaranteed or insured issues of the International Bank for Reconstruction and Development, the Inter-American Development Bank, the Asian Development Bank, and the African Development Bank, must pay interest and principal in U.S. dollars. The principal and interest of obligations of corporations, including those corporations incorporated or organized under the laws of the Dominion of Canada or any province thereof, must also be paid in U.S. dollars. PERA's share of foreign security investments at June 30, 2020**,** was distributed among the currencies shown in **Figure 8.**

Figure 8: Foreign Currency Risk (fair value in thousands)

Currency	Cash	Equity	Fixed Income
Euro Currency	$1,561	$1,891,320	$8,029
Japanese Yen	5,243	1,073,810	0
Pound Sterling	1,243	598,981	917
Hong Kong Dollar	756	472,582	0
Swiss Franc	-4,010	441,568	0
Canadian Dollar	739	401,577	11,166
Australian Dollar	259	276,573	0
South Korean Won	41	179,928	0
New Taiwan Dollar	627	174,763	0
Swedish Krona	226	126,316	0
Danish Krone	8	121,804	0
Brazilian Real	114	65,216	0
Yuan Renminbi	161	56,477	0
Singapore Dollar	258	49,321	0
South African Rand	82	42,055	0
Indonesian Rupiah	156	25,993	0
Thailand Baht	534	25,083	0
Norwegian Krone	1	23,679	0
Mexican Peso	-13	19,378	0
New Israeli Sheqel	34	18,608	0
Polish Zloty	1	13,585	0
Malaysian Ringgit	43	12,568	0
New Zealand Dollar	0	12,086	0
Turkish Lira	0	11,858	0
Hungarian Forint	1	10,220	0
Philippine Peso	14	7,005	0
Czech Koruna	0	6,307	0
Uae Dirham	0	5,052	0
Qatari Rial	0	4,154	0
Chilean Peso	143	2,638	0
Colombian Peso	142	2,247	0
Romanian Leu	0	1,627	0
Egyptian Pound	0	604	0
Indian Rupee	1	0	0
Moroccan Dirham	0	0	0
Total	**$8,365**	**$6,174,983**	**$20,112**

G) Derivative Financial Instruments

On behalf of PERA, the SBI invests in various types of derivative financial instruments. Derivatives are defined as any financial arrangement between two parties that has value based on or derived from future price fluctuations. The derivative financial instruments that the SBI enters into include futures, options, stock warrants and rights, currency forwards, and synthetic guaranteed investment contracts.

Minnesota Statutes, Section 11A.24, provides that any agreement for put and call options and futures contracts may only be entered into with a fully offsetting amount of cash or securities. This provision applies to foreign currency forward contracts used to offset the currency risk of a security. All other derivatives are exchange-traded. The purpose of the SBI derivative activity is to equitize cash in the portfolio, to adjust the duration of the portfolio, or to off-set current futures positions.

The fair value balances and notional amounts (or face value) at June 30, 2020, classified by derivative instrument type (futures, options, currency forward contracts, stock warrants and stock rights, and swaps), and the changes in fair value for fiscal year 2020, are shown in **Figure 9.** Explanations of each derivative instrument type are presented below.

Figure 9: Derivative Financial Instruments (in thousands)

Derivative Investment Type	Changes in Fair Value During Fiscal Year 2020	Fair Value at June 30, 2020	Notional Amount
Futures:			
Equity Futures–Long	$39,075	$0	$582
Equity Futures–Short	$1,772	$0	($5)
Fixed Income Futures–Long	$79,586	$0	$845,923
Fixed Income Futures–Short	($56,679)	$0	($729,333)
Options:			
Futures Options Bought	($2,215)	$334	$570
Futures Options Written	$3,184	($108)	($2,093)
Currency Forwards Contracts	($3,480)	$154	$118,821
Stock Warrants and Rights:			
Stock Warrants	($61)	$81	$102
Stock Rights	($151)	$672	$1,972
Swaps:			
Credit Default Swaps Written	($725)	$276	$23,963
Pay Fixed Interest Rate Swaps	($8,157)	($6,185)	$102,303
Receive Fixed Interest Rate Swaps	$104	$85	$6,774

Derivative Investment Type Explanations

Futures: Futures are contract commitments to purchase (asset) or sell (liability) at a future date. The net change in the values of futures contracts is settled on a regular basis and gains and losses are included in investment income.

Options: Options are contracts that give buyers or sellers the right to buy (calls) or sell (puts) a security at a predetermined price on a future date. Gains and losses result from variances in the market value of the security that is the subject of the contract that occur prior to or on the contract specified date. The gains and losses are included in investment income.

Currency Forward Contracts: Foreign currency forward contracts are used to manage portfolio foreign currency risk. The provisions of the contract vary based on what is negotiated between the two parties to the contract.

Stock Warrants and Rights: Stock warrants, similar to options, are the right to purchase shares of a stock at a certain price by a certain date.They usually have five years or more before expiration. When stock warrants are exercised, new shares are issued by the company. Rights are the same but are issued to current stock owners to enable them to retain their relative ownership share. Gains and losses from the sale or exercise of stock warrants and rights are included in investment income.

Swaps: A derivative contract through which two parties exchange the cash flows or liabilities from two different financial instruments. Most swaps involve cash flows based on a notional principal amount such as a loan, bond, or currency. Usually, the principal does not change hands. Each cash flow comprises one leg of the swap. One cash flow is generally fixed, while the other is variable and based on a benchmark interest rate, floating currency exchange rate or index price. The most common kind of swap is an interest rate swap, but currency swaps and credit default swaps on a reference security or basket of securities are also common.

Guaranteed Investment Contract

SBI maintains a fully benefit-responsive synthetic guaranteed investment contract for the Supplemental Investment Fund – Stable Value Fund. The investment objective of the Supplemental Investment Fund – Stable Value Fund is to protect investors from loss of their original investment and to provide a competitive interest rate. On June 30, 2020, the Supplemental Investment Fund – Stable Value Fund portfolio of well diversified high quality investment grade fixed income securities had a fair value of $1,690,831,779 that is $70,990,782 above the value protected by the wrap contract. The Supplemental Investment Fund – Stable Value Fund also includes liquid investment pools with a combined fair value of $39,944,903.

Risks

Credit Risk: The SBI is exposed to credit risk through the counterparties in foreign currency forward contracts used to offset the currency risk of a security. PERA is exposed to credit risk through ten counter parties. These counter parties have S&P credit ratings of BBB+ or better. PERA’s proportionate share of the maximum loss that SBI would have recognized as of June 30, 2020, if all counterparties failed to perform as contracted is $1,233,967.

H) Securities Lending

PERA does not own specific securities, but instead owns shares in pooled funds invested by the SBI. The SBI is authorized to enter into securities lending transactions in accordance with *Minnesota Statutes*, Chapter 356A.06, Subd. 7 and has, pursuant to a *Securities Lending Authorization Agreement*, authorized State Street Bank and Trust Company (State Street) to lend its securities to broker-dealers and banks pursuant to a form of loan agreement. The amounts shown on the financial statements are PERA's proportionate share of securities loaned, collateral pledged, and loan income that resulted from the lending activity of the investment managers, retained by the SBI, of these investment pools. The types and amounts of securities loaned are presented in **Figure 10.**

Figure 10: Securities Loaned (in thousands)

Investment Type	Amount as of June 30, 2020
Domestic Equities	$2,413,357
Domestic Corporate Bonds	111,164
International Equities	271,056
US Government Bonds	310,105
Total	**$3,105,682**

During the fiscal year, State Street lent, at the direction of the SBI, certain securities held by State Street as custodian and received cash or other collateral including securities issued or guaranteed by the United States government. State Street does not have the ability to pledge or sell collateral securities delivered absent a borrower default. Borrowers were required to deliver collateral for each loan equal to at least 100 percent of the market value of the loaned securities.

Pursuant to the *Securities Lending Authorization Agreement*, State Street had an obligation to indemnify the SBI in the event of default by a borrower. There were no failures by any borrowers to return loaned securities or pay distributions thereon during the fiscal year that resulted in a declaration or notice of default of the borrower.

During the fiscal year, the SBI and the borrowers maintained the right to terminate securities lending transactions upon notice. The cash collateral received on each loan was invested in a collective investment pool. As of June 30, 2020, the investment pool had an average duration of 1.0 day and an average weighted final maturity of 77.04 days for USD collateral. Because the loans were terminable at will, their duration did not generally match the duration of the investments made with cash collateral. On June 30, 2020, the SBI had no credit risk exposure to borrowers. The market value of collateral held and the fair value of securities on loan from the SBI as of June 30, 2020 was $3,188,354,000 and $3,105,683,000 respectively. Cash collateral of $2,275,583,000 is reported on the *Statement of Fiduciary Net Position* as an asset. Liabilities resulting from these securities lending transactions are also reported on the *Statement of Fiduciary Net Position.*

NOTE 4 Capital Assets, Building and Land

Capital assets are presented on the June 30, 2020, *Statement of Fiduciary Net Position* at historical cost, net of accumulated depreciation, as summarized in **Figure 11**. There were no significant leases as of June 30, 2020.

Figure 11: Capital Assets (in thousands)

	Balance June 30, 2019	Additions	Disposals	Balance June 30, 2020
Capital Assets, not being depreciated:				
Land	$170	$0	$0	$170
Capital Assets, being depreciated:				
Building (includes generator)	10,893	0	0	10,893
Equipment, Furniture & Fixtures	1,668	109	(97)	1,680
Total Capital Assets being depreciated	**12,561**	**109**	**(97)**	**12,573**
Less Accumulated Depreciation for:		**Increase**	**Decrease**	
Building (includes generator)	(4,960)	(270)	0	(5,230)
Equipment, Furniture & Fixtures	(1,439)	(77)	0	(1,516)
Total Accumulated Depreciation	**(6,399)**	**(347)**	**0**	**(6,746)**
Total Capital Assets, Net of Accumulated Depreciation on the Statement of Fiduciary Net Position	**$6,332**	**($238)**	**($97)**	**$5,997**

Legislation was passed in 1999 allowing PERA, the Minnesota Teacher's Retirement Association (TRA) and the Minnesota State Retirement System (MSRS) to purchase land and construct a 140,000 square foot building to house all three retirement systems. Ownership of the facility is prorated based on the amount of square footage each retirement system occupies in the building. PERA's ownership share is 36.5 percent. PERA's share of the cost to purchase the 4.3 acres of land was $170,308.

In June 2000, the State of Minnesota, under the authority of the Commissioner of Finance (currently known as Minnesota Management and Budget), issued revenue bonds totaling $29 million on behalf of the three retirement systems to pay for the construction of the facility. In August 2012, the remaining bonds were refunded with the proceeds of a new, lower interest rate bond issue. The new bonds are secured by the value of the total assets of the largest defined benefit plans in the three statewide retirement systems. Through the issuance of the refunding bonds, which received a AAA rating, the bond term was reduced by five years and the present value of the savings to the retirement systems was $9,582,538. PERA's portion of the savings was $3,497,626.

Figure 12 shows the debt service amounts for which PERA is directly responsible. Pursuant to the joint and several liability clauses in the bond sale official statement, in the event of default, PERA could be liable for the entire remaining outstanding principal and premium balances of the bonds, plus the interest accrued for the month of June, totaling $9,306,700. Bonds payable on the *Statement of Fiduciary Net Position* is PERA's share of outstanding debt at the current ownership interest. It includes the principal balance as of June 30, 2020, the premium balance as of June 30, 2020, and interest accrued for the month of June. PERA has no lines of credit or assets pledged as collateral for debt.

Figure 12: Debt Repayment Schedule by Fiscal Year

Fiscal Year	Principal	Interest	Premium	Total
2021	$669,775	$51,259	$45,320	$766,354
2022	684,375	40,154	43,029	767,558
2023	698,975	28,807	40,689	768,471
2024	673,425	17,218	24,319	714,962
2025	365,000	6,052	8,548	379,600
	$3,091,550	$143,490	$161,905	$3,396,945

Total Unpaid Principal, 06/30/20	$3,091,550
Total Unpaid Premium, 06/30/20	161,905
Accrued Interest, June 2020	4,272
Total Bonds Payable on Statement of Fiduciary Net Position	3,257,727

NOTE 5

Contribution Requirements

Minnesota Statutes, Chapters 353, 353E, 353G, and 356 set the rates for employer and employee contributions. Contribution rates are shown in **Figure 13**.

Figure 13: Retirement Plan Contribution Rates

		General Employees Fund			Police & Fire	Correctional
Effective Date	Contributor	Basic	Coordinated	MERF	Fund	Fund
01/01/2019	Member	9.10%	6.50%	9.75%	11.30%	5.83%
	Employer	11.78%	7.50%	9.75%	16.95%	8.75%
01/01/2020	Member	9.10%	6.50%	9.75%	11.80%	5.83%
	Employer	11.78%	7.50%	9.75%	17.70%	8.75%

Legislation was passed in 2018 to extend the full funding date for the General Employees Plan, Police and Fire Plan, and Correctional Plan to 2048. The legislation also increased both employee and employer contribution rates in the Police and Fire Plan. Employee rates increase from 10.80 percent of pay to 11.30 percent and employer rates increase from 16.20 percent to 16.95 percent on January 1, 2019. On January 1, 2020, employee rates increase to 11.80 percent and employer rates increase to 17.70 percent. As a result of these changes, contribution rates in the General Employees Plan and the Police and Fire Plan are now sufficient to fund the plan by the full funding date of 2048. Contribution rates in the Correctional Plan are not yet sufficient to fully fund the plan by the full funding dates of 2048. The actuarially required contributions are expressed as a level percentage of covered payroll and are determined using an individual entry-age actuarial cost method.

Beginning in fiscal year 2014, the State of Minnesota was also required to begin contributing $9 million to the Police and Fire Fund each year. This state aid will continue until the fund is 90 percent funded, or until the State Patrol Plan (administered by the Minnesota State Retirement System) is 90 percent funded, whichever occurs later. In addition, the state paid $4.5 million on October 1, 2019, in direct state aid. Thereafter, by October 1 of each year, the state will pay $9 million until full funding is reached or July 1, 2048, whichever is earlier.

The Minneapolis Employees Retirement Fund (MERF) was fully merged into the General Employees Fund in fiscal year 2015. Supplemental contribution amounts were recalculated after the merger based on the amount of MERF's unfunded liability as of the merger date. The State of Minnesota will be contributing $16 million and the MERF's employers will be contributing $21 million to the General Employees Fund each year until September 15, 2031.

Minnesota Statutes, Section 353D.03, specifies contribution rates for those who participate in the Defined Contribution Plan. An eligible elected official or physician who decides to participate contributes 5 percent of salary, which is matched by the employer. For ambulance service personnel, employer contributions are determined by the employer, and for salaried employees must be a fixed percentage of salary. Employer contributions for volunteer personnel may be a unit value for each call or period of alert duty. Employees who are paid for their services may elect to make member contributions in an amount not to exceed the employer share.

Employer required contributions are calculated annually for each employer in the Statewide Volunteer Firefighter Plan. If fire state aid (based on income generated from insurance policies) plus expected investment income are not enough to cover the expected normal cost of benefits during the next calendar year, an employer contribution is calculated and payable by the end of the next calendar year.

Purchasing Service Credits

Authorized Leave of Absence: A member may take an authorized leave of absence from their employment covered by PERA. The member may optionally purchase missing employee and employer contributions, plus interest, to restore the lost credit.

Periodic Repetitive Leave--Also known as Special Leave Without Pay (SLWOP). An employer may offer, or mandate, a furlough to all employees. Members participating in the furlough may optionally pay PERA their contributions lost plus interest to restore their high-five salary. Employers are required to remit to PERA the employer portion of the furloughed salary plus interest only after a member payment is received.

Repayment of Refunded Service: A former member who forfeited service credits upon receiving a refund of PERA contributions may repay the refund after having reentered public service for a minimum of six months. This purchase restores the forfeited service credits. Interest charged for a repayment of refund is calculated from the date of the refund at 8.5 percent, compounded annually until June 30, 2015, 8 percent July 1, 2015 through June 30, 2018, and 7.5 percent July 1, 2018 thereafter.

Prior Military Service: Legislation passed during the 2019 Minnesota legislative session provides PERA members the option to actuarially purchase service credit for one or more periods while in the uniformed services, as defined in United States Code, title 38, section 4301 (13). The eligible purchase is for military leave period(s) that occurred before becoming a public employee, or during public employment covered by a PERA pension plan and the member missed the original purchase timeframe.

NOTE 6
Net Pension Liability of Employers and Nonemployer Contributing Entity

The components of the Net Pension Liability (NPL) of the cost-sharing defined benefit plans for participating employers and the State of Minnesota (a nonemployer contributing entity in the General Employees Fund) as of June 30, 2020, calculated in accordance with GASB Statement No. 67, are shown in **Figure 14.**

Figure 14: Net Pension Liability Components (in thousands)

	General Employees Fund	Police and Fire Fund	Correctional Fund
Total Pension Liability (A)	$28,626,916	$10,291,567	$814,456
Fund Fiduciary Net Position (B)	(22,631,459)	(8,973,460)	(787,322)
Net Pension Liability (A-B)	**$5,995,457**	**$1,318,107**	**$27,134**
Fund Fiduciary Net Position as a Percentage of the **Total Pension Liability (B/A)**	**79.1%**	**87.2%**	**96.7%**

A) Actuarial Methods and Assumptions

The total pension liability for each of the cost-sharing defined benefit plans was determined by an actuarial valuation as of June 30, 2020, using the entry age normal actuarial cost method. Inflation is assumed to be 2.25 percent for the General Employees Plan, 2.5 percent for the Police and Fire Plan, and 2.5 percent for the Correctional Plan.

Salary growth assumptions in the General Employees Plan range in annual increments from 10.25 percent after one year of service, to 3.0 percent after 30 years of service. In the Police and Fire Plan, salary growth assumptions range from 12.25 percent after one year of service to 3.25 percent after 25 years of service. In the Correctional Plan, salary growth assumptions range from 8.5 percent at age 20 to 3.5 percent at age 65.

Mortality rates for the General Employees Plan are based on the Pub-2010 General Employee Mortality Table. Mortality rates for the Police and Fire and the Correctional Plans are based on RP-2014 mortality tables. The tables are adjusted slightly to fit PERA's experience. Actuarial assumptions for the General Employees Plan are reviewed every four years. The most recent four-year experience study for the General Employees Plan was completed in 2019. The assumption changes were adopted by the Board and become effective with the July 1, 2020 actuarial valuation. The most recent four-year experience studies for the Police and Fire and the Correctional Plan were completed in 2020. The recommended assumptions for those plans were adopted by the Board and will be effective with the July 1, 2021 actuarial valuations if approved by the Legislature.

B) Discount Rate

The discount rate used to measure the total pension liability in 2020 was 7.5 percent. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and employers will be made at rates set in *Minnesota Statutes*. Based on these assumptions, the fiduciary net positions of the General Employees Fund, the Police and Fire Fund, and the Correctional Fund were 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.

C) Sensitivity Analysis

Figure 15 presents the Net Pension Liability (Asset) of employers and the State of Minnesota for PERA's cost-sharing defined benefit plans as of June 30, 2020, calculated using the current discount rate of 7.5 percent, as well as what each plan's net pension liability would be if it were calculated using a discount rate that is one percent lower and one percent higher than the current rate.

Figure 15: Sensitivity Analysis (in thousands)
Net Pension Liability (Asset) at Different Discount Rates

	General Employees Fund		Police and Fire Fund		Correctional Fund	
1% Decrease	6.50%	$9,608,638	6.50%	$2,627,177	6.50%	$168,635
Current Discount Rate	7.50%	$5,995,457	7.50%	$1,318,107	7.50%	$27,134
1% Increase	8.50%	$3,014,873	8.50%	$235,081	8.50%	($86,159)

NOTE 7

Other Notes

A) New Asset Transfers

The Volunteer Firefighter Plan was created by the Minnesota Legislature in 2009. The plan is an agent multiple-employer defined benefit retirement plan. Fourteen fire departments joined the plan in fiscal year 2020, bringing the total number of fire departments in the Volunteer Firefighter Plan to 187. The amount of assets transferred, $4,775,789, is included in *Other Additions* in *Statement of Changes in Fiduciary Net Position*. Each fire department has a separate account and retains its own assets and liabilities.

B) Participating Pension Plan

All employees of PERA are covered by the General Employees Coordinated Plan and eligible for the plan provisions described in Note 1.D. *Minnesota Statute* Section 353.27 sets the rates for employee and employer contributions. These statutes are established and amended by the Minnesota Legislature. Contribution rates were shown previously in **Figure 13**. Total covered payroll for PERA employees during fiscal year 2020 was approximately $7.0 million.

Employer pension contributions for PERA employees for the fiscal years ending June 30, 2020, 2019, and 2018 were $527,014, $526,135, and $512,920, respectively. Employer contributions were equal to the required contributions for each year as set by state statute. Employer contributions paid by PERA on behalf of these employees are funded by General Employees Fund investment income.

C) Abandoned Accounts

Beginning in fiscal year 2018, PERA initiated a significant effort to locate terminated non-vested members to advise them of their rights to withdraw their employee contributions. Minnesota Statute 356.65, states that inactive, non-vested members can either apply for their refund within five years after their last member contribution was made or forfeit their member contributions and interest. If a member leaves their contributions in PERA, does not make any contributions for five years, and is not vested in the retirement plan, PERA will automatically consolidate their member contributions and interest to the pension fund. The consolidated member contributions are automatically forfeited by the member, and can be restored if they return to a PERA-covered employment or apply for a retirement benefit with another public pension plan.

During fiscal year 2020, PERA continued their external communication efforts to reach out to terminated, non-vested members with their refund options. Approximately 14,000 members returned refund applications resulting in refunds of $23 million. Another 28,000 nonresponsive member accounts were cancelled and the funds credited back into the pension fund totaling $15.5 million for the fiscal year ending June 30, 2020.

D) GASB Pronouncements

In May 2020, GASB issued Statement No. 95 *Postponement of the Effective Dates of Certain Authoritative Guidance*. The statement postponed the effective dates of certain provisions that were applicable to PERA during this reporting cycle. The effective date of Statement No. 84, *Fiduciary Activities,* was postponed by one year and the Statement No. 87, *Leases,* by 18 months.

Schedule of Changes in Net Pension Liability and Related Ratios *

Required Supplementary Information (unaudited, in thousands)

General Employees Fund

	Fiscal Year 2020	2019
Total Pension Liability		
Service Cost	$518,112	$494,737
Interest on the Total Pension Liability	2,053,793	1,991,061
Change of Benefit Terms	(65,850)	0
Difference between Expected and Actual Experience	(30,245)	104,946
Assumption Changes	(128,849)	(120,162)
Benefit Payments	(1,604,842)	(1,536,071)
Refund Payments	(84,947)	(65,834)
Net Change in Total Pension Liability	657,172	868,677
Total Pension Liability--Beginning	27,969,744	27,101,067
Total Pension Liability--Ending (a)	28,626,916	27,969,744
Plan Fiduciary Net Position		
Contributions--Employer	$509,821	515,444
Contributions--Member	435,419	424,044
Contributions--Nonemployer Contributing Entity	16,000	16,000
Net Investment Income	931,041	1,547,224
Benefit Payments	(1,604,842)	(1,536,071)
Refund Payments	(84,947)	(65,834)
Administrative Expenses	(12,268)	(13,470)
Other **	267	154
Net Change in Plan Fiduciary Net Position	190,491	887,491
Plan Fiduciary Net Position--Beginning	22,440,968	21,553,477
Plan Fiduciary Net Position--Ending (b)	22,631,459	22,440,968
Net Pension Liability (a)-(b)	$5,995,457	$5,528,776
Plan Fiduciary Net Position as a Percentage of Total Pension Liability (b)/(a)	79.06 %	80.23 %
Covered Payroll	$6,698,754	$6,523,754
Net Pension Liability as a Percentage of Covered Payroll	89.50 %	84.75 %

**This schedule is intended to show information for ten years; additional years will be displayed as the information becomes available.*

***Restated 2016 & 2017 for rounding and other differences; no effect on Plan Fiduciary Net Position.*

Fiscal Year

2018	2017	2016	2015	2014
$513,422	$471,706	$434,551	$421,602	$388,391
1,948,853	1,921,869	1,839,388	1,712,534	1,591,756
(79,217)	0	0	1,147,198	0
8,763	280,527	(647,197)	(348,383)	96,123
(262,228)	(853,320)	2,119,742	0	645,499
(1,470,450)	(1,413,448)	(1,359,176)	(1,235,303)	(1,109,866)
(42,589)	(37,234)	(37,209)	(35,655)	(38,264)
616,554	370,100	2,350,099	1,661,993	1,573,639
26,484,513	26,114,413	23,764,314	22,102,321	20,528,682
27,101,067	26,484,513	26,114,413	23,764,314	22,102,321
488,819	477,888	459,978	435,115	382,251
409,423	400,204	375,291	353,765	334,495
16,000	6,000	6,000	0	0
2,063,582	2,682,901	(20,851)	777,504	2,760,854
(1,470,450)	(1,413,448)	(1,359,176)	(1,235,303)	(1,109,866)
(42,589)	(37,234)	(37,209)	(35,655)	(38,264)
(11,943)	(11,292)	(11,350)	(10,367)	(9,861)
56	411	671	891,914	605
1,452,898	2,105,430	(586,646)	1,176,973	2,320,214
20,100,579	17,995,149	18,581,795	17,404,822	15,084,608
21,553,477	20,100,579	17,995,149	18,581,795	17,404,822
$5,547,590	$6,383,934	$8,119,264	$5,182,519	$4,697,499
79.53 %	75.90 %	68.91 %	78.19 %	78.75 %
$6,298,815	$6,156,985	$5,773,708	$5,549,255	$5,351,920
88.07 %	103.69 %	140.62 %	93.39 %	87.77 %

Notes to Schedule of Changes in Net Pension Liabilities and Related Ratios

General Employees Fund

2020 Changes

Changes in Actuarial Assumptions

- The price inflation assumption was decreased from 2.50% to 2.25%.

- The payroll growth assumption was decreased from 3.25% to 3.00%.

- Assumed salary increase rates were changed as recommended in the June 30, 2019 experience study. The net effect is assumed rates that average 0.25% less than previous rates.

- Assumed rates of retirement were changed as recommended in the June 30, 2019 experience study. The changes result in more unreduced (normal) retirements and slightly fewer Rule of 90 and early retirements.

- Assumed rates of termination were changed as recommended in the June 30, 2019 experience study. The new rates are based on service and are generally lower than the previous rates for years 2-5 and slightly higher thereafter.

- Assumed rates of disability were changed as recommended in the June 30, 2019 experience study. The change results in fewer predicted disability retirements for males and females.

- The base mortality table for healthy annuitants and employees was changed from the RP-2014 table to the Pub-2010 General Mortality table, with adjustments. The base mortality table for disabled annuitants was changed from the RP-2014 disabled annuitant mortality table to the PUB-2010 General/Teacher disabled annuitant mortality table, with adjustments.

- The mortality improvement scale was changed from Scale MP-2018 to Scale MP-2019.

- The assumed spouse age difference was changed from two years older for females to one year older.

- The assumed number of married male new retirees electing the 100% Joint & Survivor option changed from 35% to 45%. The assumed number of married female new retirees electing the 100% Joint & Survivor option changed from 15% to 30%. The corresponding number of married new retirees electing the Life annuity option was adjusted accordingly.

Changes in Plan Provisions

- Augmentation for current privatized members was reduced to 2.0% for the period July 1, 2020 through December 31, 2023 and 0.0% after. Augmentation was eliminated for privatizations occurring after June 30, 2020.

2019 Changes

Changes in Actuarial Assumptions

-The mortality projection scale was changed from MP-2017 to MP-2018.

Changes in Plan Provisions

-The employer supplemental contribution was changed prospectively, decreasing from $31 million to $21 million per year. The State's special funding contribution was changed prospectively, requiring $16 million due per year through 2031.

2018 Changes

Changes in Actuarial Assumptions

-The mortality projection scale was changed from MP-2015 to MP-2017.

-The assumed benefit increase was changed from 1 percent per year through 2044 and 2.5 percent per year thereafter to 1.25 percent per year.

Changes in Plan Provisions

-The augmentation adjustment in early retirement factors is eliminated over a five-year period starting July 1, 2019, resulting in actuarial equivalence after June 30, 2024.

-Interest credited on member contributions decreased from 4 percent to 3 percent, beginning July 1, 2018.

-Deferred augmentation was changed to 0.00 percent, effective January 1, 2019. Augmentation that has already accrued for deferred members will still apply.

-Contribution stabilizer provisions were repealed.

-Postretirement benefit increases were changed from 1 percent per year with a provision to increase to 2.5 percent upon attainment of 90 percent funding ratio to 50 percent of the Social Security Cost-of-Living Adjustment, not less than 1 percent and not more than 1.5 percent, beginning January 1, 2019.

-For retirements on or after January 1, 2024, the first benefit increase is delayed until the retiree reaches normal retirement age; does not apply to Rule of 90 retirees, disability benefit recipients, or survivors.

-Actuarial equivalent factors were updated to reflect revised mortality and interest assumptions.

Continued

Notes to Schedule of Changes in Net Pension Liabilities and Related Ratios

2017 Changes

Changes in Actuarial Assumptions

-The combined service annuity (CSA) loads were changed from 0.80 percent for active members and 60 percent for vested and non-vested deferred members. The revised CSA load are now 0 percent for active member liability, 15 percent for vested deferred member liability, and 3 percent for non-vested deferred member liability.

-The assumed postretirement benefit increase rate was changed for 1 percent per year for all years to 1 percent per year through 2044 and 2.50 percent per year thereafter.

Changes in Plan Provisions

-The State's contribution for the Minneapolis Employees Retirement Fund equals $16.0 million in 2017 and 2018 and $6.0 million thereafter.

- The Employer Supplemental Contribution for the Minneapolis Employees Retirement Fund changed from $21,000,000 to $31,000,000 in calendar years 2019 to 2031. The State's contribution changed from $16,000,000 to $6,000,000 in calendar years 2019 to 2031.

2016 Changes:

Changes in Actuarial Assumptions

-The assumed postretirement benefit increase rate was changed from 1 percent per year through 2035 and 2.50 percent per year thereafter to 1 percent per year for all years.

-The assumed investment return was changed from 7.90 percent to 7.50 percent. The single discount rate changed from 7.90 percent to 7.50 percent.

-Other assumptions were changed pursuant to the experience study June 30, 2015. The assumed future salary increases, payroll growth, and inflation were decreased by 0.25 percent to 3.25 percent for payroll growth and 2.50 percent for inflation.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2015 Changes:

Changes in Actuarial Assumptions

-The assumed postretirement benefit increase rate was changed from 1 percent per year through 2030 and 2.5 percent per year thereafter to 1 percent per year through 2035 and 2.5 percent per year thereafter.

Changes in Plan Provisions:

-On January 1, 2015, the Minneapolis Employees Retirement Fund was merged into the General Employees Fund, which increased the total pension liability by $1.1 billion and increase the fiduciary plan net position by $892 million. Upon consolidation, state and employer contributions were revised; the State's contribution of $6 million, which meets the special funding situation definition, was due September 2015.

Schedule of Changes in Net Pension Liability and Related Ratios *

Required Supplementary Information (unaudited, in thousands)

Police and Fire Fund

	Fiscal Year	
	2020	2019
Total Pension Liability		
Service Cost	$217,127	$209,098
Interest on the Total Pension Liability	729,945	703,640
Change of Benefit Terms	0	0
Difference between Expected and Actual Experience	30,348	14,491
Assumption Changes	(24,785)	(19,898)
Benefit Payments	(567,040)	(547,699)
Refund Payments	(3,181)	(3,283)
Net Change in Total Pension Liability	382,414	356,349
Total Pension Liability--Beginning	9,909,153	9,552,804
Total Pension Liability--Ending (a)	10,291,567	9,909,153
Plan Fiduciary Net Position		
Contributions--Employer	$193,819	174,817
Contributions--Member	123,525	111,762
Contributions--Nonemployer Contributing Entity	13,500	13,500
Net Investment Income	368,949	609,512
Benefit Payments	(567,040)	(547,699)
Refund Payments	(3,181)	(3,283)
Administrative Expenses	(924)	(1,018)
Other	260	54
Net Change in Plan Fiduciary Net Position	128,908	357,645
Plan Fiduciary Net Position--Beginning	8,844,552	8,486,907
Plan Fiduciary Net Position--Ending (b)	8,973,460	8,844,552
Net Pension Liability (a)-(b)	$1,318,107	$1,064,601
Plan Fiduciary Net Position as a Percentage of Total Pension Liability (b)/(a)	87.19 %	89.26 %
Covered Payroll	$1,069,481	$1,011,421
Net Pension Liability as a Percentage of Covered Payroll	123.25 %	105.26 %

*This schedule is intended to show information for ten years; additional years will be displayed as the information becomes available

Fiscal Year

	2018	2017	2016	2015	2014
	$203,131	$318,401	$194,352	$187,959	$169,124
	682,903	616,740	658,198	648,233	598,165
	(50,771)	0	0	0	0
	21,720	37,292	(375,575)	(221,112)	1,813
	(42,807)	(2,300,201)	2,650,350	0	323,945
	(528,468)	(512,379)	(498,608)	(481,330)	(452,462)
	(1,902)	(2,119)	(2,391)	(1,953)	(1,633)
	283,806	(1,842,266)	2,626,326	131,797	638,952
	9,268,998	11,111,264	8,484,938	8,353,141	7,714,189
	9,552,804	9,268,998	11,111,264	8,484,938	8,353,141
	170,781	166,329	156,065	144,317	132,632
	105,479	101,984	95,172	88,733	81,213
	9,000	9,000	9,000	9,000	9,000
	813,966	1,058,942	(8,949)	317,556	1,158,389
	(528,468)	(512,379)	(498,608)	(481,330)	(452,462)
	(1,902)	(2,119)	(2,391)	(1,953)	(1,633)
	(886)	(992)	(906)	(803)	(798)
	58	24	3	84	18
	568,028	820,789	(250,614)	75,604	926,359
	7,918,879	7,098,090	7,348,704	7,273,100	6,346,741
	8,486,907	7,918,879	7,098,090	7,348,704	7,273,100
	$1,065,897	$1,350,119	$4,013,174	$1,136,234	$1,080,041
	88.84 %	85.43 %	63.88 %	86.61 %	87.07 %
	$976,657	$944,296	$881,222	$845,076	$820,333
	109.14 %	142.98 %	455.41 %	134.45 %	131.66 %

Notes to Schedule of Changes in Net Pension Liabilities and Related Ratios

Police and Fire Plan

2020 Changes

Changes in Actuarial Assumptions

- The mortality projection scale was changed from MP-2018 to MP-2019.

Changes in Plan Provisions

- There have been no changes since the prior valuation.

2019 Changes

Changes in Actuarial Assumptions

-The mortality projection scale was changed from MP-2017 to MP-2018.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2018 Changes

Changes in Actuarial Assumptions

-The mortality projection scale was changed from MP-2016 to MP-2017.

Changes in Plan Provisions

-Postretirement benefit increases were changed to 1.00 percent for all years, with no trigger.

-An end date of July 1, 2048 was added to the existing $9 million state contribution.

-New annual state aid will equal $4.5 million in fiscal years 2019 and 2020, and $9 million thereafter until the plan reaches 100 percent funding, or July 1, 2048, if earlier.

-Member contributions were changed from 10.8 percent to 11.3 percent of pay, effective January 1, 2019 and 11.8 percent of pay, effective January 1, 2020.

-Employer contributions were changed from 16.2 percent to 16.95 percent of pay, effective January 1, 2019 and 17.7 percent of pay, effective January 1, 2020.

-Interest credited on member contributions decreased from 4 percent to 3 percent, beginning July 1, 2018.

-Deferred augmentation was changed to 0 percent, effective January 1, 2019. Augmentation that has already accrued for deferred members will still apply.

-Actuarial equivalent factors were updated to reflect revised mortality and interest assumptions.

2017 Changes

Changes in Actuarial Assumptions

-Assumed salary increases were changed as recommended in the June 30, 2016 experience study. The net effect is proposed rates that average 0.34 percent lower than the previous rates.

-Assumed rates of retirement were changed, resulting in fewer retirements.

-The combined service annuity (CSA) load was 30 percent for vested and non-vested, deferred members. The CSA has been changed to 33 percent for vested members and 2 percent for non-vested members.

-The base mortality table for healthy annuitants was changed from the RP-2000 fully generational table to the RP-2014 fully generational table (with a base year of 2006), with male rates adjusted by a factor of 0.96. The mortality improvement scale was changed from Scale AA to Scale MP-2016. The base mortality table for disabled annuitants was changed from the RP-2000 disabled mortality table to the mortality tables assumed for healthy retirees.

-Assumed termination rates were decreased to 3 percent for the first three years of service. Rates beyond the select period of three years were adjusted, resulting in more expected terminations overall.

-Assumed percentage of married female members was decreased from 65 percent to 60 percent.

-Assumed age difference was changed from separate assumptions for male members (wives assumed to be three years younger) and female members (husbands assumed to be four years older) to the assumption that males are two years older than females.

-The assumed percentage of female members electing joint and survivor annuities was increased.

-The assumed postretirement benefit increase rate was changed from 1 percent for all years to 1 percent per year through 2064 and 2.5 percent thereafter.

-The single discount rate was changed from 5.6 percent per annum to 7.5 percent per annum.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2016 Changes:

Changes in Actuarial Assumptions

-The assumed postretirement benefit increase rate was changed from 1 percent per year through 2037 and 2.5 percent per year thereafter to 1 percent per year for all future years.

-The assumed investment return was changed from 7.9 percent to 7.5 percent.

-The single discount rate changed from 7.9 percent to 5.6 percent.

-The assumed future salary increases, payroll growth, and inflation were decreased by 0.25 percent to 3.25 percent for payroll growth and 2.5 percent for inflation.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2015 Changes:

Changes in Actuarial Assumptions

-The assumed postretirement benefit increase rate was changed from 1 percent per year through 2030 and 2.5 percent per year thereafter to 1 percent per year through 2037 and 2.5 percent per year thereafter.

Changes in Plan Provisions:

-The postretirement benefit increase to be paid after the attainment of the 90 percent funding threshold was changed from inflation up to 2.5 percent, to a fixed rate of 2.5 percent.

Continued

Schedule of Changes in Net Pension Liabilities and Related Ratios*

Required Supplementary Information (unaudited, in thousands)

Correctional Fund

	Fiscal Year 2020	Fiscal Year 2019
Total Pension Liability		
Service Cost	$33,172	$30,362
Interest on the Total Pension Liability	57,354	52,741
Change of Benefit Terms	0	0
Difference between Expected and Actual Experience	(12,083)	(1,846)
Assumption Changes	(1,977)	(2,206)
Benefit Payments	(17,569)	(15,381)
Refund Payments	(2,709)	(2,244)
Net Change in Total Pension Liability	56,188	61,426
Total Pension Liability--Beginning	758,268	696,842
Total Pension Liability--Ending (a)	814,456	758,268
Plan Fiduciary Net Position		
Contributions--Employer	19,043	18,676
Contributions--Member	12,692	12,485
Contributions--Nonemployer Contributing Entity	0	0
Net Investment Income	31,774	50,853
Benefit Payments	(17,569)	(15,381)
Refund Payments	(2,709)	(2,244)
Administrative Expenses	(332)	(361)
Other	0	0
Net Change in Plan Fiduciary Net Position	42,899	64,028
Plan Fiduciary Net Position--Beginning	744,423	680,395
Plan Fiduciary Net Position--Ending (b)	787,322	744,423
Net Pension Liability (a)-(b)	$27,134	$13,845
Plan Fiduciary Net Position as a Percentage of Total Pension Liability (b)/(a)	96.67 %	98.17 %
Covered Payroll	$217,702	$214,151
Net Pension Liability as a Percentage of Covered Payroll	12.46 %	6.47 %

* This schedule is intended to show information for ten years; additional years will be displayed as the information becomes available.

Fiscal Year

2018	2017	2016	2015	2014
$45,378	$49,202	$25,950	$25,098	$26,488
53,811	47,336	40,605	37,043	33,955
(66,822)	0	0	0	0
1,018	(3,516)	382	(7,892)	(5,327)
(209,457)	(66,147)	310,332	0	(34,168)
(13,183)	(11,033)	(9,381)	(7,777)	(6,711)
(1,364)	(1,478)	(982)	(1,057)	(1,105)
(190,619)	14,364	366,906	45,415	13,132
887,461	873,097	506,191	460,776	447,644
696,842	887,461	873,097	506,191	460,776
17,871	17,489	16,490	15,736	15,054
11,956	11,666	11,008	10,472	10,030
0	0	0	0	0
62,962	78,363	209	20,373	69,451
(13,183)	(11,033)	(9,381)	(7,777)	(6,711)
(1,364)	(1,478)	(982)	(1,057)	(1,105)
(308)	(330)	(290)	(247)	(236)
1	0	(2)	(1)	(1)
77,935	94,677	17,052	37,499	86,482
602,460	507,783	490,731	453,232	366,750
680,395	602,460	507,783	490,731	453,232
$16,447	$285,001	$365,314	$15,460	$7,544
97.64%	67.89 %	58.16 %	96.95 %	98.36 %
$205,077	$200,103	$188,816	$179,623	$172,041
8.02%	142.43 %	193.48 %	8.61 %	4.39 %

Notes to Schedule of Changes in Net Pension Liabilities and Related Ratios

Correctional Plan

2020 Changes

Changes in Actuarial Assumptions

-The mortality projection scale was changed from MP-2018 to MP-2019.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2019 Changes

Changes in Actuarial Assumptions

-The mortality projection scale was changed from MP-2017 to MP-2018.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2018 Changes

Changes in Actuarial Assumptions

-The single discount rate was changed from 5.96 percent per annum to 7.50 percent per annum.

-The mortality projection scale was changed from MP-2016 to MP-2017.

-The assumed post-retirement benefit increase was changed from 2.50 percent per year to 2.00 percent per year.

Changes in Plan Provisions

-The augmentation adjustment in early retirement factors is eliminated over a five-year period starting July 1, 2019, resulting in actuarial equivalence after June 30, 2024.

-Interest credited on member contributions decreased from 4.00 percent to 3.00 percent, beginning July 1, 2018.

-Deferred augmentation was changed to 0.00 percent, effective January 1, 2019. Augmentation that has already accrued for deferred members will still apply.

-Postretirement benefit increases were changed from 2.50 percent per year with a provision to reduce to 1.00 percent if the funding status declines to a certain level, to 100 percent of the Social Security Cost of Living Adjustment, not less than 1.00 percent and not more than 2.50 percent, beginning January 1, 2019. If the funding status declines to 85.00 percent for two consecutive years or 80.00 percent for one year, the maximum increase will be lowered to 1.50 percent.

-Actuarial equivalent factors were updated to reflect revised mortality and interest assumptions.

2017 Changes

Changes in Actuarial Assumptions

-The base mortality table for healthy annuitants was changed from the RP-2000 fully generational table to the RP-2014 fully generational table (with a base year of 2006), with male rates adjusted by a factor of 0.96. The mortality improvement scale was changed from Scale AA to Scale MP-2016, and is applied to healthy and disabled members. The base mortality table for disabled annuitants was changed from the RP-2000 disabled mortality table to the RP-2014 disabled annuitant mortality table (with future mortality improvement according to MP-2016).

-The combined service annuity (CSA) load was 30.00 percent for vested and non-vested, deferred members. The CSA has been changed to 35.00 percent for vested members and 1.00 percent for non-vested members.

-The single discount rate was changed from 5.31 percent per annum to 5.96 percent per annum.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2016 Changes:

Changes in Actuarial Assumptions

-The assumed investment return was changed from 7.90 percent to 7.50 percent. The single discount rate changed from 7.90 percent to 5.31 percent.

-The assumed future salary increases, payroll growth, and inflation were decreased by 0.25 percent to 3.25 percent for payroll growth and 2.5 percent for inflation.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

2015 Changes:

Changes in Actuarial Assumptions

-There have been no changes since the prior valuation.

Changes in Plan Provisions

-There have been no changes since the prior valuation.

Schedule of Contributions from Employers and Nonemployers

Required Supplementary Information (unaudited, in thousands)

General Employees Fund

Year Ended June 30	Actuarially Determined Contribution (A)	Statutorily Determined Contribution (B)	Actual Contributions (C)	Contribution Deficiency (Excess) (A)-(C)	Covered Payroll (D)	Actual Contribution as a % of Covered Payroll (C)/(D)
2020	$455,515	$525,821	$525,821	($70,306)	$6,698,754	7.85%
2019	$453,401	$531,444	$531,444	($78,043)	$6,523,754	8.15%
2018	$609,725	$504,819	$504,819	$104,906	$6,298,815	8.01%
2017	$615,083	$483,888	$483,888	$131,195	$6,156,985	7.86%
2016	$542,151	$465,978	$465,978	$76,173	$5,773,708	8.07%
2015	$523,017	$435,115	$435,115	$87,902	$5,549,255	7.84%
2014	$476,321	$382,251	$382,251	$94,070	$5,351,920	7.14%
2013	$430,773	$372,652	$372,652	$58,121	$5,246,928	7.10%
2012	$371,295	$368,037	$368,037	$3,258	$5,142,592	7.16%
2011	$321,782	$357,596	$357,596	($35,814)	$5,079,429	7.04%

Notes to Schedule of Contributions

Required Supplementary Information

Methods and Assumptions

The following methods and assumptions are used to calculate actuarially determined contributions for this fiscal ending June 30, 2020.

Valuation Date:	June 30, 2019
Actuarial Cost Method:	Entry Age Normal
Amortization Method:	Level percentage of payroll, closed
Remaining Amortization Period:	29 years
Asset Valuation Method:	5-year smoothed market, no corridor
Inflation:	2.50%
Payroll Growth Rate:	3.25%
Salary Increases:	3.25% to 11.25%, including inflation
Investment Rate of Return:	7.50%
Retirement Age:	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2016 valuation pursuant to an experience study of the period 2008 - 2014.
Mortality:	RP-2014 annuitant generational mortality table, projected with scale MP-2018 from a base year of 2014, white collar adjustment, set forward two years for males and rates adjusted by a factor of 0.90 for females.
Cost-of-Living Increase:	The plan is assumed to pay a 1.25% postretirement benefit increase for all future years.

Schedule of Contributions from Employers and Nonemployers

Required Supplementary Information (unaudited, in thousands)

Police and Fire Fund

Year Ended June 30	Actuarially Determined Contribution (A)	Statutorily Determined Contribution (B)	Actual Contributions (C)	Contribution Deficiency (Excess) (A)-(C)	Covered Payroll (D)	Actual Contribution as a % of Covered Payroll (C)/(D)
2020	$177,855	$207,319	$207,319	($29,464)	$1,069,481	19.39%
2019	$173,459	$188,317	$188,317	($14,858)	$1,011,421	18.62%
2018	$193,183	$179,781	$179,781	$13,402	$976,657	18.41%
2017	$165,252	$175,329	$175,329	($10,077)	$944,296	18.57%
2016	$189,375	$165,065	$165,065	$24,310	$881,222	18.73%
2015	$197,325	$153,317	$153,317	$44,008	$845,076	18.14%
2014	$163,985	$141,632	$141,632	$22,353	$820,333	17.27%
2013	$189,254	$125,995	$125,995	$63,259	$796,188	15.82%
2012	$152,369	$121,891	$121,891	$30,478	$794,417	15.34%
2011	$124,284	$109,604	$109,604	$14,680	$775,806	14.13%

Notes to Schedule of Contributions

Required Supplementary Information

Methods and Assumptions

The following methods and assumptions are used to calculate actuarially determined contributions for this fiscal year ending June 30, 2020.

Valuation Date:	June 30, 2019
Actuarial Cost Method:	Entry Age Normal
Amortization Method:	Level percentage of payroll, closed
Remaining Amortization Period:	29 years
Asset Valuation Method:	5-year smoothed market, no corridor
Inflation:	2.50%
Payroll Growth Rate:	3.25%
Salary Increases:	3.25% to 12.25%, including inflation
Investment Rate of Return:	7.50%
Retirement Age:	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2017 valuation pursuant to an experience study of the period 2011 - 2015.
Mortality:	RP-2014 annuitant generational mortality table, projected with mortality improvement scale MP-2018, from a base year of 2006. Male rates adjusted by a factor of 0.96.
Cost-of-Living Increase:	The plan is assumed to pay a 1.00% postretirement benefit increase for all future years.

Schedule of Contributions from Employers and Nonemployers

Required Supplementary Information (unaudited, in thousands)

Correctional Fund

Year Ended June 30	Actuarially Determined Contribution (A)	Statutorily Determined Contribution (B)	Actual Contributions (C)	Contribution Deficiency (Excess) (A)-(C)	Covered Payroll (D)	Actual Contribution as a % of Covered Payroll (C)/(D)
2020	$19,593	$19,043	$19,043	$550	$217,702	8.75%
2019	$19,466	$18,676	$18,676	$790	$214,151	8.72%
2018	$19,031	$17,871	$17,871	$1,160	$205,077	8.71%
2017	$17,269	$17,489	$17,489	($220)	$200,103	8.74%
2016	$16,446	$16,490	$16,490	($44)	$188,816	8.73%
2015	$13,759	$15,736	$15,736	($1,977)	$179,623	8.76%
2014	$14,606	$15,054	$15,054	($448)	$172,041	8.75%
2013	$14,207	$14,498	$14,498	($291)	$164,820	8.80%
2012	$12,473	$14,320	$14,320	($1,847)	$164,340	8.71%
2011	$12,183	$14,289	$14,289	($2,106)	$165,077	8.66%

Notes to Schedule of Contributions

Required Supplementary Information

Methods and Assumptions

The following methods and assumptions are used to calculate actuarially determined contributions for this fiscal year ending June 30, 2020.

Valuation Date:	June 30, 2019
Actuarial Cost Method:	Entry Age Normal
Amortization Method:	Level percentage of payroll, closed
Remaining Amortization Period:	29 years
Asset Valuation Method:	5-year smoothed market, no corridor
Inflation:	2.50%
Payroll Growth Rate:	3.25%
Salary Increases:	3.50% to 8.50%, including inflation
Investment Rate of Return:	7.50%
Retirement Age:	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2012 valuation pursuant to an experience study of the period 2006 - 2011 prepared by a former actuary.
Mortality:	RP-2014 annuitant generational mortality table, projected with mortality improvement scale MP-2018, from a base year of 2006. Male rates adjusted by a factor of 0.96.
Cost-of-Living Increase:	The plan is assumed to pay a 2.00% postretirement benefit for all years.

Schedule of Investment Returns

Required Supplementary Information (unaudited)

Rate of Return for Combined Funds

Year	General Employees Fund	Police and Fire Fund	Correctional Fund	Volunteer Firefighter Fund
2020	4.29 %	4.24 %	4.24 %	6.83 %
2019	7.33 %	7.31 %	7.42 %	8.11 %
2018	10.47 %	10.48 %	10.35 %	5.83 %
2017	15.23 %	15.22 %	15.22 %	10.31 %
2016	(0.07)%	(0.09)%	0.08 %	2.82 %
2015	4.45 %	4.46 %	4.42 %	2.83 %
2014	18.66 %	18.66 %	18.56 %	13.12 %

The annual money-weighted rate of return for each plan is net of investment expenses.

This schedule is intended to show information for ten years; additional years will be displayed as the information becomes available.

Statement of Changes in Assets and Liabilities— Agency Fund

For the Fiscal Year Ended June 30, 2020 (in thousands)

	Beginning Balance 07/01/2019	Additions	Deductions	Ending Balance 06/30/2020
ASSETS				
Cash and Cash Equivalents	$37,615	$37,942	$42,961	$32,596
Investments				
Bond Pool	152,918	16,045	6,910	162,053
US Equities	476,395	150,517	118,428	508,484
Total Assets	**$666,928**	**$204,504**	**$168,299**	**$703,133**
LIABILITIES				
Accounts Payable	$666,928	$204,504	$168,299	$703,133
Total Liabilities	**$666,928**	**$204,504**	**$168,299**	**$703,133**

Schedule of Investment Expenses

For the Fiscal Year Ended June 30, 2020 (in thousands)

	General Employees	Police & Fire Plan	Correctional Plan	SVF	DCP	Total
Source of Expenses						
Outside Money Managers–Equities	$15,649	$6,196	$535	$36	$33	$22,449
Outside Money Managers–Fixed Income	3,398	1,345	116	53	26	4,938
Minnesota State Board of Investment	1,393	552	47	143	5	2,140
AON Investment	164	65	6	0	0	235
Broadridge	100	40	3	0	0	143
Meketa	91	36	3	0	0	130
Total Investment Expenses	**$20,795**	**$8,234**	**$710**	**$232**	**$64**	**$30,035**

A *Schedule of Investment Fee*s paid to money managers is provided in the *Investment Section* of this report.

Schedule of Payments to Consultants

For the Fiscal Year Ended June 30, 2020 (in thousands)

Individual or Firm Name	Fee Paid	
Actuary		
Gabriel Roeder Smith & Co.	$255	**255**
Financial Services		
Clifton Larson Allen LLP	104	
MMB / OLA Audit Fees	126	
SVF Audit Fees Multiple Auditors	287	**517**
Legal		
Attorney General	22	**22**
Management Consultants		
Activecampaign LLC	5	
Bureau of National Affairs Inc	10	
Insight Storage Solutions Inc	5	
Keystone Interpreting Solution	1	
LexisNexis Risk Data Mgmt	7	
Logmein USA Inc	3	
MMB	34	
MSRS	2	
Nighthawk Inc	22	
OneNeck IT Solutions LLC	11	
Pension Benefit Information LLC	9	
Usbank	1	**110**
Medical Evaluations		
Hennepin County	1	
MMRO	267	
Office of Administrative Hearings	8	**276**
System Development		
Ericksen Ellison & Assoc Inc	3	
MN IT Services	56	
Paragon Development Systems	108	
Works Computing Inc	77	**244**
Total Professional Service Fees		**$1,424**

Schedule of Administrative Expenses

For the Fiscal Year Ended June 30, 2020 (in thousands)

Personnel Expenses:		
Staff Salaries	$9,002	
Part-Time, Seasonal Labor	246	
Other Benefits	156	
Total Personnel Expenses		**9,404**
Professional Services:		
Actuary	255	
Financial	517	
Legal	22	
Management Consultants	110	
Medical Evaluations	276	
System Development	244	
Total Professional Services		**1,424**
Communications		
Mail & Telephone Services	712	
Printing & Advertising	94	
Total Communications		**806**
Office Building & Maintenance		
Building	415	
Depreciation - Building	270	
Bond Interest	61	
Total Office Building & Maintenance		**746**
Other:		
Depreciation - Equipment	175	
Employee Development	91	
Equipment Maintenance	654	
Indirect Costs	106	
Operating Costs	62	
Supplies & Materials	154	
Travel	434	
Total Other		**1,676**
Total Administrative Expenses		**$14,056**
Allocation of Administrative Expenses:		
Defined Benefit Plans		
Public Employees Retirement Fund	$12,268	
Public Employees Police and Fire Fund	924	
Public Employees Correctional Fund	332	
Statewide Volunteer Firefighter	298	
Defined Contribution Plan		
Defined Contribution Fund	234	
Total Administrative Expenses		**$14,056**

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INVESTMENT SECTION

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Investment Report

MINNESOTA STATE BOARD OF INVESTMENT

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INVESTMENT AUTHORITY

The assets of the Public Employees Retirement Association (PERA) are invested along with the assets of the Teachers Retirement Association and the Minnesota State Retirement System under the direction and authority of the State Board of Investment (SBI) in accordance with Minnesota Statutes, Chapters 11A and 356A. The SBI includes Minnesota's governor, auditor, secretary of state and attorney general. The Legislature has established a 17-member Investment Advisory Council (IAC) to advise the SBI and its staff on investment related matters. PERA's executive director is a member of the IAC.

INVESTMENT POLICY

Investment policy states that the SBI will operate within standard investment practices of the prudent person. The SBI is to "exercise that degree of judgment and care, under circumstances then prevailing, which persons of prudence, discretion, and intelligence exercise in the management of their own affairs, not for speculation, but for investment, considering the probable safety of their capital as well as the probable income to be derived therefrom." (See M.S., section 11A.09.) The SBI is authorized to own government obligations, corporate obligations, various short-term obligations, corporate stocks, venture capital interests, resource investments, and real estate interests subject to specific constraints. (See M.S., section 11A.24.) In particular, pension fund assets are to be invested for the exclusive benefit of the members of the fund.

INVESTMENT OBJECTIVES AND PERFORMANCE

PERA's pension contributions from employees and employers are invested in the Combined Funds. The Combined Funds include the assets of active and retired public employees who participate in the defined benefit plans administered by PERA, the Minnesota State Retirement System, and the Minnesota Teachers Retirement Association. PERA does not own any underlying assets, but instead owns a participation in the pooled Combined Funds. Because these assets normally accumulate for thirty to forty years, SBI's objective is to take advantage of the long investment time horizon offered by equities and alternative assets in order to meet its actuarial return target and ensure that sufficient funds are available to finance promised benefits at the time of retirement. The 2018 Legislature reduced the actuarial interest rate assumption for PERA to 7.5%.

The long term objectives of the Combined Funds are:

- Provide returns that are 3-5 percentage points greater than inflation over the latest 20-year period; and

- Outperform a composite market index weighted in a manner that reflects the actual asset mix of the Combined Funds over the latest 10-year period.

Consistent with these objectives, the SBI maintains a long-term strategic asset allocation policy target for the Combined Funds as follows:

- Public Equity 53%
- Fixed Income 20%
- Private Markets 25%
- Cash 2%

Based on values on June 30, 2020, the Combined Funds returned 4.3 percentage points above the CPI over the last 20 years and returned 0.2 percentage point above the composite index over the past 10 years. Investment returns ranked in the top 24th percentile over the past five years and in the top 14thth percentile over the past 10 years, compared to other public and corporate plans with over $1 billion in assets in the Trust Universe Comparison Service.

INVESTMENT PRESENTATION

Investment returns were prepared using time-weighted rate of return methodology based upon fair market value, net of investment expenses.

Respectfully submitted,

Mansco Perry III

Mansco Perry III
Executive Director and Chief Investment Officer
Minnesota State Board of Investment
November 13, 2020

Investment Results

Fund Performance

Fund	FY 2020	3-Year	5-Year	10-Year	20-Year
	Rates of Return (Annualized)				
Combined Funds (Active/Retiree)*	4.2%	7.3%	7.3%	9.7%	6.3%
Combined Composite Market Index	4.0%	7.1%	7.3%	9.5%	6.1%

* Percentages are net of all management fees.

Note: All composite indices are composed of the following market indicators, weighted according to asset allocation:

Public Equity—The Public Equity benchmark is 60.3% Russell 1000, 6.7% Russell 2000, 24.75% MSCI World ex U.S. (net), and 8.25% MSCI EM (net).
- The Russell 1000 and Russell 2000 measure the performance of the 1000 largest and 2000 next largest U.S. companies based on total market capitalization.

International Equity—The MSCI World ex U.S. index is composed of large and mid cap companies that capture approximately 85% of the total market capitalization in 22 of the 23 developed markets. The MSCI Emerging Markets index is composed of large and mid cap companies that capture approximately 85% of the total market capitalization across 24 Emerging Market countries.

Fixed Income—The Core Fixed Income benchmark is the Bloomberg Barclays U.S. Aggregate Bond Index. This index reflects the performance of the broad bond market for investment grade (Baa or higher) bonds, U.S. Treasury and agency securities, and mortgage obligation with maturities greater than one year.
-The Treasuries benchmark is the Bloomberg Treasure 5+ years Index.

Investment Results

Investment Returns by Sector

Performance of Asset Pools (Net of Fees)

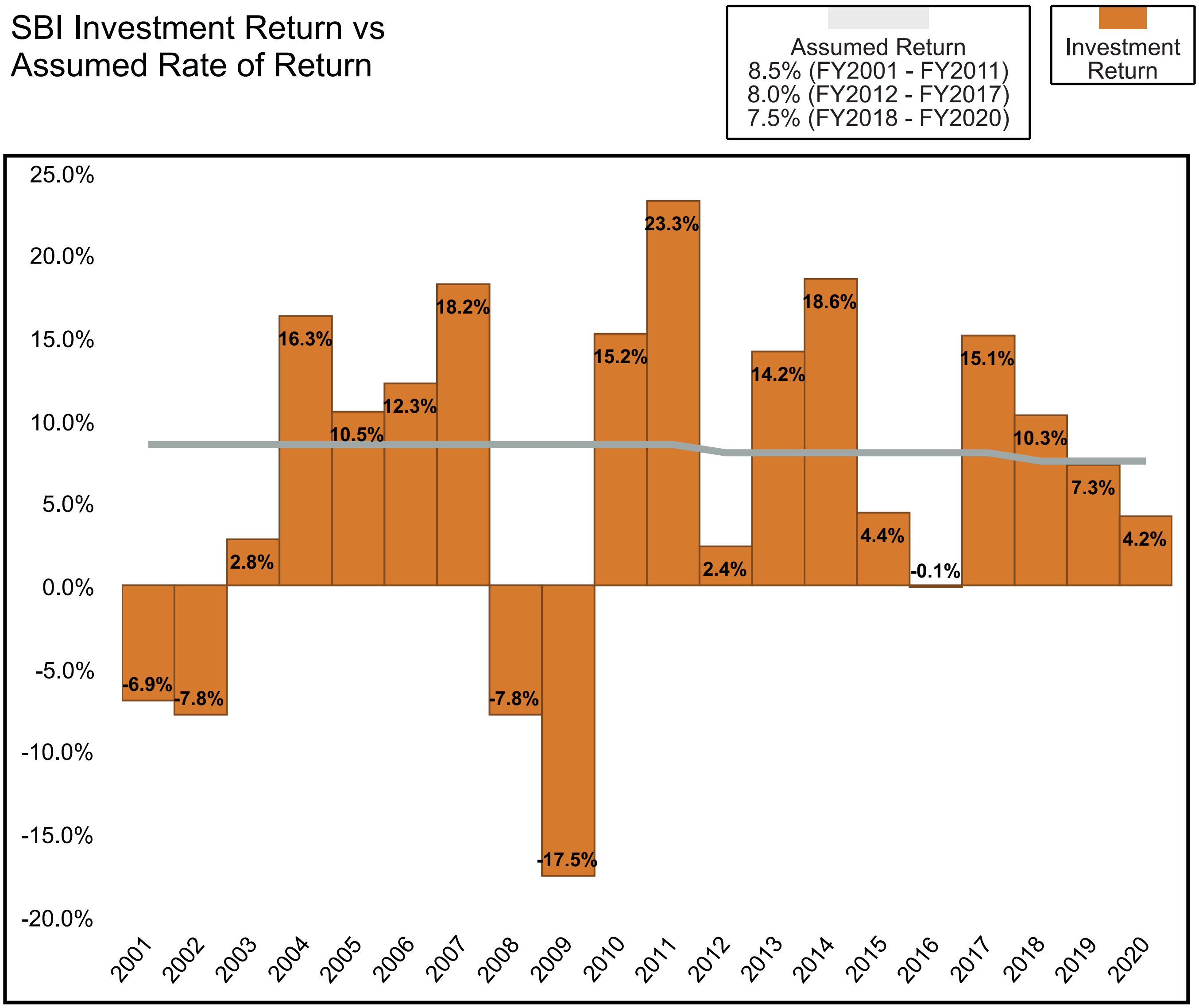
	Rates of Return (Annualized)				
	FY 2020	**3-Year**	**5-Year**	**10-Year**	**20-Year**
Domestic Equity	6.2 %	9.9 %	9.7 %	13.7 %	5.9 %
Domestic Equity Benchmark	6.0 %	9.9 %	9.9 %	13.7 %	6.0 %
Fixed Income	13.0 %	7.4 %	5.7 %	5.0 %	5.8 %
Core Bonds	9.2 %	5.8 %	4.8 %	4.5 %	5.5 %
• Core Bonds Benchmark	8.7 %	5.3 %	4.3 %	3.8 %	5.1 %
Treasuries*	16.7 %				
• Treasuries Benchmark	17.2 %				
International Equity	(4.2)%	1.3 %	2.5 %	5.4 %	3.8 %
International Equity Benchmark	(4.8)%	1.1 %	2.3 %	5.0 %	3.4 %
Alternatives	(2.6)%	7.3 %	8.2 %	10.6 %	11.1 %
Private Equity	3.6 %	12.3 %	12.6 %	13.5 %	11.7 %
Private Credit	0.4 %	7.6 %	10.6 %	11.9 %	11.4 %
Resources	(25.4)%	(7.8)%	(5.7)%	1.4 %	12.6 %
Real Estate	3.5 %	8.2 %	8.1 %	11.4 %	8.5 %

*Prior to March 2020, the returns of Core Bonds and Treasuries were not reported as a total Fixed Income return. The performance and benchmark rates for Treasuries since inception February 2018, are 11.1% and 11.4%, respectively.

Note: Investment returns were calculated using a time-weighted rate of return.

Investment Results

(continued from previous page)



The State Board of Investment (SBI) has exceeded its assumed rate of return 10 of the past 20 years. Over those 20 years, the SBI has had annualized investment earnings of 6.3 percent.

TUCS Ranking

Percentage Ranking: 1 Year — 39th 3 Year —24th 5 Year — 24th 10 year —14th

Note: Comparison is with public and corporate pension plans greater than $1 billion, gross of fees.

Asset Allocation

As of June 30, 2020

	Combined Funds	
Investment Type	**Actual Asset Mix**	**Long - term Policy Target**
Bond Pool	20.4%	20.0%
U.S. Equity	40.1%	35.5%
Broad International Stock Pool	19.5%	17.5%
Alternatives	15.7%	25.0%
Cash Equivalents	4.3%	2.0%
Total	100%	100%

Percentages are net of all management fees.

List of Largest Assets Held

June 30, 2020

Top Ten Equity Holdings (By Fair Value)

Security	Fair Value (In millions)	% of Portfolio
Microsoft Corporation	$604.90	0.00%
Apple Inc.	$574.37	0.00%
Amazon.com Inc.	$486.14	0.00%
Facebook Inc. Class A Shares	$222.34	0.00%
Alphabet Inc. Class A Shares	$174.89	0.00%
Alphabet Inc. Class C Shares	$161.40	0.00%
Johnson & Johnson	$142.56	0.00%
Visa, Inc. Class A Shares	$139.75	0.00%
Berkshire Hathaway Inc. Class B Shares	$132.05	0.00%
United Health Group Inc.	$118.04	0.00%

Top Ten Fixed Income Holdings (By Fair Value)

Security	Fair Value (In millions)	% of Portfolio	Maturity Date	Coupon %
U.S. Treasure N/B	$166.17	0.54%	11/15/2028	3.125%
U.S. Treasure N/B	$160.19	0.52%	5/15/2026	1.625%
U.S. Treasure N/B	$129.15	0.42%	5/15/2045	3.000%
U.S. Treasure N/B	$114.39	0.37%	11/15/2049	2.375%
U.S. Treasure N/B	$107.02	0.35%	2/15/2048	3.000%
U.S. Treasure N/B	$99.83	0.32%	11/15/2043	3.750%
U.S. Treasure N/B	$97.56	0.32%	11/15/2042	2.750%
U.S. Treasure N/B	$92.98	0.30%	5/15/2046	2.500%
U.S. Treasure N/B	$87.26	0.28%	2/15/2044	3.625%
U.S. Treasure N/B	$82.07	0.27%	5/15/2043	2.875%

PERA's assets are commingled in various pooled investment accounts administered by the State Board of Investment. PERA does not own specific values of the underlying assets. The percentages shown are those of the total pooled accounts. The fair value amounts are based on PERA's participation in the pools. Information on investment activity, a listing of specific investments owned by the pooled accounts and a schedule of fees and commissions can be obtained from the Minnesota State Board of Investment.

Investment Summary at Fair Value

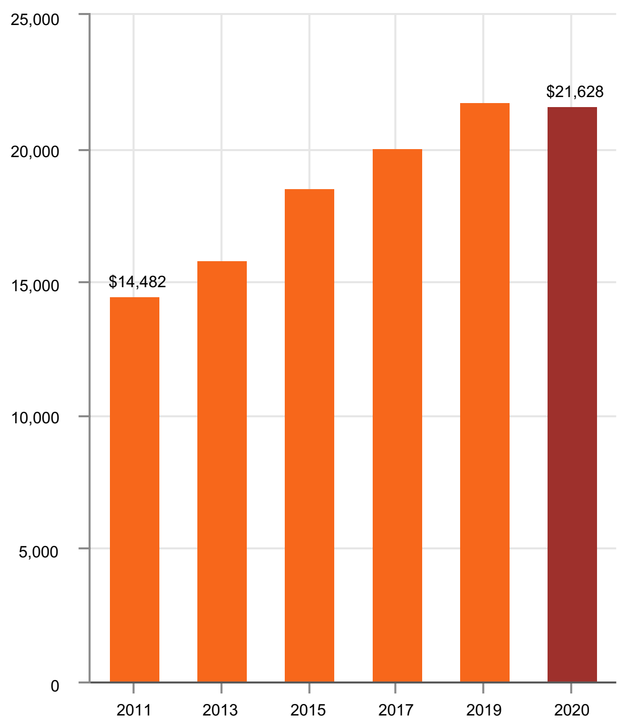
For the Fiscal Year Ended June 30, 2020 (in thousands)

	2020 Beginning Fair Value	2020 Ending Fair Value	Percent of Total Fair Value
General Employees Fund			
Pooled Accounts			
Bond Pool	$4,561,068	$4,605,517	21 %
U.S. Equities	9,337,193	9,070,936	42 %
Broad International Stock Pool	4,607,649	4,415,171	21 %
Alternatives	3,261,949	3,536,096	16 %
Total Pooled Accounts	**$21,767,859**	**$21,627,720**	**100 %**
Police and Fire Fund			
Pooled Accounts			
Bond Pool	$1,798,789	$1,826,327	21 %
U.S. Equities	3,682,393	3,597,097	42 %
Broad International Stock Pool	1,817,160	1,750,845	21 %
Alternatives	1,286,444	1,402,246	16 %
Total Pooled Accounts	**$8,584,786**	**$8,576,515**	**100 %**
Correctional Fund			
Pooled Accounts			
Bond Pool	$151,524	$160,323	21 %
U.S. Equities	310,192	315,770	42 %
Broad International Stock Pool	153,071	153,697	21 %
Alternatives	108,365	123,096	16 %
Total Pooled Accounts	**$723,152**	**$752,886**	**100 %**
Volunteer Firefighter Fund			
Volunteer Firefighter Account			
Bond Pool	$48,037	$53,229	47 %
U.S. Equities	37,767	41,435	37 %
Broad International Stock Pool	16,377	17,586	16 %
Total Pooled Accounts	**$102,181**	**$112,250**	**100 %**

Fair Value of Investments

Last 10 Years (in millions)

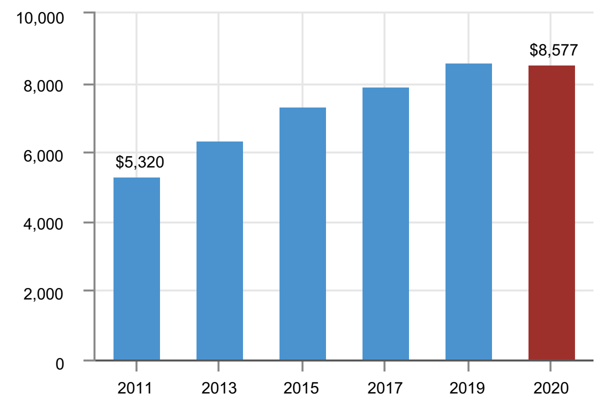
General Employees Fund



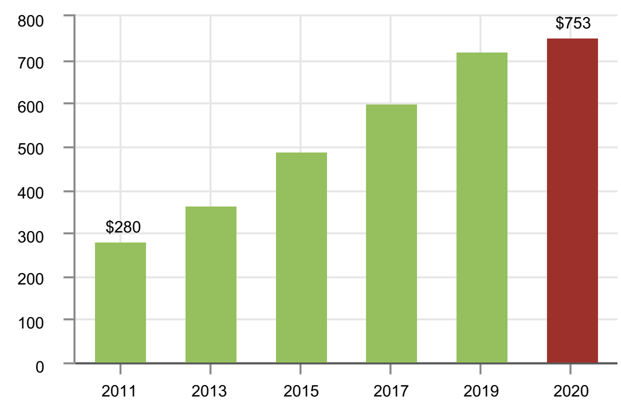
General Employees Fund
Minneapolis Employees Retirement Fund was merged into the General Employees Fund on January 1, 2015.

For comparison purposes, both funds are combined on this illustration.

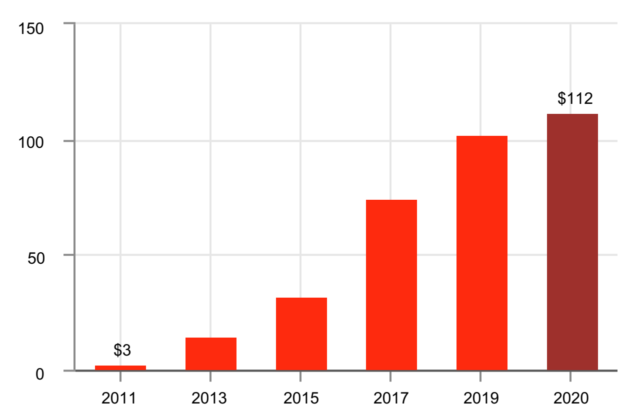
Police and Fire Fund



Correctional Fund



Volunteer Firefighter Fund



Schedule of Investment Fees

For Fiscal Year Ended June 30, 2020 (in thousands)

State Board of Investment	$2,140
AON Investment	235
Broadridge	143
Meketa	130
Total	2,648

Outside Money Managers:

Active Domestic Equity:

Barrow Hanley	291
Earnest Partners	227
Goldman Equity	864
Hotchkis and Wiley	563
LSV Asset	218
Martingale	599
Peregrine Capital	732
Sands Capital	638
Winslow Capital	380
Zevenbergen Capital	680
Arrowpoint Asset Management LLC	706
Hood River Capital Management LLC	853
Rice Hall James & Associates LLC	691
Wellington Management Company LLP	748
Total	**8,189**

Passive Domestic Equity:

Blackrock	**25**

Passive Domestic Equity Large Cap:

Blackrock Passive	**454**

Passive Domestic Equity Small Cap:

Blackrock Passive	**13**

Semi Passive Equity

Blackrock	531
JP Morgan	646
Total	**1,177**

Domestic Bonds:

Columbia	462
Blackrock Financial Mgmt	333
Dodge & Cox	518
Goldman	369
Neuberger	193
Pimco	1,006
Western Asset Management	557
Total	**3,438**

Global Equity:

Acadian Asset	678
State Street Emerging	267
AQR Capital Management	683
Fidelity Investments GPK2	596
JP Morgan Fleming	510
Earnest Partners, LLC	856
Macquarie/Delaware Investments	797
Martin Currie, Inc.	841
Marathon Asset	575
McKinley Capital	493
Morgan Stanley Dean Witter	1,685
Neuberger Berman Investment	1,067
Pzena Investment Management	926
Rock Creek	1,743
Columbia Investments	545
State Street	329
Total	**12,591**

Treasury Protection Pool:

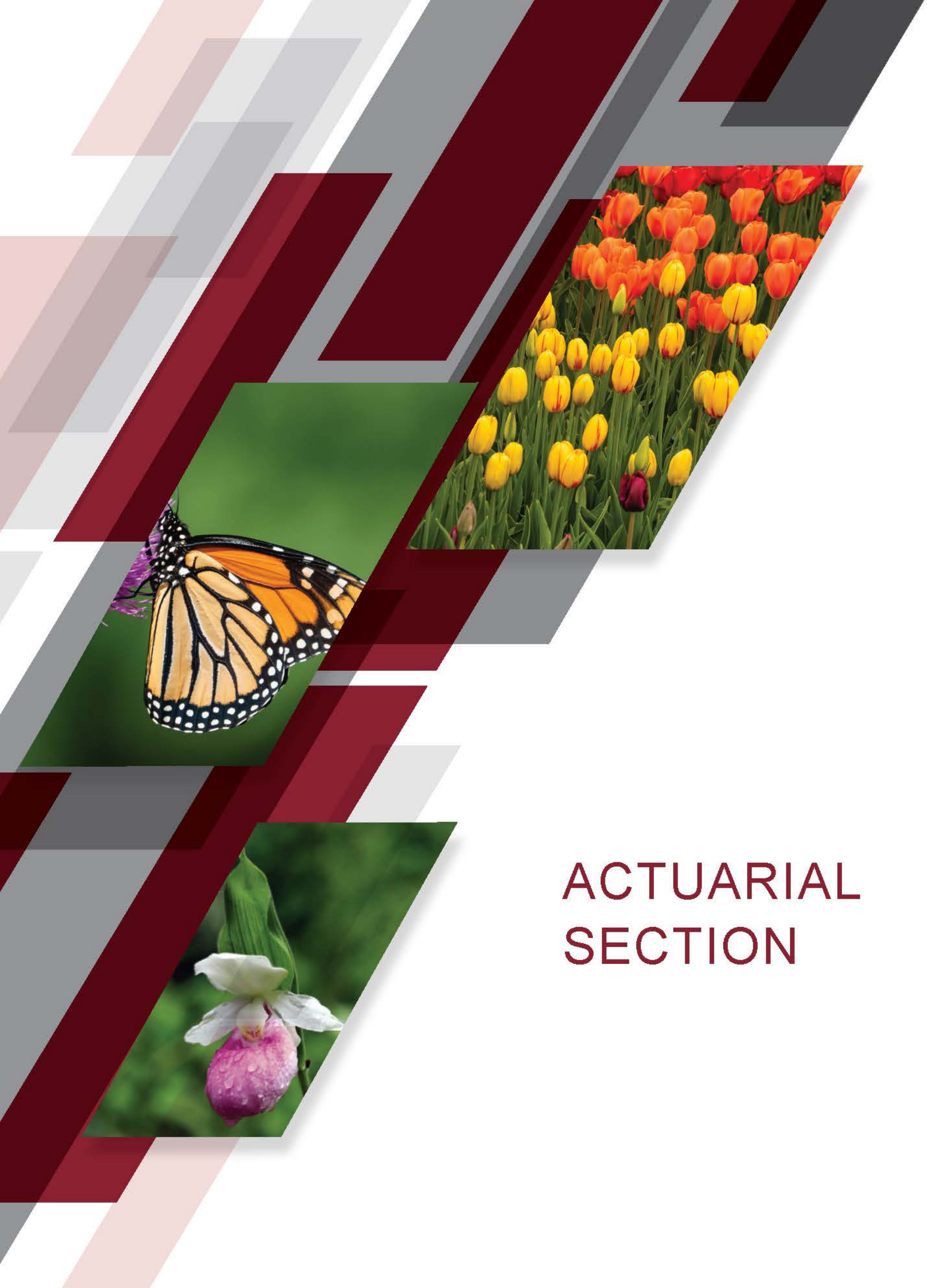
Blackrock Financial	505
Goldman Sachs	522
Neuberger	464
Total	**1,491**

Fixed Interest:

Galliard Capital Management	**9**

Total Investment Fees	**$30,035**

PERA's assets are commingled in various pooled investment accounts administered by the State Board of Investment (SBI). The SBI uses outside money managers and consultants to invest the assets. The amounts in this schedule represent PERA's share of fees paid to SBI, and fees paid by SBI to consultants and money managers. A listing of commissions paid to brokers by the money managers can be obtained from SBI.



ACTUARIAL SECTION

2020 COMPREHENSIVE ANNUAL FINANCIAL REPORT

GRS

| P: 800.521.0498 | www.grsconsulting.com

November 25, 2020

Board of Trustees
Public Employees Retirement
Association of Minnesota (PERA)
60 Empire Drive, Suite 200
St. Paul, Minnesota 55103-2088

Dear Members of the Board:

We have previously prepared and presented to you our annual actuarial valuation of the General Employees Retirement Plan, the Public Employees Police and Fire Plan, and the Local Government Correctional Service Retirement Plan as of July 1, 2020. In order to gain a full understanding of the actuarial condition of the plans, it is important to read and understand the full actuarial reports and potentially other relevant information in addition to this CAFR. The actuarial reports are available on PERA's website, along with online copies of this and previous CAFRs. Reading this Comprehensive Annual Financial Report (CAFR) is not a substitute for reading the actuarial reports.

Valuation Results

The fundamental financing objective of the fund is to establish contribution rates which will remain approximately level as a percentage of active member payroll from generation to generation and meet the required deadline for full funding. The results of the valuations for funding purposes are summarized in the following table. For all plans, because the valuations smooth asset returns over five years, the actuarial value of assets is higher than the market value of assets. The funding ratios and contribution sufficiencies/(deficiencies) on both bases are presented in the following table.

	Accrued Liability Funding Ratio		Contribution Sufficiency/ (Deficiency) (% of Pay)		
Plan	Actuarial Value of Assets	Market Value of Assets	Actuarial Value of Assets	Market Value of Assets	Statutory Amortization Date
General	79.62%	79.06%	1.40%	1.26%	2048
Police/Fire	87.80%	87.19%	4.13%	3.79%	2048
Correctional	97.52%	96.67%	0.12%	(0.06)%	2048

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Board of Trustees
November 25, 2020
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All of the plans currently have a contribution sufficiency on an Actuarial Value of Assets basis. A contribution sufficiency means that the fund is expected to meet the goal of full funding by (or before) the statutory amortization date. A contribution deficiency means the opposite; full funding will not be attained by the statutory amortization date.

The funded ratio measurements shown above are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations (of transferring the obligations to an unrelated third party in an arm's length market value transaction). The measurements also are dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future required contributions will be different from those calculated in the actuarial reports due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement of 100% would not be synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

The following changes were recognized this year in the funding valuations for all plans:

- The mortality improvement scale was updated from MP-2018 to MP-2019.

Additionally, the following changes were recognized this year in the funding valuations for the General Employees Retirement Plan, as recommended in the June 30, 2019 experience study:

- The price inflation assumption was decreased from 2.50% to 2.25%.
- The payroll growth assumption was decreased from 3.25% to 3.00%.
- Assumed salary increase rates were changed. The net effect is assumed rates that average 0.25% less than previous rates.
- Assumed rates of retirement were changed, resulting in more unreduced (normal) retirements and slightly fewer Rule of 90 and early retirements.
- Assumed rates of termination were changed. The new rates are based on service and are generally lower than the previous rates for years 2-5 and slightly higher thereafter.
- Assumed rates of disability were changed, resulting in fewer predicted disability retirements for males and females.
- The base mortality table for healthy annuitants and employees was changed from the RP-2014 table to the PUB-2010 General Mortality table, with adjustments. The base mortality table for disabled annuitants was changed from the RP-2014 disabled annuitant mortality table to the PUB-2010 General/Teacher disabled annuitant mortality table, with adjustments.
- The assumed spouse age difference was changed from two years older for females to one year older.
- The assumed number of married male new retirees electing the 100% Joint & Survivor option changed from 35% to 45%. The assumed number of married female new retirees electing the 100% Joint & Survivor option changed from 15% to 30%. The corresponding number of married new retirees electing the Life annuity option was adjusted accordingly.

(continued from previous page)

Board of Trustees
November 25, 2020
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GRS performed a brief review of the basic financial and membership data provided to us by the association as of June 30, 2020, and determined that the data appears reasonable in comparison to last year. We have relied upon the data as submitted in performing the actuarial valuation and preparing trend data schedules. The actuarial cost method and the assumptions related to asset valuation, investment return, earnings progression and active member payroll growth are specified by State Statute. All other assumptions are based on actual experience with changes recommended by the actuary, adopted by the PERA Board, and approved by the Legislative Commission on Pensions and Retirement (LCPR). The assumptions and methods meet the parameters established by Actuarial Standards of Practice.

In a 2019 analysis of long-term rate of investment return and inflation assumptions, GRS determined that an investment return assumption of 7.50% was reasonable. Please see our experience study report for the General Employees Retirement Plan dated June 27, 2019 for additional information. This report also concluded that the probability of exceeding the current 7.50% assumption over 10 years is 44%. If capital market assumptions decline from present levels, the 7.50% return assumption might not comply with actuarial standards for the July 1, 2021 valuation.

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

The actuary prepared the following supporting schedules in the Actuarial Section of the CAFR:

- Schedule of Funding Progress;
- Determination of Contribution Sufficiency;
- Determination of Actuarial Value of Assets; and
- Schedule of Changes in Unfunded Actuarial Accrued Liabilities

All other supporting schedules in the Actuarial Section, along with the Schedule of Changes in Net Pension Liabilities and Related Ratios and the Schedule of Contributions from Employers and Non-employers in the Financial Section of the CAFR were prepared by PERA based on information included in the actuary's annual valuation.

The valuation reports do not fully reflect the recent and still developing impact of COVID-19, which is likely to influence demographic and investment experience, at least in the short term. We will continue to monitor these developments and their impact on the plan.

The valuation reports were 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.

Actuary's Certification Letter

(continued from previous page)

Board of Trustees
November 25, 2020
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To the best of our knowledge and belief, the valuations were performed in accordance with generally accepted actuarial principles and procedures, current Governmental Accounting Standards Board (GASB) pronouncements, the requirements of Minnesota Statutes, Section 356.215, and the requirements of the Standards for Actuarial Work established by the LCPR. In our opinion, the results of the valuations reflect the actuarial position of the plans on an ongoing basis under the prescribed assumptions, methods, and procedures.

Brian B. Murphy and Bonita J. Wurst 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 in this report. In addition, Mr. Murphy meets the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c). The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

Respectfully submitted,

Brian B. Murphy

Brian B. Murphy, FSA, EA, FCA, MAAA, PhD

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, FCA, MAAA

BBM/BJW:ah

GRS

Summary of Actuarial Assumptions and Methods

PERA implemented GASB Statement No. 67 in fiscal year 2014, which requires pension plans to calculate and disclose a net pension liability in financial statement footnote disclosures using a fairly specific set of actuarial methods and assumptions. The schedules found in the Actuarial Section of this Comprehensive Annual Financial Report (CAFR), on the other hand, are based on actuarial assumptions and methods specified by Minnesota Statutes or approved by the Legislative Commission on Pensions and Retirement to determine funding requirements. The actuarial assumptions are based on experience studies of PERA's demographics for each plan conducted by PERA's actuary.

While some of the actuarial assumptions used for GASB financial reporting purposes are the same as the actuarial assumptions used for funding purposes, there are a few differences. For example, when calculating the net pension liability for reporting purposes, the fair value of assets is used in accordance with GASB 67. When calculating the unfunded actuarial accrued liability for funding purposes, the actuarial value of assets (smoothed over a 5-year period) is used in accordance with Minnesota Statutes.

The actuarial assumptions used in the funding actuarial valuations are set in statute or approved by the Legislative Commission on Pensions and Retirement. PERA's actuary uses the funding actuarial assumptions disclosed on the following pages when preparing the financial reporting actuarial valuations. The Summary of Actuarial Assumptions and Methods are listed on the following pages along with the year adopted for each plan.

A summary of plan provisions is available in the Notes to the Financial Information. The responsibility for establishing and maintaining a funding policy rests with the Minnesota Legislature.

General Employees Plan

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by *Minnesota Statutes*, the Legislative Commission on Pensions and Retirement (LCPR), or the Board of Trustees. These parties are responsible for selecting the assumptions used for this valuation. The most recent four-year experience study for the period 2014-2018 was issued on June 27, 2019. The recommended assumption changes were adopted by the Board and become effective with the July 1, 2020 actuarial valuation. The Allowance for Combined Service Annuity assumptions are based on an analysis completed by the LCPR actuary and documented in a report dated October 2016.

Actuarial Cost Method	Entry Age Normal, with costs allocated as a level percentage of payroll. Actuarial gains (losses) reduce (increase) the unfunded actuarial accrued liability. (1960)*
Asset Valuation Method	Fair market value smoothed over 5 years. (2008)
Investment return	7.5% per annum. (2018)
Benefit increases after retirement	1.25% per annum. (2018)
Salary increases	Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year. (2018)
Inflation	2.25% per year. (2020)
Payroll growth	3.00% per year. (2020)
Mortality rates	
Healthy pre-retirement	Pub-2010 General Employee Mortality Table adjusted for mortality improvements using projection scale MP-2019. Rates are multiplied by a factor of 1.07 for makes and 0.98 for females. (2020)
Healthy post-retirement	Pub-2010 Healthy General Employee Mortality Table adjusted for mortality improvements using projection scale MP-2019. Rates are multiplied by a factor of 1.02 for makes and 0.90 for females. (2020)
Disabled retirees	Pub-2010 General/Teacher Disabled Retiree Mortality Table adjusted for mortality improvements using projection scale MP-2019. Rates are set forward two years for males and set forward four years for females. (2020)
Mortality rate note:	The Pub-2010 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18 to 80 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have extended the annuitant mortality table as needed for members younger than age 50 who are receiving a benefit by deriving rates based on the employee table and the juvenile table. Similarly, we have extended the employee table as needed for members older than age 80 by deriving rates based on the annuitant table.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the tables. Members who have attained the highest assumed retirement age are assumed to retire in one year. (2016)
Withdrawal	Service-related rates based on experience; see table of sample rates. (2016)
Disability	Age-related rates based on experience; see table of sample rates. (2016)
Allowance for combined service annuity	Liabilities for former members are increased by 15.0% for vested members and 3.0% for non-vested members to account for the effect that some participants have eligibility for a Combined Service Annuity. (2017)

* Year in parenthesis is the date of adoption.

Summary of Actuarial Assumptions and Methods

General Employees Plan

Administrative expenses	Prior year administrative expenses expressed as percentage of prior year projected payroll. (1989)
Refund of contributions	Account balances accumulate interest until normal retirement dates at the rates described in the Summary of Plan Provisions and are discounted back to the valuation date. All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Commencement of deferred	Members receiving deferred annuities (including current benefits terminated deferred members) are assumed to begin receiving benefits at Normal Retirement.
Percentage married	80% of male and 70% of female active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Males are assumed to have a beneficiary three years younger, while females are assumed to have a beneficiary one year older. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 10% elect 25% Joint & Survivor option 15% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 45% elect 100% Joint & Survivor option Females: 10% elect 25% Joint & Survivor option 10% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 30% elect 100% Joint & Survivor option Remaining married members and unmarried members are assumed to elect the Straight Life option. Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Pay Increases	Pay increases are assumed to happen at the beginning of the year. This is equivalent to assuming that reported earnings are pensionable earnings for the year ending on the valuation date.

General Employees Plan

Age in 2020	Percentage of Members Dying Each Year*					
	Healthy Post-Retirement Mortality		Healthy Pre-Retirement Mortality		Disability Mortality	
	Male	Female	Male	Female	Male	Female
20	0.04%	0.01%	0.04%	0.01%	0.37%	0.18%
25	0.03%	0.01%	0.04%	0.01%	0.31%	0.29%
30	0.05%	0.02%	0.05%	0.02%	0.54%	0.49%
35	0.07%	0.03%	0.07%	0.03%	0.74%	0.77%
40	0.08%	0.04%	0.09%	0.04%	0.95%	1.04%
45	0.11%	0.06%	0.11%	0.05%	1.24%	1.35%
50	0.28%	0.19%	0.15%	0.08%	1.70%	1.63%
55	0.43%	0.27%	0.23%	0.13%	2.23%	2.01%
60	0.65%	0.37%	0.36%	0.19%	2.79%	2.32%
65	0.94%	0.53%	0.51%	0.28%	3.39%	2.62%
70	1.46%	0.87%	0.70%	0.43%	4.06%	3.37%
75	2.48%	1.55%	1.07%	0.72%	5.40%	5.04%
80	4.48%	2.85%	1.70%	1.23%	7.88%	8.04%
85	8.18%	5.35%	7.22%	5.01%	11.77%	12.23%
90	14.13%	9.93%	14.82%	10.81%	18.05%	17.24%

* Generally, mortality rates are expected to increase as age increases. These standard mortality rates have been adjusted slightly to prevent decreasing mortality rates. If the rates were not adjusted as described, we would not expect the valuation results to be materially different.

Age	Disability Retirement	
	Male	Female
20	0.01%	0.01%
25	0.01%	0.01%
30	0.01%	0.01%
35	0.02%	0.02%
40	0.04%	0.04%
45	0.06%	0.05%
50	0.11%	0.10%
55	0.26%	0.14%
60	0.53%	0.21%
65	0.00%	0.00%
70	0.00%	0.00%

Continued

Year	Salary Scale Increase
1	10.25 %
2	7.25 %
3	6.00 %
4	5.50 %
5	5.00 %
6	4.70 %
7	4.50 %
8	4.40 %
9	4.30 %
10	4.20 %
11	4.00 %
12	3.90 %
13	3.80 %
14	3.70 %
15	3.65 %
16	3.60 %
17	3.50 %
18	3.40 %
19	3.40 %
20	3.40 %
21	3.30 %
22	3.30 %
23	3.30 %
24	3.20 %
25	3.20 %
26	3.10 %
27	3.00 %
28	3.00 %
29	3.00 %
30+	3.00 %

	% Withdrawals	
Year	Male	Female
1	21.50 %	21.50 %
2	16.25 %	17.25 %
3	11.00 %	13.00 %
4	9.00 %	11.00 %
5	8.00 %	9.00 %
6	7.00 %	8.50 %
7	6.25 %	8.00 %
8	5.50 %	7.50 %
9	5.00 %	7.00 %
10	4.50 %	6.00 %
11	4.25 %	5.50 %
12	4.00 %	5.25 %
13	3.75 %	5.00 %
14	3.50 %	4.75 %
15	3.00 %	4.25 %
16	2.75 %	3.75 %
17	2.50 %	3.50 %
18	2.25 %	3.00 %
19	2.00 %	2.80 %
20	1.90 %	2.70 %
21	1.85 %	2.60 %
22	1.80 %	2.50 %
23	1.75 %	2.40 %
24	1.70 %	2.30 %
25	1.65 %	2.20 %
26	1.60 %	2.10 %
27	1.55 %	2.00 %
28	1.50 %	1.50 %
29	1.00 %	1.50 %
30+	1.00 %	1.50 %

Police and Fire Plan

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the Board of Trustees. These parties are responsible for selecting the assumptions used for this valuation. Unless otherwise noted, the assumptions prescribed are based on the last experience study, dated August 30, 2016. The most recent four-year experience study for the Police and Fire Plan was completed in 2020. The recommended assumptions for those plans were adopted by the Board and will be effective with the July 1, 2021 actuarial valuations if approved by the Legislature. The Allowance for Combined Service Annuity assumptions are based on an analysis completed by the LCPR actuary and documented in a report dated October 2016.

Actuarial Cost Method	Entry Age Normal, with costs allocated as a level percentage of payroll. Actuarial gains (losses) reduce (increase) the unfunded actuarial accrued liability. (1960)*
Asset Valuation Method	Fair market value smoothed over 5 years. (2008)
Investment return	7.5% per annum. (2018)
Benefit increases after retirement	1.00% for all years, no trigger. (2018)
Salary increases	Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year. (2018)
Inflation	2.50% per year. (2018)
Payroll growth	3.25% per year. (2018)
Mortality rates	
Healthy pre-retirement	RP-2014 employee generational mortality table projected with mortality improvement scale MP-2019, from a base year 2006. (2020)
Healthy post-retirement	RP-2014 annuitant generational mortality table projected with mortality improvement scale. MP-2019 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2020)
Disabled retirees	RP-2014 annuitant generational mortality table, improvement scale MP-2019 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2020)
Mortality rate note:	The RP-2014 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18 to 80 and the annuitant mortality table contains mortality rate for ages 50 to 120. We have extended the annuitant mortality table as needed for members younger than age 50 who are receiving a benefit by deriving rates based on the employee table and the juvenile table. Similarly, we have extended the employee table as needed for members older than age 80 by deriving rates based on the annuitant table.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year. (2016)
Withdrawal	Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in rate table. Select rates in the first three years are: (2011)

Year	Select Withdrawal Rates
1	3.00%
2	3.00%
3	3.00%

Disability	Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related.

* Year in parenthesis is the date of adoption.

Continued

Summary of Actuarial Assumptions and Methods

Allowance for combined service annuity	Liabilities for former members are increased by 33.0% for vested members and 2.0% for non-vested members to account for the effect of some participants having eligibility for a Combined Service Annuity. (2017)
Administrative expenses	Prior year administrative expenses expressed as percentage of prior year projected payroll. (1989)
Refund of contributions	Account balances accumulate interest until normal retirement date and are discounted back to the valuation date. All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55.
Percentage married	85% of male and 60% of female active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Males are assumed to be two years older than females. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 10% elect 25% Joint & Survivor option 20% elect 50% Joint & Survivor option 20% elect 75% Joint & Survivor option 35% elect 100% Joint & Survivor option Females: 20% elect 25% Joint & Survivor option 20% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 20% elect 100% Joint & Survivor option Remaining married members and unmarried members are assumed to elect the Straight Life option. Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Pay Increases	Pay increases are assumed to happen at the beginning of the year. This is equivalent to assuming that reported earnings are pensionable earnings for the year ending on the valuation date.

Police and Fire Plan

Age in 2020	Percentage of Members Dying Each Year*					
	Healthy Post-Retirement Mortality		Healthy Pre-Retirement Mortality		Disability Mortality	
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.05%	0.02%	0.04%	0.02%
25	0.07%	0.04%	0.06%	0.02%	0.07%	0.04%
30	0.11%	0.08%	0.06%	0.03%	0.11%	0.08%
35	0.17%	0.14%	0.08%	0.04%	0.17%	0.14%
40	0.24%	0.20%	0.08%	0.05%	0.24%	0.20%
45	0.30%	0.23%	0.11%	0.07%	0.30%	0.23%
50	0.40%	0.28%	0.17%	0.11%	0.40%	0.28%
55	0.56%	0.39%	0.29%	0.18%	0.56%	0.39%
60	0.80%	0.60%	0.50%	0.28%	0.80%	0.60%
65	1.14%	0.87%	0.89%	0.40%	1.14%	0.87%
70	1.67%	1.31%	1.44%	0.64%	1.67%	1.31%
75	2.65%	2.14%	2.39%	1.10%	2.65%	2.14%
80	4.49%	3.68%	4.06%	1.94%	4.49%	3.68%
85	7.88%	6.60%	8.00%	5.16%	7.88%	6.60%
90	13.87%	11.78%	14.62%	11.36%	13.87%	11.78%

*Generally, mortality rates are expected to increase as age increases. These standard mortality rates have been adjusted slightly to prevent decreasing mortality rates. If the rates were not adjusted as described, we would not expect the valuation results to be materially different.

Age	Withdrawal Rates After Third Year		Disability Retirement	
	Male	Female	Male	Female
20	3.00%	3.00%	0.11%	0.11%
25	2.60%	2.60%	0.13%	0.13%
30	2.10%	2.10%	0.16%	0.16%
35	1.60%	1.60%	0.19%	0.19%
40	1.25%	1.25%	0.29%	0.29%
45	1.25%	1.25%	0.54%	0.54%
50	0.00%	0.00%	1.04%	1.04%
55	0.00%	0.00%	2.03%	2.03%
60	0.00%	0.00%	0.00%	0.00%

Police and Fire Plan

Age	Retirement
50	10.00%
51	7.00%
52	7.00%
53	10.00%
54	10.00%
55	25.00%
56	22.50%
57	22.50%
58	22.50%
59	20.00%
60	22.50%
61	25.00%
62	30.00%
63	30.00%
64	30.00%
65	50.00%
66	50.00%
67	50.00%
68	50.00%
69	50.00%
70+	100.00%

Salary Scale	
Year	Increase
1	12.25%
2	10.50%
3	8.75%
4	7.75%
5	6.25%
6	5.75%
7	5.25%
8	5.00%
9	4.75%
10	4.50%
11	4.25%
12	4.15%
13	4.05%
14	3.95%
15	3.85%
16	3.75%
17	3.75%
18	3.75%
19	3.75%
20	3.75%
21	3.65%
22	3.55%
23	3.45%
24	3.35%
25+	3.25%

Correctional Plan

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the Board of Trustees. These parties are responsible for selecting the assumptions used for this valuation. Unless noted otherwise, the assumptions prescribed are based on the last experience study, dated February 2012 prepared by a former actuary. The mortality assumption is based on the Public Employees Police and Fire Plan experience study, dated August 30, 2016. The most recent four-year experience study for the Correctional Plan was completed in 2020. The recommended assumptions for those plans were adopted by the Board and will be effective with the July 1, 2021 actuarial valuations if approved by the Legislature. The Allowance for Combined Service Annuity assumptions are based on an analysis completed by the LCPR actuary and documented in a report dated October 2016.

Actuarial Cost Method	Entry Age Normal, with costs allocated as a level percentage of payroll. Actuarial gains (losses) reduce (increase) the unfunded actuarial accrued liability. (1999)*
Asset Valuation Method	Fair market value smoothed over 5 years. (2008)
Investment return	7.5% per annum. (2018)
Benefit increases after retirement	2.00% per annum. (2018)
Salary increases	Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year. (2018)
Inflation	2.5% per year. (2018)
Payroll growth	3.25% per year. (2018)
Mortality rates	
Healthy Pre-retirement	RP-2014 employee generational mortality table projected with mortality improvement scale MP-2019, from a base year of 2006. (2020)
Healthy Post-retirement	RP-2014 annuitant generational mortality table projected with mortality improvement scale MP-2019 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2020)
Disabled retirees	RP-2014 annuitant generational mortality table projected with mortality improvement scale MP-2019 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2020)
Mortality rate note:	The RP-2014 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18 to 80 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have extended the annuitant mortality table as needed for members younger than age 50 who are receiving a benefit by deriving rates based on the employee table and the juvenile table. Similarly, we have extended the employee table as needed for members older than age 80 by deriving rates based on the annuitant table.
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table.
Withdrawal	Members who have attained the highest assumed retirement age are assumed to retire in one year. (2016) Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in rate table. Select rates in the first three years are: (2011)

Year	Select Withdrawal Rates
1	25%
2	20%
3	15%

* Year in parenthesis is the date of adoption.

Continued

Summary of Actuarial Assumptions and Methods

Correctional Plan

Disability	Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related.
Allowance for combined service annuity	Liabilities for former members are increased by 35.0% for vested members and 1.0% for non-vested members to account for the effect of some participants having eligibility for a Combined Service Annuity. (2017)
Administrative expenses	Prior year administrative expenses expressed as percentage of prior year projected payroll. (1989)
Refund of contributions	Account balances accumulate interest until normal retirement date and are discounted back to the valuation date. All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 55.
Percentage married	85% of active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Females are assumed to be three years younger than their male spouses. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 5% elect 25% Joint & Survivor option 10% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 35% elect 100% Joint & Survivor option Females: 5% elect 25% Joint & Survivor option 5% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 5% elect 100% Joint & Survivor option Remaining married members and unmarried members are assumed to elect the Straight Life option. Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Pay Increases	Pay increases are assumed to happen at the beginning of the fiscal year. This is equivalent to assuming that reported earnings are pensionable earnings for the year ending on the valuation date.

Correctional Plan

	Percentage of Members Dying Each Year*					
	Healthy Post-Retirement Mortality		Healthy Pre-Retirement Mortality		Disability Mortality	
Age in 2020	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.05%	0.02%	0.04%	0.02%
25	0.07%	0.04%	0.06%	0.02%	0.07%	0.04%
30	0.11%	0.08%	0.06%	0.03%	0.11%	0.08%
35	0.17%	0.14%	0.08%	0.04%	0.17%	0.14%
40	0.24%	0.20%	0.08%	0.05%	0.24%	0.20%
45	0.30%	0.23%	0.11%	0.07%	0.30%	0.23%
50	0.40%	0.28%	0.17%	0.11%	0.40%	0.28%
55	0.56%	0.39%	0.29%	0.18%	0.56%	0.39%
60	0.80%	0.60%	0.50%	0.28%	0.80%	0.60%
65	1.14%	0.87%	0.89%	0.40%	1.14%	0.87%
70	1.67%	1.31%	1.44%	0.64%	1.67%	1.31%
75	2.65%	2.14%	2.39%	1.10%	2.65%	2.14%
80	4.49%	3.68%	4.06%	1.94%	4.49%	3.68%
85	7.88%	6.60%	8.00%	5.16%	7.88%	6.60%
90	13.87%	11.78%	14.62%	11.36%	13.87%	11.78%

* Generally, mortality rates are expected to increase as age increases. These standard mortality rates have been adjusted slightly to prevent decreasing mortality rates. If the rates were not adjusted as described, we would not expect the valuation results to be materially different.

	Withdrawal Rates		Disability Retirement	
Age	Male	Female	Male	Female
20	14.70%	14.20%	0.04%	0.04%
25	14.70%	14.20%	0.06%	0.06%
30	9.10%	11.40%	0.10%	0.08%
35	6.00%	8.60%	0.18%	0.11%
40	4.40%	6.90%	0.23%	0.18%
45	3.40%	4.30%	0.34%	0.39%
50	2.40%	3.10%	0.55%	0.70%
55	1.40%	2.20%	0.88%	1.18%
60	0.10%	0.20%	1.41%	2.41%
65	0.00%	0.00%	1.67%	2.67%

Correctional Plan

Age	Retirement	Salary Scale Age	Salary Scale Increase
50	3.00%	20	8.50%
51	2.00%	25	7.25%
52	2.00%	30	6.25%
53	2.00%	35	5.75%
54	5.00%	40	5.25%
55	20.00%	45	4.50%
56	8.00%	50	4.50%
57	8.00%	55	4.25%
58	8.00%	60	3.75%
59	8.00%	65	3.50%
60	15.00%	70+	3.50%
61	15.00%		
62	30.00%		
63	30.00%		
64	30.00%		
65	40.00%		
66	40.00%		
67	40.00%		
68	40.00%		
69	40.00%		
70+	100.00%		

Schedule of Funding Progress

Last 10 Years (in thousands, unaudited)

General Employees Plan

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)-Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/c]
06/30/2020	$22,792,333	$28,626,916	$5,834,583	79.62%	$6,698,754	87.1%
06/30/2019	$21,979,022	$27,969,744	$5,990,722	78.58%	$6,523,754	91.8%
06/30/2018	$21,129,746	$27,101,067	$5,971,321	77.97%	$6,298,815	94.8%
06/30/2017	$19,916,322	$25,615,722	$5,699,400	77.75%	$6,156,985	92.6%
06/30/2016	$18,765,863	$24,848,409	$6,082,546	75.52%	$5,773,708	105.3%
06/30/2015	$17,974,439	$23,560,951	$5,586,512	76.29%	$5,549,255	100.7%
06/30/2014	$15,644,540	$21,282,504	$5,637,964	73.51%	$5,351,920	105.3%
06/30/2013	$14,113,295	$19,379,769	$5,266,474	72.82%	$5,246,928	100.4%
06/30/2012	$13,661,682	$18,598,897	$4,937,215	73.45%	$5,142,592	96.0%
06/30/2011	$13,455,753	$17,898,849	$4,443,096	75.18%	$5,079,429	87.5%

Police and Fire Plan

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)-Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/c]
06/30/2020	$9,036,069	$10,291,567	$1,255,498	87.80%	$1,069,481	117.4%
06/30/2019	$8,661,613	$9,909,153	$1,247,540	87.41%	$1,011,421	123.3%
06/30/2018	$8,320,094	$9,552,804	$1,232,710	87.10%	$976,657	126.2%
06/30/2017	$7,840,549	$9,199,208	$1,358,659	85.23%	$944,296	143.9%
06/30/2016	$7,385,777	$8,417,621	$1,031,844	87.74%	$881,222	117.1%
06/30/2015	$7,076,271	$8,460,477	$1,384,206	83.64%	$845,076	163.8%
06/30/2014	$6,525,019	$8,151,328	$1,626,309	80.05%	$820,333	198.2%
06/30/2013	$5,932,945	$7,304,032	$1,371,087	81.23%	$796,188	172.2%
06/30/2012	$5,797,868	$7,403,295	$1,605,427	78.31%	$794,417	202.1%
06/30/2011	$5,274,602	$6,363,546	$1,088,944	82.89%	$775,806	140.4%

Correctional Plan

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)-Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/c]
6/30/2020	$794,221	$814,456	$20,235	97.52 %	$217,702	9.3 %
6/30/2019	$729,570	$758,268	$28,698	96.22 %	$214,151	13.4 %
6/30/2018	$666,012	$696,842	$30,830	95.58 %	$205,077	15.0 %
6/30/2017	$595,366	$629,870	$34,504	94.52 %	$200,103	17.2 %
6/30/2016	$529,879	$553,840	$23,961	95.67 %	$188,816	12.7 %
6/30/2015	$475,963	$498,052	$22,089	95.56 %	$179,623	12.3 %
6/30/2014	$410,489	$426,508	$16,019	96.24 %	$172,041	9.3 %
6/30/2013	$346,778	$381,179	$34,401	90.98 %	$164,820	20.9 %
6/30/2012	$306,454	$343,199	$36,745	89.29 %	$164,340	22.4 %
6/30/2011	$274,704	$284,593	$9,889	96.53 %	$165,077	6.0 %

Solvency Test

Last 10 Years (in thousands)

General Employees Plan

Valuation Date	Actuarial Accrued Liability For: Active Member Contribution (1)	Current Retirees and Beneficiaries(2)	Active Members (Employer Financed) Portion (3)	Valuation Assets	Portion of Accrued Liabilities Covered by Valuation Assets: 1	2	3
6/30/2020	$3,471,543	$18,409,104	$6,746,269	$22,792,333	100%	100%	13.5%
6/30/2019	$3,346,315	$17,944,118	$6,679,311	$21,979,022	100%	100%	10.3%
6/30/2018	$3,239,795	$17,185,254	$6,676,018	$21,129,746	100%	100%	10.6%
6/30/2017	$3,148,413	$15,800,416	$6,666,893	$19,916,322	100%	100%	14.5%
6/30/2016	$3,018,468	$15,706,371	$6,123,570	$18,765,863	100%	100%	0.7%
6/30/2015	$2,915,621	$14,666,626	$5,978,704	$17,974,439	100%	100%	6.6%
6/30/2014	$2,827,447	$12,614,999	$5,840,058	$15,644,540	100%	100%	3.5%
6/30/2013	$2,739,037	$11,432,882	$5,207,850	$14,113,295	100%	99%	0.0%
6/30/2012	$2,644,948	$10,785,022	$5,168,927	$13,661,682	100%	100%	4.5%
6/30/2011	$2,548,609	$10,195,812	$5,154,428	$13,455,753	100%	100%	13.8%

Police and Fire Plan

Valuation Date	Actuarial Accrued Liability For: Active Member Contribution (1)	Current Retirees and Beneficiaries(2)	Active Members (Employer Financed) Portion (3)	Valuation Assets	Portion of Accrued Liabilities Covered by Valuation Assets: 1	2	3
06/30/20	$990,616	$6,448,667	$2,852,284	$9,036,069	100%	100%	56.0 %
06/30/19	$923,025	$6,271,401	$2,714,727	$8,661,613	100%	100%	54.0 %
06/30/18	$877,470	$6,021,677	$2,653,657	$8,320,094	100%	100%	53.5 %
06/30/17	$821,166	$5,744,606	$2,633,436	$7,840,549	100%	100%	48.4 %
06/30/16	$769,533	$5,279,381	$2,368,707	$7,385,777	100%	100%	56.4 %
06/30/15	$715,501	$5,310,721	$2,434,255	$7,076,271	100%	100%	43.1 %
06/30/14	$662,732	$5,190,447	$2,298,149	$6,525,019	100%	100%	29.2 %
06/30/13	$647,401	$4,635,133	$2,021,498	$5,932,945	100%	100%	32.2 %
06/30/12	$609,387	$4,654,847	$2,139,061	$5,797,868	100%	100%	24.9 %
06/30/11	$571,695	$3,801,239	$1,990,612	$5,274,602	100%	100%	45.3 %

Correctional Plan

Valuation Date	Actuarial Accrued Liability For: Active Member Contribution (1)	Current Retirees and Beneficiaries(2)	Active Members (Employer Financed) Portion (3)	Valuation Assets	Portion of Accrued Liabilities Covered by Valuation Assets: 1	2	3
06/30/20	$91,782	$416,648	$306,026	$794,221	100 %	100 %	93.4 %
06/30/19	$89,874	$369,015	$299,379	$729,570	100 %	100 %	90.4 %
06/30/18	$86,410	$326,339	$284,093	$666,012	100 %	100 %	89.1 %
06/30/17	$84,107	$280,963	$264,800	$595,366	100 %	100 %	87.0 %
06/30/16	$81,675	$228,642	$243,523	$526,879	100 %	100 %	88.9 %
06/30/15	$77,771	$194,694	$225,587	$475,963	100 %	100 %	90.2 %
06/30/14	$75,492	$154,273	$196,743	$410,489	100 %	100 %	91.9 %
06/30/13	$70,603	$134,069	$176,507	$346,778	100 %	100 %	80.5 %
06/30/12	$66,254	$117,016	$159,929	$306,454	100 %	100 %	77.0 %
06/30/11	$62,736	$88,904	$132,953	$274,704	100 %	100 %	92.6 %

Schedule of Active Members Valuation Data

Last 10 Years

General Employees Plan

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Valuation Date	Number	Valuation Payroll	Annual Average Pay	% Increase in Average Pay
06/30/20	153,741	$6,698,754,000	$43,572	2.9%
06/30/19	154,130	$6,523,754,000	$42,326	2.9%
06/30/18	153,059	$6,298,815,000	$41,153	2.2%
06/30/17	152,867	$6,156,985,000	$40,277	3.8%
06/30/16	148,745	$5,773,708,000	$38,816	1.9%
06/30/15	145,650	$5,549,255,000	$38,100	2.0%
06/30/14	143,343	$5,351,920,000	$37,336	(0.5%)
06/30/13	139,763	$5,246,928,000	$37,542	1.7%
06/30/12	139,330	$5,142,592,000	$36,909	1.7%
06/30/11	139,952	$5,079,429,000	$36,294	6.0%

Police and Fire Plan

Valuation Date	Number	Valuation Payroll	Annual Average Pay	% Increase in Average Pay
06/30/20	12,025	$1,069,481,000	$88,938	3.4%
06/30/19	11,763	$1,011,421,000	$85,983	2.8%
06/30/18	11,673	$976,657,000	$83,668	2.1%
06/30/17	11,522	$944,296,000	$81,956	6.0%
06/30/16	11,398	$881,222,000	$77,314	2.1%
06/30/15	11,157	$845,076,000	$75,744	0.4%
06/30/14	10,879	$820,333,000	$75,405	3.6%
06/30/13	10,940	$796,188,000	$72,778	(0.5%)
06/30/12	10,865	$794,417,000	$73,117	2.5%
06/30/11	10,880	$775,806,000	$71,306	6.0%

Correctional Plan

Valuation Date	Number	Valuation Payroll	Annual Average Pay	% Increase in Average Pay
06/30/20	3,855	$217,702,000	$56,473	4.6%
06/30/19	3,965	$214,151,000	$54,010	4.8%
06/30/18	3,981	$205,077,000	$51,514	(1.1%)
06/30/17	3,842	$200,103,000	$52,083	5.6%
06/30/16	3,827	$188,816,000	$49,338	1.4%
06/30/15	3,692	$179,623,000	$48,652	1.9%
06/30/14	3,603	$172,041,000	$47,749	1.2%
06/30/13	3,493	$164,820,000	$47,186	(0.7%)
06/30/12	3,460	$164,340,000	$47,497	1.0%
06/30/11	3,510	$165,077,000	$47,030	7.0%

Schedule of Retirees and Beneficiaries

Last 10 Years

General Employees Plan

Year Ended	Added to Rolls: Number Added	Added to Rolls: Annual Allowances	Removed from Rolls: Number Removed	Removed from Rolls: Annual Allowances	Year-End Total: Number	Year-End Total: Annual Allowances	% Change in Annual Allowances	Average Annual Allowances
06/30/20	6,837	$118,695,452	3,588	$57,858,288	108,492	$1,624,055,431	3.9%	$14,969
06/30/19	6,842	$122,035,019	3,371	$57,475,656	105,243	$1,563,218,267	4.3%	$14,853
06/30/18	6,878	$114,687,040	3,307	$55,454,136	101,772	$1,498,658,904	4.1%	$14,726
06/30/17	7,132	$117,947,000	3,219	$53,791,000	98,201	$1,439,426,000	4.7%	$14,658
06/30/16	6,783	$110,107,000	3,087	$52,933,000	94,288	$1,375,270,000	4.3%	$14,586
06/30/15*	10,537	$241,065,000	3,079	$54,630,000	90,592	$1,318,096,000	16.5%	$14,550
06/30/14	6,700	$104,862,000	2,649	$40,605,000	83,134	$1,131,661,000	6.0%	$13,612
06/30/13	6,166	$92,483,000	2,618	$40,328,000	79,083	$1,067,404,000	5.1%	$13,497
06/30/12	6,145	$87,604,000	2,431	$36,693,000	75,535	$1,015,249,000	5.3%	$13,441
06/30/11	5,717	$81,013,000	2,370	$36,249,000	71,821	$964,338,000	4.9%	$13,427

*MERF merged with the General Employees Plan effective January 1, 2015.

Police and Fire Plan

Year Ended	Added to Rolls: Number Added	Added to Rolls: Annual Allowances	Removed from Rolls: Number Removed	Removed from Rolls: Annual Allowances	Year-End Total: Number	Year-End Total: Annual Allowances	% Change in Annual Allowances	Average Annual Allowances
06/30/20	549	$32,891,144	379	$18,134,352	11,201	$573,083,340	2.6%	$51,164
06/30/19	606	$37,676,147	331	$15,535,284	11,031	$558,326,548	4.1%	$50,614
06/30/18	474	$28,399,145	297	$13,622,460	10,756	$536,185,685	2.8%	$49,850
06/30/17	517	$31,389,000	290	$12,513,000	10,579	$521,409,000	3.8%	$49,287
06/30/16	447	$25,711,000	304	$13,615,000	10,352	$502,533,000	2.5%	$48,545
06/30/15	431	$31,109,000	261	$11,409,000	10,209	$490,437,000	4.2%	$48,040
06/30/14	736	$43,581,000	276	$11,214,000	10,039	$470,737,000	7.4%	$46,891
06/30/13	442	$27,616,000	269	$10,645,000	9,579	$438,370,000	4.0%	$45,764
06/30/12	1,786	$82,541,000	228	$9,640,000	9,406	$421,399,000	20.9%	$44,801
06/30/11	527	$23,608,000	220	$8,333,000	7,848	$348,498,000	4.6%	$44,406

Correctional Plan

Year Ended	Added to Rolls: Number Added	Added to Rolls: Annual Allowances	Removed from Rolls: Number Removed	Removed from Rolls: Annual Allowances	Year-End Total: Number	Year-End Total: Annual Allowances	% Change in Annual Allowances	Average Annual Allowances
06/30/20	150	$1,932,914	25	$281,436	1,443	$18,072,531	10.1 %	$12,524
06/30/19	137	$2,395,199	12	$162,096	1,318	$16,421,053	15.7 %	$12,459
06/30/18	134	$2,471,430	26	$318,480	1,193	$14,187,950	17.9 %	$11,893
06/30/17	142	$2,365,000	24	$329,000	1,085	$12,035,000	20.4 %	$11,092
06/30/16	118	$1,645,000	15	$146,000	967	$9,999,000	17.6 %	$10,340
06/30/15	121	$1,722,000	26	$336,000	864	$8,500,000	19.5 %	$9,838
06/30/14	96	$1,131,000	17	$274,000	769	$7,114,000	13.7 %	$9,251
06/30/13	100	$1,125,000	17	$180,000	690	$6,257,000	17.8 %	$9,068
06/30/12	96	$1,048,000	17	$168,000	607	$5,312,000	19.9 %	$8,751
06/30/11	92	$866,000	5	$68,000	528	$4,432,000	22.0 %	$8,394

Determination of Contribution Sufficiency

As of June 30, 2020 (in thousands)

	General Employees Plan		Police and Fire Plan		Correctional Plan	
	Percent of Payroll	Dollar Amount	Percent of Payroll	Dollar Amount	Percent of Payroll	Dollar Amount
A.Statutory Contributions - M.S. Chapter 353						
1. Employee Contributions	6.50 %	$449,035	11.80 %	$129,149	5.83 %	$13,649
2. Employer Contributions	7.50 %	518,113	17.70 %	193,724	8.75 %	20,485
3. Employer Supplemental	0.30 %	21,000			0.00%	0
4. Minneapolis Police Contributions	0.00%	0	0.41 %	4,490	0.00%	0
5. Minneapolis Fire Contributions	0.00%	0	0.29 %	3,189	0.00%	0
6. State of Minnesota	0.23 %	16,000	1.64 %	18,000	0.00%	0
7. Total	14.53 %	$1,004,148	31.84 %	$348,552	14.58 %	$34,134
B.Actuarially Determined Contributions - M.S. Chapter 356						
1. Normal Cost						
a. Retirement Benefits	5.41 %	$373,713	14.90 %	$163,078	8.34 %	$19,525
b. Disability Benefits	0.19 %	13,138	3.45 %	37,760	2.68 %	6,274
c. Survivor Benefits	0.09 %	6,217	0.73 %	7,990	0.21 %	492
d. Deferred Retirement Benefits	1.48 %	102,247	1.38 %	15,104	2.05 %	4,799
e. Refunds	0.51 %	35,232	0.19 %	2,080	0.52 %	1,217
f. Total	7.68 %	530,547	20.65 %	226,012	13.80 %	32,307
2.Amortization of Supplemental Contribution UAAL	5.27 %	364,044	6.97 %	76,286	0.52 %	1,217
3. Allowance for Administrative Expenses	0.18 %	12,434	0.09 %	985	0.14 %	328
4. Total	13.13 %	$907,025	27.71 %	$303,283	14.46 %	$33,852
C. Contribution Sufficiency/ (Deficiency) (A.8 - B.4)	1.40%	$97	4.13%	$45	0.12%	$282
Projected annual payroll for fiscal year beginning July 1, 2019		$6,907,861		$1,094,484		$234,118
*The required contribution on a market value of assets basis of payroll is	13.27 %		28.05 %		14.64 %	

Determination of Actuarial Value of Assets

As of June 30, 2020 (in thousands)

General Employees Plan

Calculation of unrecognized return	Original Amount	% Not Recognized	Unrecognized Return	
Fair value of assets available for benefits (a)				**$22,631,459**
Year ended June 30, 2020	($724,261)	80%	($579,409)	
Year ended June 30, 2019	(44,547)	60%	(26,728)	
Year ended June 30, 2018	479,963	40%	191,985	
Year ended June 30, 2017	1,266,388	20%	253,278	
Total unrecognized return (b)				**(160,874)**
Actuarial Value of Assets (a-b)				**$22,792,333**

Police and Fire Plan

Calculation of unrecognized return	Original Amount	% Not Recognized	Unrecognized Return	
Fair value of assets available for benefits (a)				**$8,973,460**
Year ended June 30, 2020	($285,391)	80%	($228,313)	
Year ended June 30, 2019	(17,561)	60%	(10,537)	
Year ended June 30, 2018	190,293	40%	76,117	
Year ended June 30, 2017	500,621	20%	100,124	
Total unrecognized return (b)				**(62,609)**
Actuarial Value of Assets (a-b)				**$9,036,069**

Correctional Plan

Calculation of unrecognized return	Original Amount	% Not Recognized	Unrecognized Return	
Fair value of assets available for benefits (a)				**$787,322**
Year ended June 30, 2020	($24,475)	80%	($19,580)	
Year ended June 30, 2019	(671)	60%	(403)	
Year ended June 30, 2018	14,166	40%	5,666	
Year ended June 30, 2017	37,088	20%	7,418	
Total unrecognized return (b)				**(6,899)**
Actuarial Value of Assets (a-b)				**$794,221**

Schedule of Changes in Unfunded Actuarial Accrued Liabilities (UAAL)

For the Fiscal Year Ended June 30, 2020 (in thousands)

	General Employees Plan	Police and Fire Plan	Correctional Plan
A. UAAL at Beginning of Year (7/1/19)	**$5,990,722**	**$1,247,540**	**$28,698**
B. Change Due to Interest Requirements and Current Rate of Funding			
1. Normal Cost and Expenses	530,380	218,051	33,504
2. Contributions	(961,240)	(330,844)	(31,735)
3. Interest on A, B1, and B2	433,147	89,336	2,219
C.Expected UAAL at End of Year (A+B)	**5,993,009**	**1,224,083**	**32,686**
D. Increase (Decrease) Due to Actuarial Losses (Gains)Because of Experience Deviations from Expected*			
1. Age and Service Retirements	21,743	(3,600)	(112)
2. Disability Retirements	(460)	9,327	(2,346)
3. Death-in-Service Benefits	(11,017)	1,071	(832)
4. Withdrawals	(33,041)	1,950	(5,651)
5. Salary Increases	12,596	22,484	(3,290)
6. Investment Income	79,246	26,811	1,953
7. Mortality of Annuitants	(32,177)	(302)	694
8. Other Items	(617)	(1,541)	(890)
E. UAAL at End of Year Before Plan Amendments and Changes in Actuarial Assumptions (C+D)	**6,029,282**	**1,280,283**	**22,212**
F. Change in UAAL Due to Change in Plan Provisions	(65,850)	0	0
G. Change in UAAL Due to Change in Actuarial Assumptions and Methods	(128,849)	(24,785)	(1,977)
H. Change in Unfunded Actuarial Accrued Liability Due to Changes in Miscellaneous Methodology	0	0	0
I. UAAL at End of Year 6/30/2020 (E+F+G+H)	**$5,834,583**	**$1,255,498**	**$20,235**

* Explanatory Notes

1. If members retire earlier than assumed, there is a loss; if later, a gain.
2. If more members take a disability than assumed, there is a loss; if fewer, a gain.
3. If fewer active members die than assumed, there is a loss; if more, a gain.
4. If fewer members terminate employment than assumed, there is a loss; if more, a gain.
5. If there are larger salary increases than assumed, there is a loss; if smaller, a gain.
6. If there is a smaller investment return than assumed, there is a loss; if larger, a gain.
7. If benefit recipients live longer than assumed, there is a loss; if less, a gain.
8. Miscellaneous gains and losses.

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STATISTICAL SECTION

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Introduction

October 17, 2020

The *Statistical Section* provides additional historical perspective, context, and detail in order to promote a more comprehensive understanding of PERA's financial statements, note disclosures, and supplemental information. In addition, multi-year trend financial and operating information provided in this section is intended to facilitate understanding of how the agency's financial position and performance has changed over time.

Financial trend information includes a ten-year *Schedule of Changes in Fiduciary Net Position*. This schedule provides the history of additions and deductions for each fund and allows the reader to see the rate of growth for each addition and deduction type. The *Benefits and Refunds by Type* schedule shows the types of benefit payments and refunds paid out over the last ten years. These two schedules show the changes to the fund balances and the reasons for those changes over the past ten years.

Membership information includes statistics about our active, deferred, and retired members. The section includes a *Summary of Membership* for each fund including the ten-year counts of active and non-active members. The *Schedule of New Retirees and Initial Benefits Pai*d for our defined benefit plans, followed by a *Schedule of Benefit Recipients by Type* give more detailed information about the starting benefit payment and the type of benefit selected. In addition, the schedule includes information about how many annuitants chose a joint and survivor option.

Principal Participating Employers shows the top ten participating employers in each plan compared to the top ten employers from ten years ago. In addition, information is displayed on how to view the full-listing of all participating employers and the contributions submitted to PERA. The final schedule, *Privatized Employers*, lists the privatized employers per Minnesota Statute Chapter 325F.

The information contained in this section was produced by PERA's actuary and from internal data sources.

David Andrews

David Andrews
Accounting Director

Schedule of Changes in Fiduciary Net Position

Last 10 Fiscal Years (in thousands)

General Employees Fund*

	2020	2019	2018	2017
Additions				
Employer Contributions	$509,821	$515,444	$488,819	$477,888
Member Contribution	435,419	424,044	409,423	400,204
State Contributions	16,000	16,000	16,000	6,000
Investment Income	931,041	1,547,224	2,063,582	2,682,901
Other	267	154	56	411
Total Additions to Fiduciary Net Position	1,892,548	2,502,866	2,977,880	3,567,404
Deductions				
Benefits	1,604,842	1,536,071	1,470,450	1,413,448
Refunds	84,947	65,834	42,589	37,234
Administrative Expenses	12,268	13,470	11,943	11,292
Other	0	0	0	0
Total Deductions from Fiduciary Net Position	1,702,057	1,615,375	1,524,982	1,461,974
Change in Fiduciary Net Position	**$190,491**	**$887,491**	**$1,452,898**	**$2,105,430**

* The Minneapolis Employees Retirement Fund merged into the General Employees Retirement Fund on 01/01/2015
The General Fund has been restated to include Minneapolis Employees Retirement Fund for the ten year schedule

Police and Fire Fund

	2020	2019	2018	2017
Additions				
Employer Contributions	$193,819	$174,817	$170,781	$166,329
Member Contribution	123,525	111,762	105,479	101,984
State Contributions	13,500	13,500	9,000	9,000
Investment Income	368,949	609,512	813,966	1,058,942
Other	260	54	58	24
Total Additions to Fiduciary Net Position	700,053	909,645	1,099,284	1,336,279
Deductions				
Benefits	567,040	547,699	528,468	512,379
Refunds	3,181	3,283	1,902	2,119
Administrative Expenses	924	1,018	886	992
Other	0	0	0	0
Total Deductions from Fiduciary Net Position	571,145	552,000	531,256	515,490
Change in Fiduciary Net Position	**$128,908**	**$357,645**	**$568,028**	**$820,789**

Correctional Fund

	2020	2019	2018	2017
Additions				
Employer Contributions	$19,043	$18,676	$17,871	$17,489
Member Contributions	12,692	12,485	11,956	11,666
Investment Income	31,774	50,853	62,962	78,363
Other	0	0	1	0
Total Additions to Fiduciary Net Position	63,509	82,014	92,790	107,518
Deductions				
Benefits	17,569	15,381	13,183	11,033
Refunds	2,709	2,244	1,364	1,478
Administrative Expenses	332	361	308	330
Other	0	0	0	0
Total Deductions from Fiduciary Net Position	20,610	17,986	14,855	12,841
Change in Fiduciary Net Position	**$42,899**	**$64,028**	**$77,935**	**$94,677**

2016	2015	2014	2013	2012	2011
$459,978	$435,265	$413,677	$404,099	$399,660	$362,701
375,291	353,765	334,865	328,359	321,976	311,882
6,000	21,575	24,000	24,000	22,750	22,750
(20,851)	777,621	2,906,811	2,011,862	338,616	2,790,228
431	281	644	8	771	479
820,849	1,588,507	3,679,997	2,768,328	1,083,773	3,488,040
1,359,176	1,301,396	1,244,332	1,189,398	1,141,353	1,094,669
37,209	35,706	38,311	35,922	39,743	38,396
11,110	10,377	10,007	10,028	9,822	9,981
0	0	0	23	0	0
1,407,495	1,347,479	1,292,650	1,235,371	1,190,918	1,143,046
$(586,646)	**$241,028**	**$2,387,347**	**$1,532,957**	**($107,145)**	**$2,344,994**

2016	2015	2014	2013	2012	2011
$156,065	$144,317	$132,632	$125,995	$121,891	$109,604
95,172	88,733	81,213	76,434	76,264	73,702
9,000	9,000	9,000	0	0	0
(8,949)	317,556	1,158,389	806,742	156,926	1,024,981
3	84	18	24	488,521	1
251,291	559,690	1,381,252	1,009,195	843,602	1,208,288
498,608	481,330	452,462	431,726	386,208	342,219
2,391	1,953	1,633	2,020	1,524	2,012
906	803	798	755	855	762
0	0	0	0	0	0
501,905	484,086	454,893	434,501	388,587	344,993
($250,614)	**$75,604**	**$926,359**	**$574,694**	**$455,015**	**$863,295**

2016	2015	2014	2013	2012	2011
$16,490	$15,736	$15,054	$14,498	$14,320	$14,289
11,008	10,472	10,030	9,609	9,581	9,624
209	20,373	69,451	44,378	7,846	50,343
0	0	0	0	0	0
27,707	46,581	94,535	68,485	31,747	74,256
9,381	7,777	6,711	5,757	4,809	4,026
982	1,057	1,105	1,177	1,332	1,338
292	247	236	209	229	229
0	0	1	0	0	0
10,655	9,081	8,053	7,143	6,370	5,593
$17,052	**$37,500**	**$86,482**	**$61,342**	**$25,377**	**$68,663**

Schedule of Changes in Fiduciary Net Position

Last 10 Fiscal Years (in thousands) (continued from previous page)

Volunteer Firefighter Fund

	2020	2019	2018	2017
Additions				
Employer Contributions	$1,051	$1,181	$938	$716
State Contribution	4,580	3,993	3,522	2,659
Investment Income	7,535	7,682	4,681	6,409
Other (mainly initial transfer of assets)	4,802	10,916	8,048	14,206
Total Additions to Fiduciary Net Position	17,968	23,772	17,189	23,990
Deductions				
Benefits	7,057	4,709	4,161	2,700
Administrative Expenses	298	111	70	61
Total Deductions from Fiduciary Net Position	7,355	4,820	4,231	2,761
Change in Fiduciary Net Position	**$10,613**	**$18,952**	**$12,958**	**$21,229**

Defined Contribution Fund

	2020	2019	2018	2017
Additions				
Employer Contributions	$2,160	$2,084	$2,036	$1,822
Member Contributions	2,002	1,957	1,911	1,739
Investment Income	5,227	5,440	6,490	7,274
Other	0	0	0	7
Total Additions to Fiduciary Net Position	9,389	9,481	10,437	10,842
Deductions				
Refunds	3,971	5,959	4,326	5,233
Administrative Expenses	234	214	211	137
Total Deductions from Fiduciary Net Position	4,205	6,173	4,537	5,370
Change in Fiduciary Net Position	**$5,184**	**$3,308**	**$5,900**	**$5,472**

2016	2015	2014	2013	2012	2011
$332	$226	$414	$291	$118	$150
1,811	1,430	900	361	153	41
1,325	880	2,623	1,082	254	242
20,401	4,667	7,953	7,984	3,076	2,450
23,869	7,203	11,890	9,718	3,601	2,883
1,644	1,221	1,096	838	279	119
132	86	71	38	21	8
1,776	1,307	1,167	876	300	127
$22,093	**$5,896**	**$10,723**	**$8,842**	**$3,301**	**$2,756**

2016	2015	2014	2013	2012	2011
$1,965	$1,850	$1,755	$1,734	$1,674	$1,622
1,779	1,698	1,628	1,612	1,547	1,496
999	2,681	8,004	5,625	1,263	6,726
2	0	0	0	0	0
4,745	6,229	11,387	8,971	4,484	9,844
3,755	3,489	2,800	3,399	2,128	2,596
189	186	171	152	144	129
3,944	3,675	2,971	3,551	2,272	2,725
$801	**$2,554**	**$8,416**	**$5,420**	**$2,212**	**$7,119**

Benefit & Refunds by Type

Defined Benefit Plans - Last 10 Fiscal Years (in thousands)

General Employees Fund*

	2020	2019	2018	2017
Benefits by Type				
Retirement	$1,442,689	$1,373,267	$1,307,364	$1,250,427
Survivor	142,659	142,187	141,781	141,449
Disability	19,494	20,617	21,305	21,572
Total	$1,604,842	$1,536,071	$1,470,450	$1,413,448
Refund by Type				
Separation	$59,829	$43,723	$30,981	$27,513
Death	542	812	582	508
Interest/Employer	24,576	21,299	11,026	9,213
Total	$84,947	$65,834	$42,589	$37,234

* The Minneapolis Employees Retirement Fund merged into the General Employees Retirement Fund on 01/01/2015. The General Fund has been restated to include Minneapolis Employees Retirement Fund for the ten year schedule

Police and Fire Fund

	2020	2019	2018	2017
Benefits by Type				
Retirement	$445,843	$432,012	$416,652	$403,053
Survivor	63,210	60,873	59,438	58,568
Disability	57,987	54,814	52,378	50,758
Total	$567,040	$547,699	$528,468	$512,379
Refund by Type				
Separation	$2,390	$2,117	$1,444	$1,599
Death	65	29	0	52
Interest/Employer	726	1,137	458	468
Total	$3,181	$3,283	$1,902	$2,119

Correctional Fund

	2020	2019	2018	2017
Benefits by Type				
Retirement	$14,307	$12,287	$10,357	$8,555
Survivor	712	617	529	437
Disability	2,550	2,477	2,297	2,041
Total	$17,569	$15,381	$13,183	$11,033
Refund by Type				
Separation	$2,034	$1,617	$1,049	$1,129
Death	38	0	35	45
Interest/Employer	637	627	280	304
Total	$2,709	$2,244	$1,364	$1,478

Volunteer Firefighter Fund

	2020	2019	2018	2017
Benefits by Type				
Retirement	$903	$762	$607	$554
Survivor	90	58	49	51
Lump Sum Benefit	6,064	3,889	3,505	2,095
Total	$7,057	$4,709	$4,161	$2,700

2016	2015	2014	2013	2012	2011
$1,195,640	$1,137,897	$1,081,088	$1,027,325	$1,083,809	$1,034,793
140,630	141,178	140,423	138,485	33,342	33,871
22,906	22,321	22,821	23,588	24,202	26,005
$1,359,176	$1,301,396	$1,244,332	$1,189,398	$1,141,353	$1,094,669
$27,601	$26,179	$27,962	$25,885	$27,723	$25,350
505	731	551	727	752	504
9,103	8,796	9,798	9,310	11,268	12,542
$37,209	$35,706	$38,311	$35,922	$39,743	$38,396

2016	2015	2014	2013	2012	2011
$391,952	$379,068	$353,620	$336,220	$327,956	$289,796
58,119	56,523	54,462	52,827	18,268	14,518
48,537	45,739	44,380	42,679	39,984	37,905
$498,608	$481,330	$452,462	$431,726	$386,208	$342,219
$1,540	$1,423	$1,179	$1,243	$1,079	$1,275
0	0	0	31	6	2
851	530	454	746	439	735
$2,391	$1,953	$1,633	$2,020	$1,524	$2,012

2016	2015	2014	2013	2012	2011
$6,954	$5,528	$4,427	$3,518	$2,790	$2,081
372	278	240	180	23	23
2,055	1,971	2,044	2,059	1,996	1,922
$9,381	$7,777	$6,711	$5,757	$4,809	$4,026
$792	$821	$844	$857	$1,060	$997
0	29	0	48	10	0
190	207	261	272	262	341
$982	$1,057	$1,105	$1,177	$1,332	$1,338

2016	2015	2014	2013	2012	2011
$279	$0	$0	$0	$0	$0
23	0	0	0	0	0
1,342	1,221	1,096	838	279	119
$1,644	$1,221	$1,096	$838	$279	$119

Summary of Membership

Defined Benefit Plans — Last 10 Years

General Employees Fund

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
2020	153,741	108,492	64,672	79,069	405,974
2019	154,130	105,243	63,311	126,116	448,800
2018	153,059	101,772	61,066	138,768	454,665
2017	152,867	98,201	52,274	138,335	441,677
2016	148,745	94,288	52,516	132,416	427,965
2015	145,650	90,592	51,605	125,366	413,213
2014	143,434	83,134	48,505	121,018	396,091
2013	139,763	79,083	45,946	119,509	384,301
2012	139,330	75,535	44,354	115,287	374,506
2011	139,952	71,821	45,325	109,630	366,728

Police and Fire Plan

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
2020	12,025	11,201	1,686	894	25,806
2019	11,763	11,031	1,620	1,145	25,559
2018	11,673	10,756	1,580	1,188	25,197
2017	11,522	10,579	1,506	1,134	24,741
2016	11,398	10,352	1,490	1,059	24,299
2015	11,157	10,209	1,560	995	23,921
2014	10,879	10,039	1,481	975	23,374
2013	10,940	9,579	1,388	988	22,895
2012	10,865	9,406	1,303	971	22,545
2011	10,880	7,848	1,335	870	20,933

Correctional Plan

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
2020	3,855	1,443	3,637	2,184	11,119
2019	3,965	1,318	3,374	2,790	11,447
2018	3,981	1,193	3,165	2,811	11,150
2017	3,842	1,085	2,933	2,624	10,484
2016	3,827	967	2,755	2,359	9,908
2015	3,692	864	2,620	2,139	9,315
2014	3,603	769	2,380	1,936	8,688
2013	3,493	690	2,232	1,816	8,231
2012	3,460	607	2,091	1,727	7,885
2011	3,510	528	1,981	1,624	7,643

Volunteer Firefighter Plan*

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
2020	3,773	136	968	0	4,877
2019	3,517	137	840	0	4,494
2018	3,256	86	751	0	4,093
2017	2,753	75	560	0	3,388
2016*	1,639	79	928	0	2,646

*The first monthly benefit division participant joined the Volunteer Firefighter Plan on January 1, 2016

Schedule of New Retirees and Initial Benefit Paid

Defined Benefit Plans – Last 10 Years

General Employees Plans

	Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 +
2020							
Average monthly benefit	$157	$343	$677	$981	$1,312	$1,775	$3,232
Average high five salary	$4,232	$2,910	$3,207	$3,529	$3,893	$4,283	$5,632
Number of retirees	689	950	873	781	809	675	1,204
2019							
Average monthly benefit	$158	$339	$627	$969	$1,301	$1,784	$3,147
Average high five salary	$4,104	$2,813	$3,165	$3,525	$3,752	$4,250	$5,489
Number of retirees	749	1,007	966	885	801	769	1,304
2018							
Average monthly benefit	$164	$331	$599	$921	$1,213	$1,804	$3,018
Average high five salary	$4,145	$2,755	$3,008	$3,435	$3,600	$4,222	$5,304
Number of retirees	691	867	846	880	806	788	1,224
2017							
Average monthly benefit	$154	$333	$614	$866	$1,195	$1,761	$2,956
Average high five salary	$4,170	$2,719	$3,076	$3,283	$3,586	$4,130	$5,190
Number of retirees	630	795	836	841	718	758	1,125
2016							
Average monthly benefit	$142	$317	$576	$864	$1,193	$1,802	$2,877
Average high five salary	$3,772	$2,731	$2,896	$3,189	$3,496	$4,171	$5,080
Number of retirees	619	875	821	776	793	810	1,187
2015							
Average monthly benefit	$139	$309	$571	$866	$1,134	$1,781	$2,771
Average high five salary	$3,714	$2,500	$2,830	$3,236	$3,422	$4,109	$4,911
Number of retirees	579	901	864	808	814	813	1,174
2014							
Average monthly benefit	$139	$308	$588	$808	$1,199	$1,750	$2,809
Average high five salary	$3,716	$2,563	$2,953	$3,027	$3,534	$4,009	$4,963
Number of retirees	628	853	848	791	807	758	1,218
2013							
Average monthly benefit	$145	$303	$546	$823	$1,188	$1,677	$2,737
Average high five salary	$3,499	$2,529	$2,777	$3,074	$3,456	$3,914	$4,895
Number of retirees	581	791	758	726	778	675	1,088
2012							
Average monthly benefit	$133	$290	$535	$795	$1,116	$1,710	$2,608
Average high five salary	$3,545	$2,427	$2,713	$2,992	$3,270	$3,953	$4,712
Number of retirees	645	807	812	657	778	615	1,070
2011							
Average monthly benefit	$123	$273	$507	$758	$1,143	$1,625	$2,550
Average high five salary	$3,348	$2,290	$2,553	$2,845	$3,365	$3,873	$4,686
Number of retirees	563	763	698	626	664	508	1,074

Police and Fire Plan

	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 +
2020							
Average monthly benefit	$483	$1,496	$2,492	$3,565	$4,958	$6,554	$8,529
Average high five salary	$5,349	$5,165	$6,312	$6,920	$7,560	$8,124	$8,930
Number of retirees	20	21	22	40	64	74	55
2019							
Average monthly benefit	$375	$1,419	$2,580	$3,662	$4,802	$6,252	$8,085
Average high five salary	$4,587	$5,526	$6,377	$7,087	$7,448	$7,840	$8,582
Number of retirees	20	23	22	33	79	108	110
2018							
Average monthly benefit	$838	$1,654	$2,418	$3,188	$4,726	$6,239	$7,705
Average high five salary	$4,969	$5,272	$5,798	$6,380	$7,170	$7,857	$8,149
Number of retirees	15	14	32	30	69	84	64
2017							
Average monthly benefit	$583	$1,370	$2,133	$3,512	$4,321	$5,990	$8,096
Average high five salary	$5,387	$4,615	$5,277	$6,523	$6,772	$7,575	$8,426
Number of retirees	18	25	24	34	59	98	74
2016							
Average monthly benefit	$565	$1,363	$2,130	$3,152	$4,403	$5,649	$7,322
Average high five salary	$6,026	$5,244	$5,110	$6,023	$6,821	$7,171	$7,613
Number of retirees	20	17	18	30	59	91	44
2015							
Average monthly benefit	$278	$1,559	$2,202	$3,290	$4,232	$5,791	$7,394
Average high five salary	$5,703	$5,563	$5,631	$6,172	$6,553	$7,299	$7,401
Number of retirees	16	16	27	33	56	81	47
2014							
Average monthly benefit	$375	$1,358	$2,081	$3,070	$3,070	$5,611	$6,952
Average high five salary	$4,290	$4,612	$5,379	$5,815	$5,815	$7,018	$7,233
Number of retirees	17	33	37	63	63	205	135
2013							
Average monthly benefit	$639	$1,322	$1,949	$2,941	$4,299	$5,407	$7,163
Average high five salary	$6,439	$4,978	$4,830	$5,533	$6,274	$6,741	$7,350
Number of retirees	8	18	19	23	47	96	60
2012							
Average monthly benefit	$565	$1,028	$1,980	$3,201	$4,110	$5,244	$6,670
Average high five salary	$5,666	$3,733	$5,307	$5,986	$6,136	$6,517	$6,987
Number of retirees	22	20	21	31	56	95	84
2011							
Average monthly benefit	$406	$1,340	$2,019	$2,837	$4,117	$5,189	$6,590
Average high five salary	$4,976	$5,685	$5,189	$5,288	$6,101	$6,489	$6,885
Number of retirees	11	13	23	22	76	74	109

Schedule of New Retirees and Initial Benefit Paid

Defined Benefit Plans – Last 10 Years

Correctional Plan*

	Years of Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 +
2020							
Average monthly benefit	$351	$654	$1,219	$1,868	$2,454		
Average high five salary	$4,474	$4,147	$4,946	$5,437	$6,383		
Number of retirees	35	18	15	32	32		
2019							
Average monthly benefit	$269	$595	$990	$1,917			
Average high five salary	$3,947	$3,760	$4,447	$5,497			
Number of retirees	26	15	20	62			
2018							
Average monthly benefit	$287	$644	$1,112	$1,963			
Average high five salary	$4,176	$3,799	$4,860	$5,823			
Number of retirees	15	12	27	61			
2017							
Average monthly benefit	$340	$703	$1,088	$1,749			
Average high five salary	$4,463	$4,099	$4,601	$5,524			
Number of retirees	15	17	29	58			
2016							
Average monthly benefit	$201	$552	$1,107	$1,513			
Average high five salary	$3,930	$3,655	$4,713	$4,928			
Number of retirees	13	21	20	48			
2015							
Average monthly benefit	$501	$758	$1,106	$1,510			
Average high five salary	$4,436	$3,924	$4,364	$5,218			
Number of retirees	15	21	30	37			
2014							
Average monthly benefit	$668	$706	$1,200				
Average high five salary	$3,938	$3,960	$4,797				
Number of retirees	17	23	43				
2013							
Average monthly benefit	$254	$686	$1,193				
Average high five salary	$3,296	$3,904	$4,891				
Number of retirees	17	16	54				
2012							
Average monthly benefit	$295	$683	$1,079				
Average high five salary	$2,930	$3,629	$4,697				
Number of retirees	12	15	52				
2011							
Average monthly benefit	$369	$580	$976				
Average high five salary	$3,436	$3,548	$4,572				
Number of retirees	18	12	40				

*The Correctional Plan was established July 1, 1999.

Volunteer Firefighter Plan**

	Years Credited Service						
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 +
2020							
Average monthly benefit			$391	$693	$1,058		
Average high five salary							
Number of retirees			3	4	1		
2019							
Average monthly benefit			$323		$975		
Average high five salary**							
Number of retirees			2		3		
2018							
Average monthly benefit			$447		$156		$1,260
Average high five salary**							
Number of retirees			1		10		1
2017							
Average monthly benefit					$722		
Average high five salary**							
Number of retirees					3		
2016*							
Average monthly benefit		$166	$357	$561	$771	$975	
Average high five salary**							
Number of retirees		1	10	13	48	3	

** The first monthly benefit division employer joined the Volunteer Firefighter Plan on January 1, 2016.
*** The monthly benefit is based on years of service, not salary.

Schedule of Benefit Recipients by Type

As of June 30, 2020

General Employees Plans

Amount of Monthly Benefit	Number of Benefit Recipients	Type of Benefit				Option Selected					
		A	B	C	D	1	2	3	4	5	6
$1 - $250	22,723	20,888	415	1,246	174	14,457	6,369	353	909	460	175
251 - 500	17,232	15,623	264	1,120	225	10,631	4,317	365	1,160	602	157
501 - 750	12,640	11,343	199	904	194	7,487	3,124	329	1003	542	155
751 - 1000	9,669	8,705	147	645	172	5,527	2,343	322	920	461	96
1001 - 1250	7,623	6,821	106	559	137	4,060	1,958	294	776	463	72
1251 - 1500	6,155	5,496	90	445	124	3,096	1,661	314	654	371	59
1501 - 1750	5,057	4,503	86	367	101	2,381	1,338	321	622	331	64
1751 - 2000	4,362	3,953	54	284	71	2,025	1,147	283	570	289	48
2001 - 2250	3,721	3,382	45	243	51	1,580	1,028	243	537	281	52
2251 - 2500	3,187	2,878	42	233	34	1,304	876	201	511	245	50
2501 - 2750	2,789	2,529	39	185	36	1,061	835	190	436	206	61
2751 - 3000	2,336	2,143	23	149	21	906	680	164	340	188	58
3001 - 3250	1,936	1,778	20	126	12	743	588	140	265	150	50
3251 - 3500	1,630	1,475	32	110	13	619	455	112	248	128	68
3501 - 3750	1,321	1,202	15	96	8	472	422	89	210	90	38
3751 - 4000	1,056	959	17	76	4	376	309	73	177	81	40
4001 - 4250	918	823	12	80	3	298	271	67	180	62	40
4251 - 4500	709	650	6	53	0	242	228	40	125	48	26
4501 - 4750	643	580	5	56	2	201	209	43	104	57	29
4751 - 5000	486	435	7	42	2	166	147	42	74	29	28
5001 - 5250	388	346	4	37	1	126	122	37	58	30	15
5251 - 5500	376	328	3	45	0	117	127	22	69	31	10
5501 - 5750	285	251	2	30	2	101	85	28	40	18	12
5751 - 6000	226	205	1	20	0	79	61	15	48	16	8
6001 - 6250	188	172	0	16	0	63	54	13	38	15	5
6251 - 6500	145	130	1	14	0	41	42	11	29	13	9
6501 - 6750	118	104	1	13	0	24	43	5	32	8	6
6751 - 7000	92	80	2	10	0	33	25	11	19	2	2
Over 7000	481	416	3	62	0	130	134	51	107	38	21
Totals	108,492	98,198	1,641	7,266	1,387	58,346	28,998	4,178	10,261	5,255	1,454

Type of Benefit	Option Selected
A Retirement	**1** Single Life
B Survivor of Active Member	**2** 100% Joint & Survivor
C Survivor of Benefit Recipient	**3** 75% Joint & Survivor
D Disability	**4** 50% Joint & Survivor
	5 25% Joint & Survivor
	6 Other (Death, Term-certain, Children's Benefits, etc.)

Police and Fire Plan

Amount of Monthly Benefit	Number of Benefit Recipients	Type of Benefit					Option Selected					
		A	B	C	D	E	1	2	3	4	5	6
$1 - $250	162	134	9	17	1	1	58	76	6	9	6	7
251 - 500	158	132	4	21	1	0	57	66	0	20	9	6
501 - 750	140	110	8	19	1	2	48	58	8	12	6	8
751 - 1000	152	114	6	30	2	0	53	39	7	25	20	8
1001 - 1250	168	103	6	56	2	1	48	51	3	28	23	15
1251 - 1500	165	98	11	48	5	3	46	45	14	17	23	20
1501 - 1750	221	112	16	85	6	2	52	45	18	30	11	65
1751 - 2000	256	125	15	96	10	10	60	60	8	50	15	63
2001 - 2250	266	121	26	89	22	8	69	56	10	59	9	63
2251 - 2500	309	153	29	73	34	20	74	93	16	45	16	65
2501 - 2750	375	170	33	113	22	37	92	86	26	64	15	92
2751 - 3000	658	185	107	291	15	60	92	110	27	70	14	345
3001 - 3250	436	255	26	73	14	68	116	123	35	78	12	72
3251 - 3500	437	278	12	48	4	95	128	129	46	60	23	51
3501 - 3750	498	310	18	53	9	108	158	163	40	64	21	52
3751 - 4000	522	332	20	55	14	101	149	160	46	75	35	57
4001 - 4250	542	374	12	40	15	101	160	165	54	78	35	50
4251 - 4500	502	376	12	25	15	74	127	133	65	100	26	51
4501 - 4750	565	450	8	36	14	57	153	150	70	81	32	79
4751 - 5000	530	443	6	30	11	40	124	156	61	93	33	63
5001 - 5250	544	477	10	23	8	26	142	120	69	106	38	69
5251 - 5500	546	446	5	27	42	26	119	115	81	99	32	100
5501 - 5750	812	764	3	8	6	31	127	89	64	119	31	382
5751 - 6000	312	274	5	11	10	12	82	90	44	61	25	10
6001 - 6250	308	282	3	5	3	15	84	70	55	63	34	2
6251 - 6500	268	245	3	4	6	10	63	78	43	63	19	2
6501 - 6750	234	219	2	4	2	7	61	74	32	49	16	2
6751 - 7000	183	170	0	6	1	6	53	56	22	42	10	0
Over 7000	932	894	2	14	9	13	258	249	141	203	79	2
Totals	11,201	8,146	417	1,400	304	934	2,853	2,905	1,111	1,863	668	1,801

Type of Benefit	Option Selected
A Retirement	**1** Single Life
B Survivor of Active Member	**2** 100% Joint & Survivor
C Survivor of Benefit Recipient	**3** 75% Joint & Survivor
D Non-Duty Disability	**4** 50% Joint & Survivor
E Line-of-Duty Disability	**5** 25% Joint & Survivor
	6 Other

Schedule of Benefit Recipients by Type

As of June 30, 2020 (continued from previous page)

Correctional Plan

Amount of Monthly Benefit	Number of Benefit Recipients	Type of Benefit					Option Selected					
		A	B	C	D	E	1	2	3	4	5	6
$1 - $250	202	185	6	8	3	0	116	60	6	10	10	0
251 - 500	164	155	1	6	2	0	91	48	2	16	7	0
501 - 750	176	145	8	11	12	0	82	62	12	14	5	1
751 - 1000	193	167	3	8	15	0	85	69	10	17	10	2
1001 - 1250	160	144	2	2	9	3	67	62	11	11	9	0
1251 - 1500	153	131	3	2	13	4	76	45	5	18	7	2
1501 - 1750	118	99	0	5	4	10	50	43	8	7	10	0
1751 - 2000	95	86	3	0	2	4	44	30	5	8	6	2
2001 - 2250	72	55	1	1	2	13	33	24	1	7	6	1
2251 - 2500	42	27	0	0	1	14	20	14	1	6	1	0
2501 - 2750	33	15	0	0	0	18	18	12	0	1	2	0
2751 - 3000	22	17	1	0	0	4	11	5	0	3	2	1
3001 - 3250	7	5	0	0	0	2	6	1	0	0	0	0
3251 - 3500	4	3	1	0	0	0	2	0	0	0	1	1
3501 - 3750	1	1	0	0	0	1	1	0	1	0	0	0
3751 - 4000	1	1	0	0	0	0	1	0	0	0	0	0
Totals	1,443	1,236	29	43	63	73	703	475	62	118	76	10

Type of Benefit	Option Selected
A Retirement	**1** Single Life
B Survivor of Active Member	**2** 100% Joint & Survivor
C Survivor of Benefit Recipient	**3** 75% Joint & Survivor
D Non-Duty Disability	**4** 50% Joint & Survivor
E Line-of-Duty Disability	**5** 25% Joint & Survivor
	6 Other

Volunteer Firefighter Plan

Amount of Monthly Benefit	Number of Benefit Recipients	Type of Benefit			Option Selected		
		A	B	C	1	2	3
$1 - $250	26	18	8	0	18	2	6
251 - 500	25	23	2	0	9	9	7
501 - 750	28	22	6	0	10	13	5
751 - 1000	54	53	1	0	9	42	3
Over 1000	3	3	0	0	0	2	1
Totals	136	119	17	0	46	68	22

Type of Benefit	Option Selected
A Retirement	**1** Single Life
B Survivor of Active Member	**2** 75% Joint & Survivor
C Survivor of Benefit Recipient	**3** 50% Joint & Survivor

Principal Participating Employers

Defined Benefit Plans – Top 10 Listing

General Employees Fund*

FY 2020 Employer Name	Active Members	% of Total Active Members	FY 2011 Employer Name	Active Members	% of Total Active Members
HENNEPIN COUNTY	7,845	5.01%	HENNEPIN COUNTY	6,809	4.78%
HENNEPIN HEALTHCARE SYSTEM	5,551	3.54%	MINNEAPOLIS SCHOOL DISTRICT	4,646	3.26%
MINNEAPOLIS SPECIAL ISD-1	4,887	3.12%	HENNEPIN HEALTHCARE SYSTEM	4,116	2.89%
CITY OF MINNEAPOLIS	3,776	2.41%	RAMSEY COUNTY	3,416	2.40%
RAMSEY COUNTY	3,541	2.26%	CITY OF MINNEAPOLIS	3,171	2.22%
ANOKA-HENNEPIN ISD-11	3,101	1.98%	ANOKA-HENNEPIN SCHOOL DIST.	2,626	1.84%
ST PAUL ISD-625	2,969	1.90%	ST PAUL SCHOOL DISTRICT	2,558	1.79%
CITY OF ST PAUL	2,392	1.53%	CITY OF ST PAUL	2,177	1.53%
ROSEMOUNT ISD- 196	1,969	1.26%	OSSEO SCHOOL DISTRICT	1,835	1.29%
ANOKA COUNTY	1,773	1.13%	ROSEMOUNT SCHOOL DISTRICT	1,812	1.27%

Police and Fire Plan*

FY 2020 Employer Name	Active Members	% of Total Active Members	FY 2011 Employer Name	Active Members	% of Total Active Members
CITY OF MINNEAPOLIS	1,336	10.76%	CITY OF MINNEAPOLIS	1,277	11.43%
CITY OF ST PAUL	1,086	8.74%	CITY OF ST PAUL	998	8.93%
HENNEPIN COUNTY	323	2.60%	HENNEPIN COUNTY	326	2.92%
CITY OF DULUTH	288	2.32%	CITY OF DULUTH	271	2.43%
CITY OF ROCHESTER	247	1.99%	CITY OF ROCHESTER	230	2.06%
RAMSEY COUNTY	218	1.76%	RAMSEY COUNTY	224	2.01%
HENNEPIN HEALTHCARE SYSTEM	181	1.46%	CITY OF ST CLOUD	174	1.56%
METROPOLITAN COUNCIL	177	1.43%	HENNEPIN HEALTHCARE SYSTEM	142	1.27%
CITY OF ST CLOUD	174	1.40%	WRIGHT COUNTY	139	1.24%
WRIGHT COUNTY	153	1.23%	METROPOLITAN AIRPORTS COMM.	132	1.18%

*A complete listing or participating employers can be found at:https://mnpera.org/employers/financial-resource-center/

Continued

Principal Participating Employers

Defined Benefit Plans – Top 10 Listing (continued from previous page)

Correctional Plan*

FY2020

Employer	Active Members	% of Total Active Members
HENNEPIN COUNTY	518	13.33%
RAMSEY COUNTY	432	11.12%
ANOKA COUNTY	208	5.35%
SHERBURNE COUNTY	145	3.73%
DAKOTA COUNTY	124	3.19%
OLMSTED COUNTY	100	2.57%
CLAY COUNTY	99	2.55%
STEARNS COUNTY	95	2.45%
ARROWHEAD REGIONAL CORR.	87	2.24%
PRAIRIE LAKES DETENTION CENT.	86	2.21%

FY2011

Employer	Active Members	% of Total Active Members
HENNEPIN COUNTY	499	14.04%
RAMSEY COUNTY	426	11.99%
ANOKA COUNTY	221	6.22%
SHERBURNE COUNTY	114	3.21%
OLMSTED COUNTY	108	3.04%
DAKOTA COUNTY	97	2.73%
STEARNS COUNTY	85	2.39%
WASHINGTON COUNTY	82	2.31%
PRAIRIE LAKES DET. CENTER	78	2.19%
ARROWHEAD REGIONAL CORR.	76	2.14%

Volunteer Firefighter Plan**

FY2020

Employer	Active Members	% of Total Active Members
CITY OF MAYER	74	1.55%
CITY OF COTTAGE GROVE	61	1.28%
SPRING LAKE PARK BLAINE MOUNDS VIEW FIRE	60	1.26%
CITY OF VADNAIS HEIGHTS VOL FIRE DEPT	53	1.11%
CITY OF OAK GROVE	52	1.09%
CITY OF CHATFIELD	50	1.05%
CITY OF VICTORIA	50	1.05%
ISANTI AREA JOINT FIRE DISTRICT	44	0.92%
CITY OF WHITE BEAR LAKE	42	0.88%
CITY OF WILLMAR	42	0.88%

FY2011

Employer	Active Members	% of Total Active Members
CITY OF OTTERTAIL	33	8.94%
CITY OF GRAND MARIAS	30	8.13%
CITY OF TWIN VALLEY	28	7.59%
CITY OF SCANDIA	28	7.59%
CITY OF ALDEN	25	6.78%
ALBORN TOWNSHIP	23	6.23%
CITY OF EMMONS	21	5.69%
WARBA-FEELEY-SAGO	20	5.42%
BIWABIK TOWNSHIP	19	5.15%
LUTSEN TOWNSHIP	19	5.15%

*A complete listing or participating employers can be found at: :https://mnpera.org/employers/financial-resource-center/
**A complete listing or participating employers can be found at:https://mnpera.org/plan-information/statewide-volunteer-firefighter-retirement-plan/departments-participating-in-the-statewide-plan/

Privatized Employers

Below is a list of privatized employers per *Minnesota Statute* Chapter 325F.

ALLINA RICE COUNTY DISTRICT 1 HOSPITAL
BENEDICTINE LIVING COMMUNITY OF ST PETER
CANNON FALLS MED CENTER - MAYO HEALTH
CEDARVIEW CARE CENTER
CENTRACARE HEALTH - PAYNESVILLE
CENTRACARE HEALTH SYSTEM - SAUK CENTRE
CHRIS JENSEN NURSING HOME LLC
CITY OF GLENCOE REGIONAL HEALTH CENTER
CITY OF GRANITE FALLS HOSPITAL AND MANOR
CITY OF LAKEFIELD COLONIAL NURSING HOME
CITY OF WILLMAR RICE MEMORIAL HOSPITAL
CORNERSTONE NURSING & REHAB CENTER
ESSENTIA BRIDGES MEDICAL CENTER
ESSENTIA HEALTH VIRGINIA LLC
FAIR OAKS LODGE
HARMONY RIVER LIVING CENTER
HUTCHINSON AREA HEALTH CARE
LAKE COUNTY SUNRISE HOME
LAKELAND MEDICAL CENTER
LAKESIDE HEALTH CARE CENTER
OAK TERRACE HEALTH CARE CENTER
PENNINGTON COUNTY OAKLAND PARK NURSING
REDWOOD AREA HOSPITAL
RENVILLE COUNTY HOSPITAL
RENVILLE HEALTH SERVICES
RIDGEVIEW MEDICAL CENTER
SANFORD HEALTH WHEATON MEDICAL CENTER
SANFORD HOSPITAL LUVERNE
SANFORD REGIONAL HOSPITAL WORTHINGTON
SIBLEY MEDICAL CENTER
ST PAUL ARENA COMPANY
SWIFT COUNTY BENSON HOSPITAL
TRAVERSE CARE CENTER
WEINER HOSPITAL, CITY OF MARSHALL
WILLMAR MEDICAL SERVICES LLP
WWWRRR

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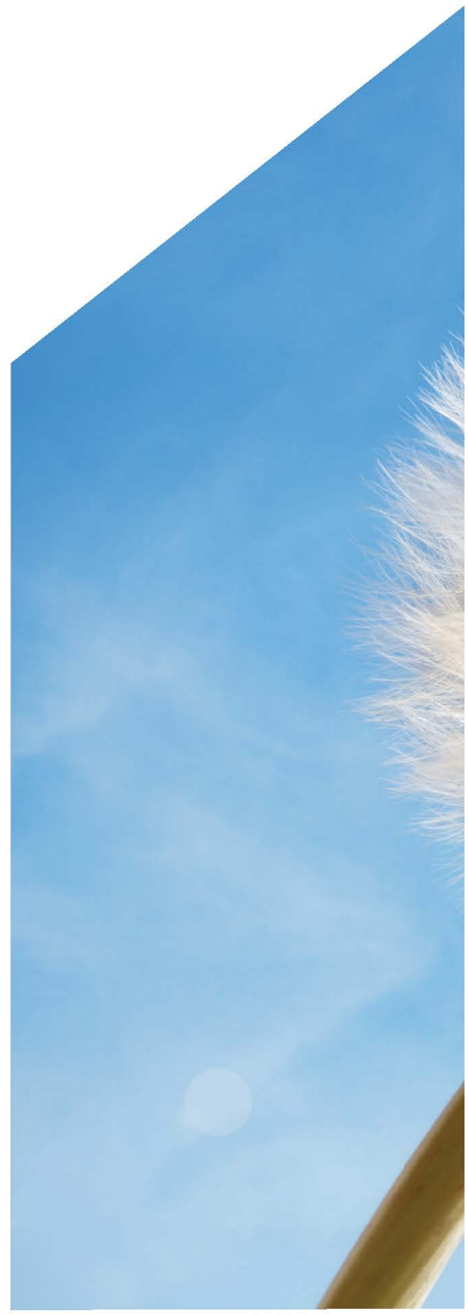

PUBLIC EMPLOYEES
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