Comprehensive Annual Financial Report

For Fiscal Year Ended
June 30, 2017

Restoring the Past.
Preserving Our Traditions.

Public Employees Retirement Association
Pension Trust Funds of the State of Minnesota

About the Cover

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.

Restoring the people's house

Our congratulations to all involved in the Capitol restoration project. The State Capitol reopened in January 2017 after a four-year, $310 million make over, with a grand opening celebration in August. As the first comprehensive preservation of the Capitol since its original construction in 1905, the completion of the project will ensure the Capitol will serve the people of Minnesota for another 100 years.

Before the latest initiative, there were more than 30 years of pre-designs and studies on restoring the Capitol. In 2012, the Minnesota State Capitol Preservation Commission adopted a plan to completely restore the Capitol starting in 2013.

Three principles that governed the restoration project: architectural integrity, building functionality, and life safety and security. These principles framed all the decisions made throughout the renovation process.

There are many similarities between the Capitol restoration project and the administration of the state's largest public pension plan, Public Employees Retirement Association (PERA). Just as the Capitol belongs to the people of Minnesota, PERA's retirement plans belong to our members. Just as the Restoration Commission framed its decisions by the guiding principles, PERA's Board of Trustees have a fiduciary duty to ensure the retirement plans PERA administers remain sustainable for members. PERA's mission is to also provide services that our members' value.

PERA has a long history of serving members with sustainable retirement plans. The Board of Trustees and staff closely monitor the funding levels of the retirement plans and recommend changes when necessary to ensure the long-term viability of the plans.

Our members and stakeholders have our promise and commitment to fulfill our mission. As we have successfully demonstrated since PERA's inception, we will continue to work to make your retirement plan sustainable and offer services you value and need.

Public Employees Retirement Association

Pension Trust Funds of the State of Minnesota

Comprehensive Annual Financial Report

For the Fiscal Year Ended June 30, 2017

Executive Director

Doug Anderson

Prepared by PERA Finance, Executive, and Communication and Education Divisions.

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

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Introductory Section

PERA 2017 Comprehensive Annual Financial Report

Sustainable

Administering your secure retirement

Speaking at the ribbon-cutting ceremony during the Capitol renovation celebration in August 2017, Gov. Mark Dayton expressed hope that Minnesotans would continue to see the Capitol building as their own in the years to come.

"The most beautiful Capitol in the United States, the one that most closely approximates the U.S. Capitol, stands on this hill and says again, to the people of Minnesota: 'This is your government. This belongs to you,'" the Governor said.

Photo courtesy MN Dept. of Admin. Cathy Klima photographer

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Achievement Award

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, 2016

Executive Director/CEO

The Government Finance Officers Association (GFOA) recognizes public retirement systems that meet its rigorous reporting standards with its annual Certificate of Achievement for Excellence in Financial Reporting. It is the highest form of recognition for accounting and financial reporting in the public pension sector. PERA received this award for the 2016 Comprehensive Annual Financial Report.

President's Report

Kathryn A. Green
Board President

"We believe our efforts over the past year have been consistent with PERA's mission to administer and promote sustainable retirement plans and provide services that our members value."

December 15, 2017

Dear Members, Annuitants, Beneficiaries and Governmental Employers:

The Public Employees Retirement Association (PERA) June 30, 2017 Comprehensive Annual Financial Report is respectfully submitted. The report discloses financial, investment, actuarial, statistical and other related information about PERA and the funds it administers. Responsibility for the accuracy and completeness of the report rests with PERA.

PERA's net assets increased significantly during fiscal year 2017 as a result of the excellent investment returns in the State Board of Investment Combined Funds. The Combined Funds earned 15.1 percent. PERA's net assets at fair market value are $28.7 billion as of June 30, 2017, a net increase of $3.0 billion from the prior year. The Combined Funds have averaged 6.2 percent over the past 10 years, 7.2 percent over the past 20 years, and 8.7 percent over the past 30 years. The funds have exceeded the composite market return benchmark by 0.2 percent in each of those measurement periods. The lower return in the past 10 years was significantly impacted by negative asset returns during the great recession.

PERA's liabilities are a measure of the present value of future benefit payment obligations for all current members. The liabilities are measured differently under Governmental Accounting Standards Board (GASB) Statements No. 67 & No. 68 than they are for funding purposes. For GASB purposes, PERA determines the assumed long term investment rate of return used to discount most future benefit payments. For funding purposes, the rate is set in State Statutes. PERA changed the GASB assumed rate to 7.5 percent last year and has retained that assumption for the results in this report. The rate for funding purposes was proposed to change to 7.5 percent last year in the pension omnibus bill. Because the proposed change was ultimately included in a bill that was vetoed, the funding assumption remains at 8 percent.

An important distinction between GASB valuation methodology and funding valuation methodology is when the long-term investment return assumption is applied. Even if the GASB and funding long-term assumed rate of return assumption was the same, the application of that assumption may differ. The methodology difference is complex and can lead to considerable liability fluctuations in results from year to year. In short, all future benefit payments may be discounted at the assumed long term rate for funding purposes. However, for GASB purposes, that rate may only be used to the extent current member benefits are presumed to be funded by current assets, assumed returns on those assets, and future current member contributions.

Because liabilities are not independently valued from assets under GASB, the effect of an investment gain or loss can be multiplied. This explains why the year to year change in the GASB determined net pension liability (i.e. the unfunded liability) or funding ratio (the assets divided by the liability) can be more dramatic than the changes to those metrics for funding purposes. For PERA, the impact of the GASB volatility is that almost all of the significant liability increase that occurred in fiscal year 2016 due to asset losses was nearly completely offset in fiscal year 2017 from comparable asset gains.

The implementation of GASB Statements No. 67 & No. 68 is still relatively fresh with only a few years of results available. With fiscal year 2017 results now available, a better perspective of year to year volatility can be gained than what was available in fiscal year 2016. The results should also provide caution to those that make comparisons between plans or attempt to define a trend from limited data.

As trustees of the association it is our fiduciary duty to ensure the protection and furtherance of the interests of our members, annuitants, and beneficiaries. We recognize that it is important to understand all of the results that are reported under both statutory requirements for funding purposes and GASB No. 67 & No. 68 reporting requirements. Only with this understanding can we ensure that results are both responsibly reported and reliably used to make decisions.

We believe our efforts over the past year have been consistent with PERA's mission to administer and promote sustainable retirement plans and provide services that our members value. We have a long history proving that our plans can be sustained and will continuously monitor the direction of the funds and recommend changes when necessary to make sure they are sustained in the future.

Kathryn A. Green

Kathryn A. Green
President
PERA Board of Trustees

"We have a long history proving that our plans can be sustained and will continuously monitor the direction of the funds and recommend changes when necessary to make sure they are sustained in the future."

Doug Anderson
Executive Director

Michael Hagerty
Chief Financial Officer

December 15, 2017

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

Dear Board Members:

We are pleased to present this Comprehensive Annual Financial Report (CAFR) of the Public Employees Retirement Association (PERA) for the fiscal year ended June 30, 2017—our 86th year of operation. The information contained in this report is accurate in all material respects and is intended to present fairly the financial status and results of operations of the Association.

Responsibility for the contents of this report, including the financial statements, rests solely with the management of the Association. This transmittal letter is designed to complement Management's Discussion and Analysis (MD&A) and should be read in conjunction with it.

Plan Overview

PERA was established in 1931 by the Minnesota Legislature. PERA administers three cost-sharing multiple-employer plans, one agent multiple-employer plan, and one defined contribution plan. PERA also serves in an administrative capacity for entities that establish a postemployment benefit fund or a long-term equity investment account with the State Board of Investment (effective in Fiscal Year 2018). For financial reporting purposes, PERA is considered a pension trust fund of the State of Minnesota. The State reports PERA's assets in the State's annual report as pension trust fund assets.

PERA's three cost-sharing plans are funded on an actuarial reserve basis, with money being set aside for benefits while benefits are being earned and before they are paid. The three cost-sharing plans are the General Employees Retirement Plan (General Employees Fund), the Public Employees Police & Fire Plan (Police and Fire Fund), and the Local Government Correctional Service Retirement Plan (Correctional Fund). As of June 30, 2017, these three plans cover 168,231 currently active members and 109,865 members in payment status. An additional 198,806 members that are neither currently active in PERA covered employment nor drawing a benefit are eligible for either a refund or a deferred benefit. These three plans cover employees of over 2,000 separate local governmental entities including cities, counties, townships, and school districts located throughout the State.

The agent multiple-employer plan is the Statewide Volunteer Firefighter Retirement Plan (the SVF Plan). On January 1, 2017, the SVF plan included 3,388 members from 142 different participating fire departments.

The PERA Defined Contribution Plan covers primarily current and elected officials and consists of 7,882 participants.

PERA provides many services to its members including, but not limited to, individual benefit determinations, personal benefit statements, access to pre-retirement 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 several educational videos and specialized publications with information on specific topics of interest to members via our website. Members also have access to our call center staff which can access information and provide immediate responses for members and other stakeholders.

Accounting Systems and Reports

Financial statements are prepared in conformity with accounting principles generally accepted in the United States of America and reporting guidelines set forth by the Governmental Accounting Standards Board (GASB). PERA's CAFR also complies with Minnesota Statutes, Section 356.20. Transactions are reported on the accrual basis of accounting. Contributions from employers and members are recognized as revenue when earned and measurable. Expenses are recorded when corresponding liabilities are incurred, regardless of when payment is made.

PERA's management team is responsible for establishing and maintaining a system of internal controls. Internal controls are designed to provide reasonable, but not absolute, assurance regarding the safeguarding of assets against loss or unauthorized disposition and the reliability of the financial records from which the financial reports are prepared. The concept of reasonable assurance recognizes that: (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the evaluation of costs and benefits requires estimates and judgment by management. Our independent auditors have audited the accompanying financial statements and reviewed our internal control structure. They reported no material weaknesses in our internal controls. Management believes that an adequate system of internal control is in place and that the accompanying statements, schedules and tables are fairly presented.

Investments

In accordance with Minnesota Statutes, Section 353.06, PERA's financial assets are invested by 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 is comprised of the state's elected officers: Governor Mark Dayton; State Auditor Rebecca Otto; Secretary of State Steve Simon; and State Attorney General Lori Swanson.

SBI appoints a 17-member Investment Advisory Council (IAC) to advise SBI on asset allocation and other policy matters relating to investments. The IAC also advises SBI on methods to improve the rate of return while assuring adequate security of the assets under management. PERA's executive director is a standing member of the IAC. All proposed investment policies are reviewed and discussed in detail by the full IAC before they are presented to SBI for action.

SBI also employs investment consultants to monitor and evaluate investment management firms' performance and to evaluate or suggest various alternatives for asset allocation and other investment policy matters.

Combined Funds

Pension assets of the Association are managed externally by private money managers retained under contract with the SBI. These assets are pooled with the assets of other active members and benefit recipients of statewide retirement funds into the Combined Funds. The greatest share of these assets, approximately 60 percent, is invested in domestic and international common stocks in order to maximize the long-term rate of return. Including international stocks in the asset mix allows the SBI to diversify its holdings across world markets and offers the opportunity to enhance returns and reduce the risk/volatility of the total portfolio. For the year ended June 30, 2017, the Combined Funds produced a 15.1 percent rate of return.

SBI has one overriding responsibility in the management of these funds: to ensure that sufficient funds are available to finance promised retirement benefits. Within this context, SBI has established a

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long-term investment objective to outperform a composite market index weighted to reflect the long-term asset allocation policy. Performance is measured net of all fees and costs to assure SBI's focus is on true net return. The Combined Fund's 10-year annualized rate of return at June 30, 2017 was 6.2 percent, and its 20-year annualized rate of return was 7.2 percent. In both instances, the SBI outperformed the composite index by 0.2 percent.

Current Funding Ratios

An important measure of the health of a retirement system is the level of funding. A funding ratio is most commonly defined as an asset value divided by the actuarial accrued liability. At the end of fiscal year 2017, the ratio of assets to liabilities (using the actuarial value of assets) of the General Employees Fund was 77.8 percent. For the Police and Fire Fund and the Correctional Fund, the ratios were 85.2 percent and 94.5 percent, respectively. The actuarial value of assets reflects smoothing of the previous five years of asset gains and losses. When measured on a market value of asset basis, the respective funding ratios were slightly higher at 78.5 percent, 86.1 percent, and 95.7 percent.

All of the above ratios were determined using the 8 percent long-term investment return assumption defined by statute for funding purposes. PERA's historical funding ratios on an actuarial value of assets basis are shown in the Schedule of Funding Progress in the Actuarial Section of the report.

The determination of liabilities is different under GASB No. 67 and No. 68 than for funding purposes (although this may not always be the case). The Total Pension Liability (TPL) determined under the accounting standards for PERA's three cost-sharing plans differs from the Actuarial Accrued Liability (AAL) determined under funding standards due to (1) the use of a different long-term investment return assumption, and (2) a different methodology that defines when the long-term investment return assumption is used to discount future benefit payments.

The first difference, the long-term investment return assumption, is 7.5 percent for GASB purposes and 8 percent for funding purposes. The lower assumed return for GASB purposes will result in a more conservative (higher) liability estimate.

The second difference reflects the GASB methodology to only discount future benefit payments using the long-term investment return assumption during the period in which the benefits for current members are assumed to be funded by current assets, future contributions for current members, and assumed earnings on those assets. GASB does not allow for consideration of future contributions for future members. If benefit payments for current members are assumed to occur beyond the asset depletion date, they are discounted at a much lower rate reflecting current general obligation bond rates. The use of a lower discount rate will increase the liability estimate.

Under the GASB methodology, the ratio of market value of assets to the Total Pension Liability as of June 30, 2017 is 75.9 percent for the General Plan, 85.4 percent for the Police & Fire Plan, and 67.9 percent for the Correctional Plan. These compare to the market value of asset funding ratios for funding purposes noted above of 78.5 percent, 86.1 percent, and 95.7 percent.

Most notable amongst the differences is the Correctional Plan which is 95.7 percent funded on a funding basis, but only 67.9 percent on a GASB basis. This is primarily due to the juxtaposition of valuing a higher level of benefits based on funding assumptions even though those benefits may not exist under GASB assumptions. Specifically, the 2.5 percent postretirement benefit adjustment is valued since it is based on funding assumptions and those assumptions lead to the plan being assumed to exceed 90 percent funded (the level at which the higher postretirement increase becomes effective). In this instance, the additional benefits are assumed to be given as if the plan will always exceed 90 percent funding, but the GASB methodology results in those same future benefits being presumed to be unfunded and thus discounted at a much lower rate.

Because liabilities are not independently valued from assets under GASB, the effect of an investment gain or loss can be amplified. This explains why the year to year change in the GASB-determined net pension liability and funding ratios (Schedule of Changes in Net Pension Liability and Related Ratios in the Financial Section) can be more dramatic than the changes to those metrics for funding purposes (Schedule of Funding Progress in the Actuarial

Section). For PERA, the impact of the GASB volatility is that a significant portion of the liability increase that occurred in Fiscal Year 2016 due to asset losses was nearly completely offset in Fiscal Year 2017 from comparable asset gains.

More important than historical or current funding ratios is the speed and direction of the expected future funding ratios. Prospective funding ratios are not demonstrated within this report, but are an important component of board considerations of each plan's funding status. A pension plan is considered fully funded when a funding ratio reaches 100 percent. However, that does not mean funding requirements will cease. The cost of future benefit accruals will continue to be required even after previously accrued, but not yet funded obligations have been met. It is important that benefit structures and future contributions are aligned to ensure that plans progress toward full funding in a reasonable time period.

Major Initiatives

During the year the Legislature approved board recommended demographic assumption changes for the Police & Fire Plan. These changes were the result of a study of member experience over a four-year period ending June 30, 2015. The assumption changes included lowering the assumed member salary increase rates, changing the termination and retirement rates, and minor changes to the assumed percent married, spouse age differences, and form of payment assumptions. The most impactful assumption change was not based on actual observed member experience, but rather a new forecast for rates of future mortality rate improvements. The Legislature also approved changes to the load factors for the Combined Service Annuities per a study done by the Legislative Commission on Pensions and Retirement (LCPR) actuary. Collectively, the new assumptions increased the Unfunded Actuarial Accrued Liability for funding purposes by about $0.5 billion and reduced the funding ratio by over 4 percent.

The Legislature also approved the board's recommendation to adopt the same mortality changes applicable to the Police & Fire Plan for the Correctional Plan. In addition, the LCPR actuary-recommended Combined Service Annuity load factors were changed for the Correctional Plan. These assumption changes increased the Correctional Plan UAAL by $22 million and decreased the funding ratio by over 3 percent.

PERA's board proposed legislative changes during the 2017 session that would have clarified some administrative provisions and improved long-term plan sustainability for the Police & Fire Plan. PERA's board also responded to changes to the General Employees Plan and Correctional Plan that were proposed by the Legislature. All proposed changes in the omnibus pension bill were ultimately incorporated into a broader bill that was vetoed for non-pension related purposes. PERA's board and staff continued work throughout the year to engage with stakeholders in preparation for the 2018 legislative session.

There was legislation passed in 2017 that impacts PERA. PERA is now responsible for the administration of long-term equity investment accounts created by agreements between the SBI and qualifying local governments.

In fiscal year 2017, 30 fire departments joined the Statewide Volunteer Firefighter Retirement Plan, bringing the total to 142. Effective January 2017, only one participating fire department provides monthly benefits to their retired firefighters and surviving spouses.

PERA continued to focus on utilizing automation to improve service to our members. Automation of combined service annuity calculations improved the data available in MY PERA and also reduced the response time for members requesting written estimates. Survivors benefited from improved service through automation of payment adjustments upon death of our PERA members. New retirees and members receiving refunds experienced improved timeliness of their payments as a result of new reporting and data integrity analysis.

During FY 2017, PERA began hosting webinars as a way to offer training and educational opportunities throughout the year for participating employers. Most of the webinars are aimed at helping employers to better understand how to meet specific reporting requirements. Others demonstrate how to use our online web reporting system. The sessions are recorded and available on our website for anyone to watch at any time. Each session includes a question

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and answer portion that is documented and available for printing by the attendees and others. The feedback that we collect through an online survey indicates that the employers that have attended find the sessions to be valuable and would recommend them to other agencies.

PERA also continued work to update all of our member communication materials including brochures and group meeting presentation materials. PERA provides two newsletters to members annually. These newsletters were reformatted during the past year to update the appearance and increase the amount of information that can be conveyed.

Professional Services

Actuarial consulting services during the fiscal year were provided by Gabriel, Roeder, Smith & Co. The State's Attorney General continued to provide PERA with legal counsel. The SBI continued to manage and invest the assets of PERA's funds, and the State's Legislative Auditor provided professional financial auditing services. CliftonLarsonAllen provided auditing services for PERA's GASB 68-related schedules. Disability determination services were provided by Managed Medical Review Organization (MMRO).

Membership Report

This report is complemented by an annual financial newsletter that discloses, in summary form, the contents of this report. This financial newsletter is mailed by February of each year to all PERA members, including active and deferred members and benefit recipients. In addition, this report is reproduced, in its entirety, on PERA's website, www.mnpera.org.

National Recognition

PERA has an outstanding staff dedicated to the utmost professionalism in administering the plans entrusted to the governance of the PERA Board of Trustees. PERA received national recognition as a leader 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, 2016.

The Certificate of Achievement is a prestigious national award, recognizing conformance with the highest standards for preparation of state and local government financial reports. In order 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.

Acknowledgments

As a compendium of financial, investment, actuarial and other statistical information, PERA's Comprehensive Annual Financial Report provides complete and reliable information on which management decisions may be based and through which compliance with statutory requirements may be assessed. In addition, the report serves as the primary source through which the effectiveness of the Trustees' management and administration of PERA and its funds may be judged.

We are sure you join with us in expressing gratitude and appreciation to the staff and PERA's advisors for their efforts in producing this report and for their loyal and dedicated service to the Association and its members, annuitants, beneficiaries, and participating local governmental employers.

Respectfully submitted,

Doug Anderson Michael Hagerty

Doug Anderson
Executive Director

Michael Hagerty
Chief Finance Officer

PERA Board of Trustees & Professional Consultants

Board of Trustees

Kathryn A. Green, President
Appointed School Board Representative
Trustee since April 2006
Current term expires January 2018

Ross Arneson, Vice President
Elected Retiree/Disabilitant Representative
Trustee since February 1999
Current term expires January 2019

Paul Bourgeois
Elected General Membership Representative
Trustee since February 2011
Current term expires January 2019

Rebecca Otto
State Auditor
Trustee since February 2007
Current term expires January 2019

Mary Falk
Appointed General Public Representative
Trustee since June 2015
Current term expires January 2019

Thomas Stanley
Elected General Membership Representative
Trustee since March 2013
Current term expires January 2019

Paul Ford
Elected Police & Fire Representative
Trustee since August 2017
Current term expires January 2019

Lori Volz
Elected General Membership Representative
Trustee since February 2015
Current term expires January 2019

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

Lawrence J. Ward
Appointed Annuitant Representative
Trustee since February 2012
Current term expires January 2020

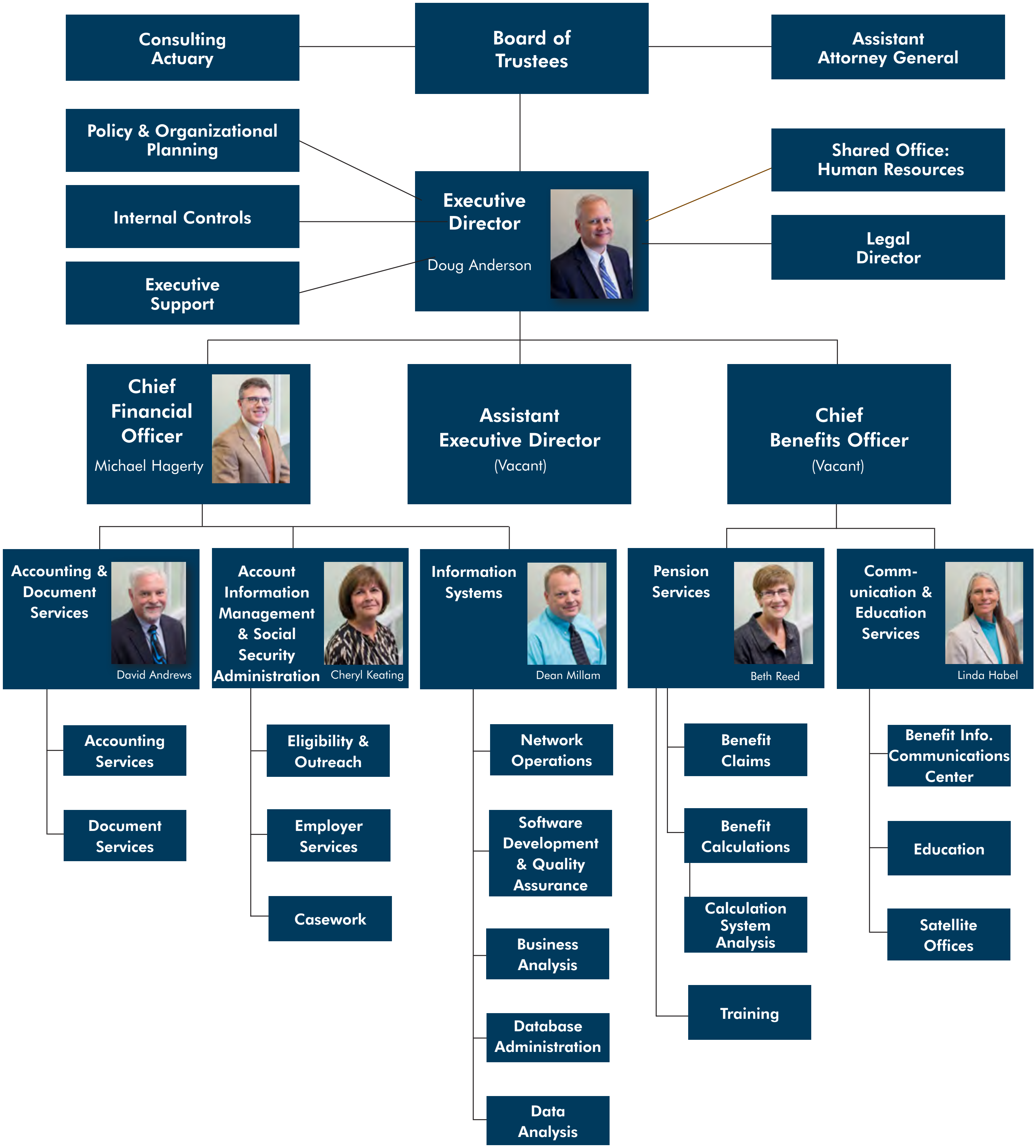
Leigh Lenzmeier
Appointed County Representative
Trustee since November 2010
Current term expires January 2017

Professional Consultants

Actuary:
Gabriel Roeder Smith & Company
Auditor:
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 page 83 in the *Investment Section* of this CAFR.

Organization Structure & Key Administrative Staff



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.

Finance Section

PERA 2017 Comprehensive Annual Financial Report

Secure

Safeguarding your future

In 1972 the Capitol wins national register of historic places status. The application said the Capitol had been a “silent witness to the unfolding of the state’s political history” and that it is “clearly the most perfectly executed monumental public building in the entire state." Some of its most impressive features include the second largest self-supported marble dome in the world. The Capitol is made of 16 kinds of marble from around the world, as well as Minnesotan limestone and granite.

Photo courtesy MN Dept. of Admin. Cathy Klima photographer

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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, 2017, 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, 2017, 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.

Emphasis of Matter – GASB and Statutory Financial Requirements

Minnesota Statutes 2017, 356.20, require PERA to include in its financial report information using funding-focused statutory assumptions and methodologies. For its fiscal year 2017 financial report, the funding-focused information differs from the GASB-based information primarily for the following reasons:

(1) The discount rates required by statute for funding purposes were significantly higher than the discount rates used for financial reporting purposes. The discount rate is the rate used to bring the projected future benefit payments to the present value of those benefits (the pension liability). A higher discount rate results in a smaller pension liability.

(2) For funding purposes, statutes require investment gains and losses be recognized over a five-year period to "smooth" the volatility that can occur from year to year. For GASB financial reporting purposes, assets are valued at fair (market) value as of the end of the fiscal year.

Including funding-focused information was necessary for PERA to comply with state law and had no effect on our audit opinion.

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*, we issued our report, also dated December 15, 2017, 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, 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.

James R. Nobles

James Nobles
Legislative Auditor

Tracy Gebhard

Tracy Gebhard, CPA
Audit Director

December 15, 2017
Saint Paul, Minnesota

Management Discussion and Analysis

As management of Minnesota's Public Employees Retirement Association (PERA), we present this discussion and analysis of the financial activities for the year ended June 30, 2017 (fiscal year 2017). This narrative is intended to supplement the financial statements which follow this discussion, and should be read in conjunction with the transmittal letter, which begins on page 10 of this annual report.

Overview of the Financial Statements

This Comprehensive Annual Financial Report (CAFR) contains two basic financial statements: the *Statement of Fiduciary Net Position* and the *Statement of Changes in Fiduciary Net Position*. These financial statements, in conjunction with the accompanying *Notes to the Financial Statements*, report information about PERA's financial condition in an attempt to answer the question: "Is PERA better off or worse off as a result of this year's activities?" These statements are prepared using the accrual basis of accounting as is required by generally accepted accounting principles in statements issued by the Government Accounting Standards Board (GASB).

Basic Financial Statements

The *Statement of Fiduciary Net Position* provides a snapshot of account balances at year-end. It reports the assets available for future payments to benefit recipients, along with any liabilities that are owed as of the statement date. The difference between assets and liabilities, called "Net Position Restricted for Pensions," represents the value of assets held in trust for future benefit payments. Over time, increases and decreases in net position can be one measurement of whether PERA's financial position is improving or declining.

The *Statement of Changes in Fiduciary Net Position*, on the other hand, shows additions to and deductions from net position that took place throughout the year.

Notes to the Basic Financial Statements

The Notes to the Financial Statements are an integral part of the financial statements and provide additional information that is essential for a comprehensive understanding of the data provided in the financial statements. The notes describe the accounting and administrative policies under which PERA operates, and provide additional levels of detail for selected financial statement items.

- Note 1 provides a plan description for PERA, including background of PERA as an organization, its employers, participating members and benefit provisions of the various pension plans.
- Note 2 provides a summary of significant accounting policies. This section provides notes on PERA as a reporting entity, the basis of presentation and accounting, and an explanation of various financial statement components like cash, receivables, investments, capital assets, accrued compensated absences and administrative expenses.
- Note 3 provides information about cash deposits and PERA's investments, including fair value reporting, various risks, derivatives and securities lending.
- Note 4 provides information about capital assets.
- Note 5 provides information about contributions.
- Note 6 provides information about the net pension liability of employers and the State of Minnesota, a nonemployer contributing entity.
- Note 7 provides information about new asset transfers and PERA employee participation in the Coordinated Plan.

Financial Highlights

- PERA's net position increased 11.9 percent during the year from $25.7 billion in fiscal year 2016 to $28.8 billion in fiscal year 2017.
- Total additions for fiscal year 2017 were $5.0 billion, comprised of contributions of $1.2 billion, investment gain of $3.8 billion, and a transfer of assets from new participants in the Statewide Volunteer Firefighter Retirement Plan of $14 million.
- Total deductions for the year increased from $1.9 billion in fiscal year 2016 to $2.0 billion in fiscal year 2017 largely due to an increase in the number of benefit recipients and a one percent COLA granted in January 2017.
- As of June 30, 2017 the actuarially determined funding status for the main retirement plans administered by PERA is as follows:
  - General Employees Plan is actuarially funded at 77.8 percent
  - Police and Fire Plan is actuarially funded at 85.2 percent, and
  - Correctional Plan is actuarially funded at 94.5 percent.

Financial Analysis of PERA's Funds

PERA is the administrator of three cost-sharing multiple-employer defined benefit retirement plans, one agent multiple-employer defined benefit plan, and one defined contribution plan. In a defined benefit plan, pension benefits are determined by a member's salary or benefit level and credited years of service, regardless of contribution amounts and investment returns for those contributions over the working career of a member. PERA administers four such plans which are accounted for in the following funds:

- General Employees Retirement Plan accounted for in the General Employees Fund;
- Public Employees Police and Fire Plan accounted for in the Police and Fire Fund;
- Local Government Correctional Service Retirement Plan accounted for in the Correctional Fund; and
- Statewide Volunteer Firefighter Retirement Plan accounted for in the Volunteer Firefighter Fund.

In a defined contribution plan, pension benefits are determined by contributions made to a member's account and investment returns on those contributions. PERA administers one such plan accounted for in the Defined Contribution Fund.

General Employees Fund

Total assets as of June 30, 2017 were $22.2 billion, an increase of $1.6 billion or 7.9 percent from the prior year. The primary reason for the increase was due to a 15.1 percent investment return.

Total liabilities as of June 30, 2017 were $2.1 billion, a decrease of $475 million from the prior year, mostly due to a lower value of securities lending collateral on the books at year end.

Total net position, the difference between total assets and total liabilities, increased $2.1 billion, or 11.7 percent, in fiscal year 2017 to $20.1 billion.

Additions to Plan Net Position

The reserves needed to finance retirement benefits are accumulated through the collection of employer, member, and State of Minnesota contributions and through earnings on investments. Total contributions were $884 million in addition to a net investment gain of $2.7 billion for total additions to the plan of $3.6 billion.

Employer, member, and State of Minnesota contributions increased from the previous year by a total of $43 million, largely due to salary increases, and more active members. The net investment gain of $2.7 billion was the result of a 15.1 percent rate of return in fiscal year 2017.

Deductions from Plan Net Position

The plan's largest expense was for retirement benefits to members and beneficiaries. Total benefits increased 4.0 percent to a little more than $1.4 billion in fiscal year 2017. The increase in benefits resulted from an increase in the number of benefit recipients and a one percent cost-of-living increase for most retirees effective January 1, 2017.

Overall Financial Position

The financial position of a public pension plan is not so much determined by what is found on the face of the financial statements but by looking at trends in the funding ratio and contribution sufficiency or deficiency. To minimize the volatility, the actuarial value of assets, smoothed over a five-year period, is used to determine the funding ratio. The actuarial value of assets is presently $184 million lower than the fair value of assets. The funding ratio increased from 75.5 percent in fiscal year 2016 to 77.8 percent in fiscal year 2017 when calculated using the actuarial value of assets.

For the past several years, contribution rates have not been sufficient for the General Employees Plan to become fully funded by its target date of 2033. As of June 30, 2017, contributions were deficient by 1.6 percent of pay to reach fully funded status by 2033, down from a 1.9 percent in fiscal year 2016.

Police and Fire Fund

Total assets as of June 30, 2017 were over $8.7 billion in the Police and Fire Fund, an increase of $632 million, or 7.8 percent from the prior year. Total liabilities were $823 million, a decrease of $189 million mostly due to a lower value of securities lending collateral at year end.

Fiduciary Net Position—Defined Benefit Plans (in thousands)

	General Employees Fund		Police and Fire Fund	
	2017	2016	2017	2016
Assets				
Cash & Receivables	$47,605	$47,949	$20,848	$18,442
Investments	20,058,774	17,952,309	7,903,603	7,085,329
Securities Lending Collateral	2,073,806	2,549,270	817,426	1,006,274
Capital Assets & Other	6,906	7,254	0	0
Total Assets	**$22,187,091**	**$20,556,782**	**$8,741,877**	**$8,110,045**
Liabilities				
Accounts Payable	$6,408	$5,483	$5,572	$5,681
Accrued Compensated Absences	970	886	0	0
Securities Lending Collateral	2,073,806	2,549,270	817,426	1,006,274
Bonds Payable	5,328	5,994	0	0
Total Liabilities	**$2,086,512**	**$2,561,633**	**$822,998**	**$1,011,955**
Total Net Position	**$20,100,579**	**$17,995,149**	**$7,918,879**	**$7,098,090**

Total net position increased $821 million or 11.6 percent from the prior year leaving an ending balance of $7.9 billion.

Additions to Plan Net Position

Employer and employee contributions increased $17.1 million in fiscal year 2017, largely due to largely due to salary increases and more active members. In 2014 the State of Minnesota began providing $9 million per year in direct state aid to the Police and Fire Fund until the fund is 90 percent funded. The net investment gain in fiscal year 2017 totaled about $1.1 billion, as the result of a 15.1 percent rate of return.

Deductions from Plan Net Position

Retirement benefits to members and beneficiaries made up over 99 percent of the plan's total deductions. The amount of benefits paid increased 2.8 percent in fiscal year 2017 to $512 million. The increase in benefits resulted from an increase in the number of retirees and a one percent cost-of-living increase for most retirees effective January 1, 2017.

	Correctional Fund		Volunteer Firefighter Fund	
	2017	**2016**	**2017**	**2016**
	$1,223	$524	$189	$119
	601,732	507,706	75,432	54,269
	62,168	72,017	10,872	7,737
	0	0	0	0
	$665,123	**$580,247**	**$86,493**	**$62,125**
	$495	$447	$17	$13
	0	0	0	0
	62,168	72,017	10,872	7,737
	0	0	0	0
	$62,663	**$72,464**	**$10,889**	**$7,750**
	$602,460	**$507,783**	**$75,604**	**$54,375**

Overall Financial Position

PERA's board proposed changes during the 2017 legislative session would have improved long-term plan sustainability for the Police and Fire Plan. All proposed changes in the bill were ultimately vetoed for non-pension related purposes. PERA's board and staff will continue to work throughout the year to re-introduce the same legislation in the 2018 legislative session to further the improvements made in previous legislative sessions.

The actuarial value of assets, smoothed over a five-year period, is presently $78 million lower than the fair value of assets. The funding ratio decreased from 87.7 percent in fiscal year 2016 to 85.2 percent in fiscal year 2017 when calculated using the actuarial value of assets.

The fiscal year 2016 contribution sufficiency of 1.2 percent of pay changed to a 1.2 percent of pay deficiency in fiscal year 2017.

Correctional Fund

Total assets in the Correctional Fund as of June 30, 2017 of $665 million reflected an increase of $85 million or 14.6 percent from the prior year. The increase is due to positive investment earnings. The Correctional Fund is a newer fund with a smaller asset base and brings in more cash through contributions than it pays out in benefits and refunds. Total liabilities decreased due to a lower amount of securities lending collateral at the end of the year. As a result, total net position increased $95 million with an ending net position of $602 million.

Additions to Plan Net Position

Contributions and net investment income for fiscal year 2017 totaled $108 million, compared to $28 million in the prior year. Employer and member contributions increased

$1.7 million from fiscal year 2016 levels due to an increase in the number of active members. The Correctional Fund had net investment income that totaled $78 million due to a 15.1 percent rate of return in fiscal year 2017.

Deductions from Plan Net Position

Expenses for this plan are still relatively small. Retirement benefits increased 17.6 percent from $9.4 million in fiscal year 2016 to $11.0 million in fiscal year 2017 as more members became eligible to retire and most retirees received a 2.5 percent cost-of-living increase on January 1, 2017.

Overall Financial Position

At the end of fiscal year 2017, the Correctional Fund is 94.5 percent funded, which is a slight decrease from last year's 95.7 percent. The contribution sufficiency of 0.12 percent of pay in fiscal year 2016 changed to a 0.53 percent of pay deficiency in fiscal year 2017.

Volunteer Firefighter Fund

The Volunteer Firefighter Retirement Plan is an agent multi-employer defined benefit plan that began January 1, 2010 with 6 fire departments and 129 volunteer firefighters. Since then, an additional 136 fire departments have joined the plan and total net position has increased to $76 million. Originally all the fire departments in the plan paid lump-sum benefits. However, on January 1, 2016 the first fire department with a monthly annuity payment option joined the plan.

Assets increased by 39 percent in fiscal year 2017, or roughly $24 million, largely due to $14 million in new assets being transferred into the fund from the 30 fire departments that joined the plan during the year. Fire departments are only eligible to join the plan on January 1 of any given year. Investment returns were 10.1 percent for fiscal year 2017 due to a different asset allocation mix than the other defined benefit funds.

Changes in Fiduciary Net Position—Defined Benefit Plans (in thousands)

	General Employees Fund*		Police and Fire Fund	
	2017	2016	2017	2016
Additions				
Employer Contributions	$477,888	$459,978	$166,329	$156,065
State Contributions	6,000	6,000	9,000	9,000
Member Contributions	400,204	375,291	101,984	95,172
Investment Income (Loss)	2,682,901	(20,851)	1,058,942	(8,949)
Other Additions	411	431	24	3
Total Additions	**$3,567,404**	**$820,849**	**$1,336,279**	**$251,291**
Deductions				
Retirement Benefits	$1,413,448	$1,359,176	$512,379	$498,608
Refunds of Contributions	37,234	37,209	2,119	2,391
Administrative Expenses	11,292	11,110	992	906
Total Deductions	**$1,461,974**	**$1,407,495**	**$515,490**	**$501,905**
Increase (Decrease) in Net Position	**$2,105,430**	**($586,646)**	**$820,789**	**($250,614)**

*Includes Minneapolis Employees Retirement Fund

Funding for the Volunteer Firefighter Fund is received through fire state aid from the State of Minnesota, investment returns, and annual employer contributions (if they are needed to keep each fire department's account 100 percent funded). In its seventh full year, the fund received $716,000 in contributions from employers and $2.7 million in fire state aid from the State of Minnesota. Net investment income totaled $6.4 million and benefits paid totaled $2.7 million. Net position increased 39 percent from fiscal year 2016 to $76 million, largely due to the additional fire departments that joined the plan during the year.

Agency Summary

PERA experienced investment returns of 15.1 percent that were above the expected rate of return. These investment returns have helped to offset prior year investment earnings that were below the expected rate of return. PERA continues to review all of the funding assumptions and is continually reviewing options to shore up the financial position for all the funds.

This financial report is designed to provide a general overview of PERA's finances and to demonstrate its accountability with the assets it holds in trust. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to PERA at 60 Empire Drive, Suite 200 in St. Paul, Minnesota 55103-2088.

Correctional Fund		Volunteer Firefighter Fund	
2017	**2016**	**2017**	**2016**
$17,489	$16,490	$716	$332
0	0	2,659	1,811
11,666	11,008	0	0
78,363	209	6,409	1,325
0	0	14,206	20,401
$107,518	**$27,707**	**$23,990**	**$23,869**
$11,033	$9,381	$2,700	$1,644
1,478	982	0	0
330	292	61	132
$12,841	**$10,655**	**$2,761**	**$1,776**
$94,677	**$17,052**	**$21,229**	**$22,093**

Statement of Fiduciary Net Position

As of June 30, 2017 (in thousands)

	Defined Benefit Funds		
	General Employees Fund	Police and Fire Fund	Correctional Fund
Assets			
Cash	**$6,740**	**$2,500**	**$505**
Receivables			
Accounts Receivable	$39,225	$18,294	$712
Due from Other Funds	1,640	54	6
Total Receivables	**$40,865**	**$18,348**	**$718**
Investments at Fair Value			
U.S. Stock Actively Managed	$5,359,025	$2,112,351	$160,652
Bond Pool	3,895,018	1,535,288	116,764
U.S. Stock Index Fund	3,328,383	1,311,939	99,778
Broad International Stock Fund	4,355,316	1,716,722	130,563
Alternative Pool	2,635,922	1,038,994	79,019
Money Market Fund	485,110	188,309	14,956
Total Investments	**$20,058,774**	**$7,903,603**	**$601,732**
Securities Lending Collateral	**$2,073,806**	**$817,426**	**$62,168**
Net Investment in Capital Assets			
Equipment Net of Accumulated Depreciation	$253	$0	$0
Property Net of Accumulated Depreciation	6,653	0	0
Total Capital Assets	**$6,906**	**$0**	**$0**
Total Assets	**$22,187,091**	**$8,741,877**	**$665,123**
Liabilities			
Accounts Payable	$6,197	$4,546	$157
Payable to Other Funds	211	1,026	338
Securities Lending Collateral	2,073,806	817,426	62,168
Accrued Compensated Absences	970	0	0
Bonds Payable	5,328	0	0
Total Liabilities	**$2,086,512**	**$822,998**	**$62,663**
Net Position Restricted For Pensions	**$20,100,579**	**$7,918,879**	**$602,460**

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

Volunteer Firefighter Fund	Defined Contribution Fund	Agency Fund Other Post Employment Benefits	Total
$13	**$113**	**$872**	**$10,743**
$164	$87	$0	$58,482
12	0	0	1,712
$176	**$87**	**$0**	**$60,194**
$0	$10,751	$0	$7,642,779
$34,052	3,205	105,836	5,690,163
26,597	40,891	452,823	5,260,411
11,335	3,161	0	6,217,097
0	0	0	3,753,935
3,448	5,878	16,501	714,202
$75,432	**$63,886**	**$575,160**	**$29,278,587**
$10,872	**$7,538**	**$0**	**$2,971,810**
$0	$0	$0	$253
0	0	0	6,653
$0	**$0**	**$0**	**$6,906**
$86,493	**$71,624**	**$576,032**	**$32,328,240**
$17	$16	$576,032	$586,965
0	137	0	1,712
10,872	7,538	0	2,971,810
0	0	0	970
0	0	0	5,328
$10,889	**$7,691**	**$576,032**	**$3,566,785**
$75,604	**$63,933**	**$0**	**$28,761,455**

Financial Section

Statement of Changes in Fiduciary Net Position

For the Fiscal Year Ended June 30, 2017 (in thousands)

	Defined Benefit Funds		
	General Employees Fund	**Police and Fire Fund**	**Correctional Fund**
Additions			
Contributions			
Employer	$477,888	$166,329	$17,489
State of Minnesota	6,000	9,000	0
Member	400,204	101,984	11,666
Total Contributions	**$884,092**	**$277,313**	**$29,155**
Investment Income			
Net Appreciation in Fair Value of Investments	$2,690,684	$1,062,022	$78,582
Less Investment Expense	(20,822)	(8,220)	(610)
Net Investment Income	**$2,669,862**	**$1,053,802**	**$77,972**
From Securities Lending Activities:			
Securities Lending Income	$29,571	$11,656	$887
Borrower Rebates	(12,176)	(4,799)	(365)
Management Fees	(4,356)	(1,717)	(131)
Net Income From Securities Lending	**$13,039**	**$5,140**	**$391**
Total Net Investment Income	**$2,682,901**	**$1,058,942**	**$78,363**
Other Additions	**$411**	**$24**	**$0**
Total Additions	**$3,567,404**	**$1,336,279**	**$107,518**
Deductions			
Benefits	$1,413,448	$512,379	$11,033
Refunds of Contributions	37,234	2,119	1,478
Administrative Expenses	11,292	992	330
Total Deductions	**$1,461,974**	**$515,490**	**$12,841**
Net Increase (Decrease) in Net Position	**$2,105,430**	**$820,789**	**$94,677**
Net Position Restricted For Pensions			
Beginning of year	**$17,995,149**	**$7,098,090**	**$507,783**
End of year	$20,100,579	$7,918,879	$602,460

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

Volunteer Firefighter Fund	Defined Contribution Fund	Total
$716	$1,822	$664,244
2,659	0	17,659
0	1,739	515,593
$3,375	**$3,561**	**$1,197,496**
$6,589	$7,266	$3,845,143
(234)	(54)	(29,940)
$6,355	**$7,212**	**$3,815,203**
$129	$136	$42,379
(57)	(57)	(17,454)
(18)	(17)	(6,239)
$54	**$62**	**$18,686**
$6,409	**$7,274**	**$3,833,889**
$14,206	**$7**	**$14,648**
$23,990	**$10,842**	**$5,046,033**
$2,700	$0	$1,939,560
0	5,233	46,064
61	137	12,812
$2,761	**$5,370**	**$1,998,436**
$21,229	**$5,472**	**$3,047,597**
$54,375	**$58,461**	**$25,713,858**
$75,604	$63,933	$28,761,455

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 approximately 329,000 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. Five trustees are appointed by the governor. 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.

The following is a summary of the laws, regulations, and administrative rules governing PERA's 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.

PERA is the administrator of five separate retirement plans and an agency fund that accounts for other post-employment benefits for participating employers. 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 retirement plans: the General Employees Retirement Plan (General Employees Plan accounted for in the General Employees Fund), the Public Employees Police and Fire Plan (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 (Correctional Plan accounted for in the Correctional Fund).

In addition to the cost-sharing multiple-employer plans, PERA administers one agent multiple-employer retirement plan, the Statewide Volunteer Firefighter Retirement Plan (Volunteer Firefighter Plan accounted for in the Volunteer Firefighter Fund) and one multiple-employer defined contribution plan, the Public Employees Defined Contribution Plan (Defined Contribution Plan accounted for in the Defined Contribution Fund). PERA also administers an agency fund to track the investments placed in a trust by various entities with SBI to cover future other postemployment benefit costs (OPEB).

Figure 1 presents summary information on each retirement plan and the agency fund. Specific details unique to certain of the plans 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 353, 353E, and 356
DATE ESTABLISHED:	• Basic Plan 1931, Coordinated Plan 1968, and 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:	• 2,000	• 500	• 80

Volunteer Firefighter Plan	Defined Contribution Plan	Agency Fund
• Minnesota Statutes, Chapters 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	• Minnesota Statutes, Chapter 471.6175
• 2010 for the lump sum division and 2016 for the monthly benefit division	• 1987	• 2008
• Agent multiple-employer defined benefit	• Multiple-employer defined contribution	• PERA serves as the trust administrator for multiple-employer other post employment benefit (OPEB) plans that create a revocable or irrevocable trust with the State Board of Investment to pay future OPEB costs.
• Any municipal volunteer fire department or independent nonprofit firefighting corporation	• Elected and appointed local government officials (except elected county sheriffs), city managers, emergency medical service personnel, physicians employed by a governmental agency or 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	• Any political subdivision or other public entity that has an OPEB liability
• 142	• 1,000	• 22

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 percent after 5 years up to 100 percent after 10 years for members first hired on or after July 1, 2010 but before July 1, 2014 • Prorated basis from 50 percent 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 percent after 5 years up to 100 percent 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
SERVICE BENEFIT FORMULAS:	• Members hired prior to July 1, 1989 receive the higher of a step-rate formula, Method 1, or a level-rate formula, Method 2. Only Method 2 is used for members hired on or after July 1, 1989. • Method 1: The annuity accrual rate for Basic members is 2.2 percent of average salary for each of the first 10 years of service and 2.7 percent for each remaining year. The annuity accrual rate for Coordinated members is 1.2 percent of average salary for each of the first 10 years of service and 1.7 percent for each remaining year. • Method 2: The annuity accrual rate is 2.7 percent of average salary for Basic members and 1.7 percent for Coordinated members for each year of service. • The annuity accrual rate for former MERF members is 2.0 percent of average salary for each of the first 10 years of service and 2.5 percent for each remaining year.	• Annuity accrual rate is 3.0 percent of average salary for each year of credited service	• Annuity accrual rate is 1.9 percent of average salary for each year of credited service

Volunteer Firefighter Plan	Defined Contribution Plan	Agency Fund
• Prorated basis from 40 percent at 5 years to 100 percent at 20 years	N/A	N/A
N/A	N/A	N/A
• Lump sum division benefits are based on the number of years of service multiplied by a benefit level chosen by the entity sponsoring the fire department from 71 possible levels ranging from $500 per year of service to $7,500 per year of service. • Monthly division benefits determined at the individual plan level	N/A	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. The Basic Plan was PERA's original retirement plan and is not coordinated with the federal program. PERA's Basic Plan was closed to new membership in 1968 with the creation of the Coordinated Plan. Today, fewer than ten Basic 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 2031ensure the plan remains self-sustaining. The active membership of the Minneapolis Employees Retirement Fund is also small with less than 20 members.

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.

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, additional municipal contributions.

Agency Fund

The various entities participating in PERA's agency fund, used to account for any political subdivision or other public entity that has an OPEB liability to create a separate trust with SBI to pay future OPEB costs, are responsible for making sure any withdrawals are done in accordance with generally accepted accounting principles and Minnesota Statutes. They are also responsible for setting and paying benefits, for determining voluntary contribution amounts, and for handling any OPEB reporting requirements. PERA is the trust administrator.

B) Participating Members

Shown in **Figure 2** on page 39 are the membership totals in PERA's multiple-employer defined benefit plans as of June 30, 2017. In addition, the Defined Contribution Plan serves approximately 7,900 members.

Figure 2: PERA Membership — Defined Benefit Plans

	General Employees	Police and Fire	Correctional	Volunteer Firefighter	Total
Retirees and beneficiaries receiving benefits	98,201	10,579	1,085	75	109,940
Terminated employees entitled to benefits/refunds but not yet receiving them:					
Vested	52,274	1,506	2,933	560	57,273
Non-Vested	138,335	1,134	2,624	0	142,093
Current, active employees:					
Vested	94,845	9,114	2,169	1,744	107,872
Non-Vested	58,022	2,408	1,673	1,009	63,112
Total	**441,677**	**24,741**	**10,484**	**3,388**	**480,290**

C) Benefit Provisions -

Defined Benefit Annuity 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 any five successive years 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 for 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 highest-paid 60 consecutive months of public service (high-five salary), or all months of service if less than 60.

Members of the PERA General Employees, Police and Fire and Correctional plans 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. 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. The benefit amount, calculated as of the date of termination, will increase at a rate of one percent per year, compounded annually, for members who terminated public service prior to January 1, 2012. There is no benefit growth for members terminating service thereafter.

Combined Service and Proportionate Pensions — Retiring members may elect to combine service in a PERA-covered position with service in any of the other eligible Minnesota pension funds and qualify for a retirement benefit from each fund in which they participated. These funds are designated by statute. Vested members qualify for a combined service pension if they have six or more months of service in each fund and have not begun to receive a benefit from any of the designated funds. Pensions are based upon the formula of each fund and the member's average salary over the five highest-paid years of service, no matter when it was earned.

Public employees who retire at or over their Social Security full retirement age with between one and ten years of service in one or more designated funds may qualify for a proportionate pension. Benefits are paid by each applicable fund in which the employee has credit and are based upon the formula of each fund and the member's average salary during the period of service covered by that fund.

General Employees Plan

Under Method 1, members are eligible for a full (unreduced) 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 the 0.25 percent reduction made from age 62 instead of 65.

Method 2 provides for unreduced retirement benefits 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 (about six percent per year) for members retiring prior to full retirement age.

MERF members may choose a death benefit option with the death benefit being at least $500 and not more than one-half the value of the employee's total retirement benefit.

Police and Fire Plan

A full unreduced pension 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. It will culminate in a five percent per year reduction in July 2019.

Correctional Plan

A full, unreduced pension 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 benefit.

Post Retirement Increases

Post retirement increases of 1 percent (2.5 percent for Correctional Plan) are given each year except that annuitants who have been receiving a benefit for between 7 to 17 months (31 to 41 months for Police and Fire plan annuitants whose benefits were effective after June 1, 2014) receive a prorated proportion of the increase on a sliding scale. If the market value of assets equals or exceeds 90 percent of the actuarial accrued liability in the two most recent consecutive actuarial valuations for each plan, the post retirement increase will increase to 2.5 percent for annuitants in that plan.

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 their public service.

D) Benefit Provisions – Volunteer Firefighter Plan

The lump-sum retirement division account is funded by fire state aid, investment earnings and (if necessary) employer contributions. Members do not contribute to the plan.

The service pension from the lump sum division is based on a benefit level chosen by the fire department and the vesting percent specified in *Minnesota Statutes* Section 353G.09. The service pension from the monthly division is specified in the retirement benefit plan document 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 six 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, Bond Pool, Alternative Pool, and Money Market Fund. PERA receives 2.0 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 result in no benefit reduction for retirees. Earnings limits are waived for Coordinated Plan members who begin receiving benefits under a Phased Retirement Agreement. Phased Retirement allows members age 62 and above to begin receiving a pension without termination of public service if they accept a reduction in hours worked to less than 1,044 per year. The agreements can be up to one year in length and can be renewed for up to five years. The program is scheduled to sunset in 2019. Because they only provide lump-sum benefits, the Defined Contribution Plan and the Volunteer Firefighter Plan lump sum division have 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.

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 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 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.

Neither the Defined Contribution Plan nor the Volunteer Firefighter Plan has specific disability benefits. However, the Defined Contribution Plan does allow for monthly benefit payments until the account balance is exhausted.

H) Survivor Benefits

PERA also provides survivor (death) 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 Coordinated, Correctional, 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 Coordinated 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 Coordinated 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 high five-year 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 Coordinated 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 4 percent interest, compounded annually. Employer contributions are not refundable to the member or beneficiary; they remain with the plan to pay retirement, disability and survivor benefits.

A refund of member 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 a retiree and designated survivor, if any, die before all employee contributions are paid in the form of a pension or benefits, 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.

A former member who has received a refund may repay all or a portion of the refund after having reentered public service for a minimum of six months. This restores forfeited service. Interest charged on repayment is 8.5 percent, compounded annually until June 30, 2015, and 8 percent thereafter.

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

For PERA's defined benefit and defined contribution plans, 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. 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 2017 but not due from employers until fiscal year 2018.

Due from Other Funds represents the reallocation of administrative expenses, which is done annually in August once the fiscal year's expenses have been finalized.

E) Investments

Pursuant to Minnesota Statutes, Section 11A.04, the state's retirement plan assets are commingled in various pooled investment accounts, administered by SBI. As of June 30, 2017, the participation shares in the combined retirement fund at fair value totaled approximately 31.3 percent for the General Employees Fund, 12.3 percent for the Police and Fire Fund, and 0.9 percent for the Correctional Fund.

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 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.

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 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 Minnesota State Board of Investment at the Retirement Systems of Minnesota Building, 60 Empire Drive, Suite 355, Saint Paul, Minnesota 55103.

Significant Changes in Investment Policy

- Asset Allocation - The SBI has an asset allocation policy which is based on investment objectives and the expected long-term performance of the capital markets. The most recent target asset allocation became effective in fiscal year 2017 for the combined funds. (The asset allocation policy did not change for the Volunteer Firefighter Fund.) The changes to the asset allocation policy were the result of a 2016 study conducted by an SBI consultant. If 20 percent allocation to the alternative assets cannot be achieved, the uncommitted allocation is invested in stocks. When the actual asset allocation deviates beyond specified ranges, assets are rebalanced to achieve the long-term allocation targets.
- New Benchmarks - The board approved new benchmarks for stocks in 2017, moving to a composite of the benchmarks used in 2016. The U.S. stock portion of the portfolio will continue to be benchmarked against the Russell 3000 Index and the international stock portion of the portfolio will be benchmarked using the Morgan Stanley International All County World Index ex USA, including any sub-indices that are segmented by market cap, style or geography.

The SBI's 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, 2017, 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)
Domestic Stocks	39%	5.10%
International Stocks	19%	5.30%
Bonds/Fixed Income	20%	0.75%
Alternative Assets	20%	5.90%
Unallocated Cash	2%	0.00%
Total	100%	

For the Volunteer Firefighter Fund:

Asset Class	Target Allocation	Long-term Expected Real Rate of Return (Geometric)
Domestic Stocks	35%	5.10%
International Stocks	15%	5.30%
Bonds/Fixed Income	45%	0.75%
Unallocated Cash	5%	0.00%
Total	100%	

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the actual cash flows that took place during the performance period. 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 2017
General Employees Fund	15.23%
Police and Fire Fund	15.22%
Correctional Fund	15.22%
Volunteer Firefighter Fund	10.31%

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 three to ten years for furniture and equipment, and forty years for the building. PERA's threshold for intangible assets is $1,000,000. PERA did not have any intangible assets in fiscal year 2017.

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, 2017, is $970,182. Of this, $107,720 is considered a short-term liability and $862,462 is considered a long-term liability. The total increased by $84,016 during fiscal year 2017.

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; and
- 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 SBI's assumptions about the inputs that market participants would use in pricing an asset or liability. Assets classified as 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 has been determined using the March 31, 2017, 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 20 investments that are valued at NAV that are currently in the liquidation mode, totaling 1.0% of the NAV value. The majority of the remaining value of investments in liquidation mode will be returned to 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 $2,667,103,706.

Explanations of investment types follow **Figure 5.**

Figure 5: Fair Value of PERA Investments (in thousands)

As of June 30, 2017

Equity Investments	Fair Value	Level 1	Level 2	Level 3
Common Stock	$17,622,856	$17,535,112	$74,583	$13,161
Real Estate Investment Trust	555,109	554,647	0	462
Other Equity	581,232	436,091	39,781	105,360
Equity Total	$18,759,197	$18,525,850	$114,364	$118,983
Fixed Income Investments				
Government Issues	$3,358,032	$0	$3,344,023	$14,009
Corporate Bonds	1,986,331	0	1,986,331	0
Mortgage-Backed Securities	387,745	0	381,731	6,014
Asset-Backed Securities	261,714	0	254,300	7,414
Other Debt Instruments	14,687	0	14,687	0
Fixed Income Total	$6,008,509	$0	$5,981,072	$27,437
Investment Derivatives - Options	$213	$213	$0	$0
Total Investments by Fair Value	$24,767,919	$18,526,063	$6,095,436	$146,420

Investments Measured at the Net Asset Value (in thousands)	NAV	Percent of NAV	Number of Investments	Unfunded Commitments
Private Equity	$2,269,678	61%	122	$1,794,640
Real Estate	249,491	7%	17	216,097
Resource	845,796	23%	33	321,658
Yield Oriented	323,596	9%	30	334,708
NAV total	$3,688,561	100%		$2,667,103

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% of earned income is distributed and that the various investors are not treated differently.

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

Fixed Income Investments

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

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.

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.

Government Issue: Securities or bonds issued by any of the fifty states, the territories and their subdivisions, 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.

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

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.

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.

Resource Funds: The strategy for resource investments is to establish and maintain a portfolio of resource investment vehicles that provide an inflation hedge and additional diversification. Resource investments will include oil and gas investments and energy service industry investments that are diversified by geographic area as well as by type.

Yield Oriented: The strategy for yield-oriented 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.

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 2017, 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. Agencies securities consist of implicitly guaranteed investments of the U.S. Government (of which only 8 percent are rated and 92 percent are unrated), including the Federal Home Loan Bank, Federal National Mortgage Association (Fannie Mae), Federal home Loan Mortgage Corporation (Freddie Mac), Financing Corporation (FICO), Federal Farm Credit Banks, and Federal Agricultural mortgage Corporation (Farmer Mac); SLM Corporation (Sallie Mae).

Figure 6: Credit Risk Exposure (in thousands)

Quality Rating	Fair Value as of June 30, 2017
AAA	$308,921
AA	190,784
A	317,556
BBB	1,027,147
BB	600,369
B	60,160
CCC	15,242
CC	12,720
C	3,245
D	3,470
Unrated Agencies	1,548,842
Unrated Other	1,399,526
U.S. Government	1,606,623
Total	$7,094,605

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. 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% 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. Retirement plan and OPEB 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	0.29
Asset-Backed Securities	2.80
Agency Securities	5.25
Mortgage-Backed Securities	5.05
Collateralized Mortgage Obligations	5.34
Commericial Mortgage-Backed Securities	4.22
Yankee Bonds	7.75
Corporate Debt Obligations	8.97
U.S. Treasuries	9.49
Municipal Debt Obligations	16.50
Foreign Country Bonds	17.75

Financial Section

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 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, 2017, 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	$4,296	$1,709,658	$368
Japanese Yen	6,291	989,407	10,190
Pound Sterling	9,917	756,429	9,936
Hong Kong Dollar	2,346	407,127	0
Canadian Dollar	4,076	380,804	216
Swiss Franc	362	342,004	0
Australian Dollar	3,939	280,235	0
South Korean Won	0	198,054	0
New Taiwan Dollar	0	146,434	0
Swedish Krona	0	115,854	0
Danish Krone	65	91,568	0
Brazilian Real	25	70,928	0
South African Rand	50	67,849	0
Indian Rupee	190	63,836	0
Singapore Dollar	742	52,296	0
Mexican Peso	478	41,693	0
Indonesian Rupiah	13	40,829	0
Norwegian Krone	58	34,995	0
Malaysian Ringgit	111	26,723	0
Thailand Baht	0	26,144	0
Polish Zloty	4	18,513	0
Turkish Lira	21	17,971	0
Philippine Peso	1	17,181	0
Other	114	61,303	0
Total	**$33,099**	**$5,957,835**	**$20,710**

G) Derivative Financial Instruments

On behalf of PERA, 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 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's derivative activity is to equitize cash in the portfolio, to adjust the duration of the portfolio, or to offset current futures positions.

Explanations of each derivative instrument type are presented below. The fair value balances and notional amounts (or face value) at June 30, 2017, classified by derivative instrument type (e.g., futures, options, currency forwards, and stock warrants and rights), and the changes in fair value for fiscal year 2017 are shown in **Figure 9**.

Figure 9: Derivative Financial Instruments (in thousands)

Derivative Investment Type	Changes in Fair Value During Fiscal Year 2017	Fair Value at June 30, 2017	Notional Amount
Futures:			
Equity Futures--Long	$30,476	$0	$1,913
Equity Futures--Short	(2,530)	0	(34)
Fixed Income Futures--Long	(4,186)	0	308,507
Fixed Income Futures--Short	15,240	0	(490,528)
Options:			
Futures Options Bought	(1,979)	284	1,200
Futures Options Written	2,501	(71)	(610)
Foreign Currency Forwards	1,642	(532)	167,578
Stock Warrants and Rights:			
Stock Warrants	98	1,577	12
Stock Rights	517	261	433

Derivative Investment Type

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 a longer term before expiration, e.g. five years or more. 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.

SBI maintains a fully benefit-responsive synthetic guaranteed investment contract for the Supplemental Investment Fund - Fixed Interest Account. The investment objective of the Fixed Interest Account is to protect investors from loss of their original investment and to provide a competitive interest rate. On June 30, 2017, the Fixed Interest Account portfolio of well-diversified high quality investment grade fixed income securities had a fair value of $1,486,261,625 that is $11,892,076 in excess of the value protected by the wrap contract. The Fixed Income Account also includes liquid investment pools with a combined fair value of $90,940,928.

SBI is exposed to credit risk through the counterparties in foreign currency forward contracts used to offset the currency risk of a security. PERA's proportionate share of the maximum loss that SBI would have recognized as of June 30, 2017, if all counterparties failed to perform as contracted is $1,010,970.

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, via a Securities Lending Authorization Agreement, authorized State Street Bank and Trust Company to lend its securities to broker-dealers and banks pursuant to a form of loan agreement.

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 did not have the ability to pledge or sell collateral securities 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 borrower 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, 2017, the investment pool had an average duration of 13.08 days and an average weighted final maturity of 115.06 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, 2017, SBI had no credit risk exposure to borrowers. The market value of the collateral held and the fair value of securities on loan from the SBI as of June 30, 2017, was $6,581,171,343 and $6,291,248,420 respectively. Cash collateral of $2,971,810,000 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, 2017, *Statement of Fiduciary Net Position* at historical cost, net of accumulated depreciation, as summarized in **Figure 10**. There were no significant leases as of June 30, 2017.

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%. PERA's share of the cost to purchase the 4.3 acres of land was $170,308.

Figure 10: Capital Assets (in thousands)

	Balance June 30, 2016	Additions	Disposals	Balance June 30, 2017
Capital Assets, Not Being Depreciated:				
Land	$170	$0	$0	$170
Capital Assets, Being Depreciated:				
Building	10,893	0	0	10,893
Equipment, Furniture & Fixtures	1,110	54	0	1,164
Total Capital Assets Being Depreciated	**$12,003**	**$54**	**$0**	**$12,057**
Less Accumulated Depreciation for:				
Building	(4,129)	(281)	0	(4,410)
Equipment, Furniture & Fixtures	(790)	(121)	0	(911)
Total Accumulated Depreciation	**$(4,919)**	**$(402)**	**$0**	**$(5,321)**
Total Capital Assets, Net of Accumulated Depreciation	**$7,254**	**$(348)**	**$0**	**$6,906**

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 11 shows the debt service amounts for which PERA is directly responsible. Pursuant to the joint and several liability clause 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 $15,567,200. 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, 2017, the premium balance as of June 30, 2017, and interest accrued for the month of June.

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 12**. Contribution rates in the General Employees Plan are not sufficient to fully fund the plan by the full funding date of 2033. Contribution rates in the Police and Fire are not sufficient to fully fund the plan by the full funding date of 2043. Contribution rates in the Correctional Plan are not sufficient to fully fund the plan by the full funding dates

Figure 11: Debt Repayment Schedule by Fiscal Year

Fiscal Year	PERA Principal	Interest	Premium	Total
2018	624,150	83,062	51,879	759,091
2019	642,400	72,713	49,745	764,858
2020	651,525	62,062	47,548	761,135
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	17,217	24,319	714,961
2025	365,000	6,052	8,548	379,600
Totals	**$5,009,625**	**$361,326**	**$311,077**	**$5,682,028**

Total Unpaid Principal, 06/30/17	$5,009,625
Total Unpaid Premium, 06/30/17	311,077
Accrued Interest, June 2017	6,922
Total Bonds Payable on Financial Statements	**$5,327,624**

Figure 12: Retirement Plan Contribution Rates

	Member	Employer
General Employees Fund		
-Basic Plan	9.10%	11.78%
-Coordinated Plan	6.50%	7.50%
-MERF Plan	9.75%	9.75%
Police and Fire Fund	10.80%	16.20%
Correctional Fund	5.83%	8.75%

of 2038. The actuarially required contributions are expressed as a level percentage of covered payroll and are determined using an individual entry-age actuarial cost method.

The State of Minnesota was also required to begin contributing $9 million to the Police and Fire Fund each year, beginning in fiscal year 2014. That state aid continues until that fund is 90 percent funded, or the State Patrol Plan, administered by the Minnesota State Retirement System, is 90 percent funded, whichever occurs later.

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. In fiscal year 2017, the State of Minnesota contributed $6 million and the MERF employers contributed an additional $31 million to the General Employees Fund. In fiscal years 2018 and 2019, the state will contribute $16 million and the MERF employers will contribute $21 million to the fund. Thereafter, the state will contribute $6 million and MERF's employers will contribute $31 million through calendar year 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 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.

NOTE 6
Net Pension Liability of Employers and Nonemployer Contributing Entity

The components of the net pension liability of the defined benefit cost-sharing plans for participating employers and the State of Minnesota (a nonemployer contributing entity in the General Employees Fund) as of June 30, 2017, calculated in accordance with GASB Statement No. 67, are shown in **Figure 13**.

Figure 13: NPL Components (in thousands)

	General Employees Fund	Police and Fire Fund	Correctional Fund
Total Pension Liability (A)	$26,484,513	$9,268,998	$887,461
Fund Fiduciary Net Position (B)	(20,100,579)	(7,918,879)	(602,460)
Net Pension Liability (A-B)	$6,383,934	$1,350,119	$285,001
Fund Fiduciary Net Position as a Percentage of the Total Pension Liability (B/A)	75.9%	85.4%	67.9%

A) Actuarial Methods and Assumptions

The total pension liability for each of the defined benefit cost-sharing plans was determined by an actuarial valuation as of June 30, 2017, using the entry age normal actuarial cost method. A closed amortization period is used, with 17 years remaining for the General Employees Plan, 15 years remaining for the Correctional Plan and 25 years remaining for the Police and Fire Plan. Inflation is assumed to be 2.50 percent. Salary growth assumptions in the General Employees Plan decrease in annual increments from 11.25 percent after one year of service, to 3.25 percent after 26 years of service. In the Police and Fire Plan, salary growth assumptions decrease 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 decrease from 8.50 percent at age 20 to 3.50 percent at age 65. Mortality rates for all 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 to six years. The most recent four-year experience study for the General Employees Plan was completed in 2015. The most recent five-year experience study for the Police and Fire Plan was completed in 2016. Experience studies have not been prepared for PERA's other plans, but assumptions are reviewed annually. Economic assumptions were updated in 2014 based on a review of inflation and investment return assumptions.

B) Discount Rate

The discount rate used to measure the total pension liability in 2017 was 7.50 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 Statute*. Based on these assumptions, the fiduciary net positions of the General Employees Fund and the Police and Fire 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.

In the Correctional Fund, the fiduciary net position was projected to be available to make all projected future benefit payments of current plan members through June 30, 2061. Beginning in fiscal years ended June 30, 2062, when projected benefit payments exceed the funds' projected fiduciary net position, benefit payments were discounted at the municipal bond rate of 3.56 percent based on an index of 20-year general obligation bonds with an average AA credit rating at the measurement date. An equivalent single discount rate of 5.96 percent for the Correctional Fund was determined that produced approximately the same present value of projected benefits when applied to all years of projected benefits as the present value of projected benefits using 7.50 percent applied to all years of projected benefits through the point of asset depletion and 3.56 percent after.

C) Sensitivity Analysis

Figure 14 presents the net pension liability of employers and the State of Minnesota for PERA's defined benefit cost-sharing plans as of June 30, 2017, 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 1percent lower and 1 percent higher than the current rate.

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 plan. Thirty fire departments joined the plan in fiscal year 2017, bringing the total number of fire departments in the Volunteer Firefighter Plan to 142. The amount of assets transferred, $14,206,576, is shown as an "Other Addition" in PERA's 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 12. Total covered payroll for PERA employees during fiscal year 2017 was approximately $6.4 million.

Employer pension contributions for PERA employees for the fiscal years ending June 30, 2017, 2016, and 2015 were $481,841, $460,443, and $426,221 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.

Figure 14: 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%	$9,901,956	6.50%	$2,542,668	4.96%	$469,646
Current Discount Rate	7.50%	6,383,934	7.50%	1,350,119	5.96%	285,001
1% Increase	8.50%	3,503,794	8.50%	365,604	6.96%	140,883

Schedule of Changes in Net Pension Liabilities and Related Ratios*

Required Supplementary Information (unaudited, in thousands)

General Employees Fund

	Fiscal Year			
	2017	2016	2015	2014
Total Pension Liability				
Service Cost	$471,706	$434,551	$421,602	$388,391
Interest on the Total Pension Liability	1,921,869	1,839,388	1,712,534	1,591,756
Change of Benefit Terms	0	0	1,147,198	0
Difference between Expected and Actual Experience	280,527	(647,197)	(348,383)	96,123
Assumption Changes	(853,320)	2,119,742	0	645,499
Benefit Payments	(1,413,448)	(1,359,176)	(1,235,303)	(1,109,866)
Refund Payments	(37,234)	(37,209)	(35,655)	(38,264)
Net Change in Total Pension Liability	$370,100	$2,350,099	$1,661,993	$1,573,639
Total Pension Liability--Beginning	26,114,413	$23,764,314	$22,102,321	$20,528,682
Total Pension Liability--Ending (a)	$26,484,513	$26,114,413	$23,764,314	$22,102,321
Plan Fiduciary Net Position				
Contributions--Employer	$477,888	$459,978	$435,115	$382,251
Contributions--Member	400,204	375,291	353,765	334,495
Contributions--Nonemployer Contributing Entity	6,000	6,000	0	0
Net Investment Income	2,682,901	(20,851)	777,504	2,760,854
Benefit Payments	(1,413,448)	(1,359,176)	(1,235,303)	(1,109,866)
Refund Payments	(37,234)	(37,209)	(35,655)	(38,264)
Administrative Expenses	(11,292)	(11,350)	(10,367)	(9,861)
Other	411**	671**	891,914	605
Net Change in Plan Fiduciary Net Position	$2,105,670	$(586,646)	$1,176,973	$2,320,214
Plan Fiduciary Net Position--Beginning	17,995,149	18,581,795	17,404,822	15,084,608
Plan Fiduciary Net Position--Ending (b)	$20,100,579	$17,995,149	$18,581,795	$17,404,822
Net Pension Liability (a)-(b)	$6,383,934	$8,119,504	$5,182,519	$4,697,499
Plan Fiduciary Net Position as a Percentage of Total Pension Liability (b)/(a)	75.90%	68.91%	78.19%	78.75%
Covered-Employee Payroll	$6,156,985	$5,773,708	$5,549,255	$5,351,920
Net Pension Liability as a Percentage of Covered Employee Payroll	103.69%	140.63%	93.39%	87.77%

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

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

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

General Employees Fund

The following changes in actuarial assumptions and plan provisions used to calculate the net pension liability in a few cases may be different than the actuarial assumptions and plan provisions used for funding valuations.

2017 Changes

Changes in Actuarial Assumptions:

- The Combined Service Annuity (CSA) loads were changed from 0.8 percent for active members and 60 percent for vested and non-vested deferred members. The revised CSA loads are now 0.0 percent for active member liability, 15.0 percent for vested deferred member liability, and 3.0 percent for non-vested deferred member liability.
- The assumed post-retirement benefit increase rate was changed from 1.0 percent per year for all years to 1.0 percent per year through 2044 and 2.5 percent per year thereafter.

2016 Changes

Changes in Actuarial Assumptions:

- The assumed post-retirement benefit increase rate was changed from 1.0 percent per year through 2035 and 2.5 percent per year thereafter to 1.0 percent per year for all 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 7.5 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 2.5 percent for inflation.

2015 Changes:

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.

Changes in Actuarial Assumptions:

- The assumed post-retirement benefit increase rate was changed from 1.0 percent per year through 2030 and 2.5 percent per year thereafter to 1.0 percent per year through 2035 and 2.5 percent per year thereafter.

Continued

Schedule of Changes in Net Pension Liabilities and Related Ratios*

Required Supplementary Information (unaudited, in thousands)

Police and Fire Fund

	Fiscal Year			
	2017	2016	2015	2014
Total Pension Liability				
Service Cost	$318,401	$194,352	$187,959	$169,124
Interest on the Total Pension Liability	616,740	658,198	648,233	598,165
Change of Benefit Terms	0	0	0	0
Difference between Expected and Actual Experience	37,292	(375,575)	(221,112)	1,813
Assumption Changes	(2,300,201)	2,650,350	0	323,945
Benefit Payments	(512,379)	(498,608)	(481,330)	(452,462)
Refund Payments	(2,119)	(2,391)	(1,953)	(1,633)
Net Change in Total Pension Liability	$(1,842,266)	$2,626,326	$131,797	$638,952
Total Pension Liability--Beginning	11,111,264	8,484,938	8,353,141	7,714,189
Total Pension Liability--Ending (a)	$9,268,998	$11,111,264	$8,484,938	$8,353,141
Plan Fiduciary Net Position				
Contributions--Employer	$166,329	$156,065	$144,317	$132,632
Contributions--Member	101,984	95,172	88,733	81,213
Contributions--Nonemployer Contributing Entity	9,000	9,000	9,000	9,000
Net Investment Income	1,058,942	(8,949)	317,556	1,158,389
Benefit Payments	(512,379)	(498,608)	(481,330)	(452,462)
Refund Payments	(2,119)	(2,391)	(1,953)	(1,633)
Administrative Expenses	(992)	(906)	(803)	(798)
Other	24	3	84	18
Net Change in Plan Fiduciary Net Position	$820,789	$(250,614)	$75,604	$926,359
Plan Fiduciary Net Position--Beginning	7,098,090	7,348,704	7,273,100	6,346,741
Plan Fiduciary Net Position--Ending (b)	$7,918,879	$7,098,090	$7,348,704	$7,273,100
Net Pension Liability (a)-(b)	$1,350,119	$4,013,174	$1,136,234	$1,080,041
Plan Fiduciary Net Position as a Percentage of Total Pension Liability (b)/(a)	85.43%	63.88%	86.61%	87.07%
Covered-Employee Payroll	$944,296	$881,222	%845,076	$820,333
Net Pension Liability as a Percentage of Covered Employee Payroll	142.98%	455.41%	134.45%	131.66%

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

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

Police and Fire Fund

The following changes in actuarial assumptions and plan provisions used to calculate the net pension liability in a few cases may be different than the actuarial assumptions and plan provisions used for funding valuations.

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 3.0 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 post-retirement benefit increase rate was changed from 1.00 percent for all years to 1.00 percent per year through 2064 and 2.50 percent thereafter.

2016 Changes
Changes in Actuarial Assumptions:

- The assumed post-retirement benefit increase rate was changed from 1.0 percent per year through 2037 and 2.5 percent per year thereafter to 1.0 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.

2015 Changes
Changes in Plan Provisions:

- The post-retirement 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.

Changes in Actuarial Assumptions:

- The assumed post-retirement benefit increase rate was changed from 1.0 percent per year through 2030 and 2.5 percent per year thereafter to 1.0 percent per year through 2037 and 2.5 percent per year thereafter.

Schedule of Changes in Net Pension Liabilities and Related Ratios*

Required Supplementary Information (unaudited, in thousands)

Correctional Fund

	Fiscal Year			
	2017	2016	2015	2014
Total Pension Liability				
Service Cost	$49,202	$25,950	$25,098	$26,488
Interest on the Total Pension Liability	47,336	40,605	37,043	33,955
Change of Benefit Terms	0	0	0	0
Difference between Expected and Actual Experience	(3,516)	382	(7,892)	(5,327)
Assumption Changes	(66,147)	310,332	0	(34,168)
Benefit Payments	(11,033)	(9,381)	(7,777)	(6,711)
Refund Payments	(1,478)	(982)	(1,057)	(1,105)
Net Change in Total Pension Liability	$14,364	$366,906	$45,415	$13,132
Total Pension Liability--Beginning	873,097	506,191	460,776	447,644
Total Pension Liability--Ending (a)	$887,461	$873,097	$506,191	$460,776
Plan Fiduciary Net Position				
Contributions--Employer	$17,489	$16,490	$15,736	$15,054
Contributions--Member	11,666	11,008	10,472	10,030
Contributions--Nonemployer Contributing Entity	0	0	0	0
Net Investment Income	78,363	209	20,373	69,451
Benefit Payments	(11,033)	(9,381)	(7,777)	(6,711)
Refund Payments	(1,478)	(982)	(1,057)	(1,105)
Administrative Expenses	(330)	(290)	(247)	(236)
Other	0	(2)	(1)	(1)
Net Change in Plan Fiduciary Net Position	$94,677	$17,052	$37,499	$86,482
Plan Fiduciary Net Position--Beginning	507,783	490,731	453,232	366,750
Plan Fiduciary Net Position--Ending (b)	$602,460	$507,783	$490,731	$453,232
Net Pension Liability (a)-(b)	$285,001	$365,314	$15,460	$ 7,544
Plan Fiduciary Net Position as a Percentage of Total Pension Liability (b)/(a)	67.89%	58.16%	96.95%	98.36%
Covered-Employee Payroll	$200,103	$188,816	$179,623	$172,041
Net Pension Liability as a Percentage of Covered Employee Payroll	142.43%	193.48%	8.61%	4.39%

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

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

Correctional Fund

The following changes in actuarial assumptions and plan provisions used to calculate the net pension liability in a few cases may be different than the actuarial assumptions and plan provisions used for funding valuations.

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 percent for vested and non-vested, deferred members. The CSA has been changed to 35 percent for vested members and 1 percent for non-vested members.

- The Single Discount Rate was changed from 5.31 percent per annum to 5.96 percent per annum.

2016 Changes

Changes in Actuarial Assumptions:

- The assumed investment return was changed from 7.9 percent to 7.5 percent. The single discount rate changed from 7.9 percent to 5.31 percent.

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

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)
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%
2010	443,548	342,678	342,678	100,870	4,804,627	7.13%
2009	381,151	328,603	328,603	52,548	4,778,708	6.88%
2008	374,522	303,304	303,304	71,218	4,722,432	6.42%

Notes to Schedule of Contributions

Required Supplementary Information

Methods and Assumptions

The following methods and assumptions are used to calculate actuarially determined contributions and are, in a few cases, different from the methods and assumptions used to calculate the net pension liability in accordance with Governmental Accounting Standards Board requirements.

Valuation Date:	June 30, 2017
Actuarial Cost Method:	Entry age normal
Amortization Method:	Level percentage of payroll, closed
Remaining Amortization Period:	17 years
Asset Valuation Method:	5-year smoothed market, no corridor
Inflation:	2.75%
Payroll Growth Rate:	3.50%
Salary Increases:	3.5% to 11.5%, including inflation
Investment Rate of Return:	8.00%
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 - 2015
Mortality:	RP-2014 annuitant generational mortality table, projected with scale MP-2015 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 2.5% post retirement benefit increase beginning January 1, 2053.

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)
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%
2010	150,220	107,066	107,066	43,154	740,101	14.47%
2009	140,591	101,548	101,548	39,043	733,164	13.85%
2008	144,548	87,023	87,023	57,525	703,701	12.37%

Notes to Schedule of Contributions

Required Supplementary Information

Methods and Assumptions

The following methods and assumptions are used to calculate actuarially determined contributions and are, in a few cases, different from the methods and assumptions used to calculate the net pension liability in accordance with Governmental Accounting Standards Board requirements.

Valuation Date:	June 30, 2017
Actuarial Cost Method:	Entry age normal
Amortization Method:	Level percentage of payroll, closed
Remaining Amortization Period:	25 years
Asset Valuation Method:	5-year smoothed market, no corridor
Inflation:	2.75%
Payroll Growth Rate:	3.50%
Salary Increases:	4.25% to 12.75%, including inflation
Investment Rate of Return:	8.00%
Retirement Age:	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2011 valuation pursuant to an experience study of the period 2004 - 2009 prepared by a former actuary.
Mortality:	RP-2000 employee and annuitant generational mortality table, projected with scale AA, white collar adjustment.
Cost of Living Increase:	The plan is assumed to pay a 2.5% post retirement benefit increase beginning January 1, 2051.

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)
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%
2010	12,273	14,170	14,170	(1,897)	154,777	9.16%
2009	11,469	14,124	14,124	(2,655)	154,650	9.13%
2008	10,153	13,388	13,388	(3,235)	154,202	8.68%

Notes to Schedule of Contributions

Required Supplementary Information

Methods and Assumptions

The following methods and assumptions are used to calculate actuarially determined contributions and are, in a few cases, different from the methods and assumptions used to calculate the net pension liability in accordance with Governmental Accounting Standards Board requirements.

Valuation Date:	June 30, 2017
Actuarial Cost Method:	Entry age normal
Amortization Method:	Level percentage of payroll, closed
Remaining Amortization Period:	15 years
Asset Valuation Method:	5-year smoothed market, no corridor
Inflation:	2.75%
Payroll Growth Rate:	3.50%
Salary Increases:	3.75% to 8.75%, including inflation
Investment Rate of Return:	8.00%
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-2000 annuitant generational mortality table, projected with scale AA, white collar adjustment.
Cost of Living Increase:	The plan is assumed to pay a 2.5% post retirement benefit for all years.

Schedule of Investment Returns*

Required Supplementary Information (unaudited)

Year	General Employees Fund	Police and Fire Fund	Correctional Fund	Volunteer Firefighter Fund
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 pension expense.

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, 2017 (in thousands)

	Beginning Balance 07/01/2016	Additions	Deductions	Ending Balance 06/30/2017
ASSETS				
Cash	$816	$42,136	$42,080	$872
Investments				
Bond Pool	94,807	16,916	5,887	105,836
Index Stock Pool	391,456	82,413	21,046	452,823
Money Market	16,983	1,248	1,730	16,501
Total Assets	**$504,062**	**$142,713**	**$70,743**	**$576,032**
LIABILITIES				
Accounts Payable	$504,062	$142,713	$70,743	$576,032
Total Liabilities	**$504,062**	**$142,713**	**$70,743**	**$576,032**

Schedule of Investment Expenses

For the Fiscal Year Ended June 30, 2017 (in thousands)

Source of Expenses	General Employees Fund	Police and Fire Fund	Correctional Fund	Volunteer Firefighter Fund	Defined Contribution Fund	Total
Outside Money Managers–Equities	$15,781	$6,230	$462	$23	$24	$22,520
Outside Money Managers–Fixed Income	3,603	1,423	105	28	23	5,182
Minnesota State Board of Investment	1,146	452	34	92	4	1,728
Callan Investment	167	66	5	0	0	238
QED Consulting	94	37	3	0	0	134
Other Investment Fees	0	0	0	91	3	94
Pension Consulting Alliance	31	12	1	0	0	44
Total	$20,822	$8,220	$610	$234	$54	$29,940

A *Schedule of Investment Fees* 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, 2017 (in thousands)

Individual or Firm Name	Fee Paid	
Actuary		
Gabriel Roeder Smith & Co.	$253	**$253**
Financial Services		
Abdo Eick & Meyers LLP	$145	
MMB / OLA Audit Fees	94	
SVF Audit Fees	84	**$323**
Legal		
Attorney General	$28	**$28**
Management Consultants		
Berwyn Group	$8	
Other	5	**$13**
Medical Evaluations		
MMRO	$424	
Office of Administrative Hearings	14	**$438**
Total Professional Service Fees		**$1,055**

Schedule of Administrative Expenses

For the Fiscal Year Ended June 30, 2017 (in thousands)

Personal Services		
Staff Salaries	$8,595	
Part-Time, Seasonal Labor	136	
Other Benefits	234	
Total Personal Services		**$8,965**
Professional Services		
Actuary	$253	
Financial	323	
Legal	28	
Management Consultants	13	
Medical Evaluations	438	
Total Professional Services		**$1,055**
Communications		
Mail and Telephone Services	$592	
Printing and Publications	134	
Total Communication		**$726**
Office Building and Maintenance		
Building	$475	
Depreciation—Building	270	
Bond Interest	92	
Total Building and Maintenance		**$837**
Other		
Depreciation—Equipment	$132	
Employee Development	194	
Equipment Maintenance	263	
Indirect Costs	63	
Operating Costs	77	
Supplies and Materials	411	
Travel	89	
Total Other		**$1,229**
Total Administrative Expenses		**$12,812**

Allocation of Administrative Expenses

Defined Benefit Plans		
General Employees Fund	$11,292	
Police and Fire Fund	992	
Correctional Fund	330	
Volunteer Firefighter Fund	61	
Defined Contribution Plans		
Defined Contribution Fund	137	
Total Administrative Expenses		**$12,812**

Investment Section

PERA 2017 Comprehensive Annual Financial Report

Performance

Achievement in changing times

A conservator adds fine shading details to the hand of a figure in the mural "Contemplative Spirit of the East" which is located above the East Grand Stairs. Art experts repaired and cleaned the murals inside, sometimes using cotton swabs to do their delicate work. Other work of the restoration project included more than 20,000 repairs to the stone work outside using 6,000 pieces of Georgia marble harvested from the same quarry as the original 1905 stone, expanding meeting spaces for the public by 40,000 square feet and replacing aging mechanical systems.

Photo courtesy MN Dept. of Admin. Cathy Klima photographer

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MINNESOTA STATE BOARD OF INVESTMENT

Board Members

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State Auditor
Rebecca Otto

Secretary of State
Steve Simon

Attorney General
Lori Swanson

Executive Director & Chief Investment Officer

Mansco Perry

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An Equal Opportunity Employer

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 2015 Legislature reduced the interest rate actuarial assumption for PERA to a single rate of 8%.

Continued

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 asset allocation for the Combined Funds as follows:

• Public Equity	58%
• Domestic Bonds	20%
• Private Markets	20%
• Cash	2%

Based on values on June 30, 2017, the Combined Funds returned 5.1 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 10th percentile over the past five years and in the 19th percentile over the past 10 years, compared to similar funds 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
Executive Director
Minnesota State Board of Investment
November 17, 2017

Investment Results

Fund Performance

Fund	FY 2017	3-Year	5-Year	10-Year	20-Year
	Rates of Return (Annualized)				
Combined Funds (Active/Retiree)*	15.1%	6.3%	10.2%	6.2%	7.2%
Combined Composite Market Index	14.4%	6.3%	9.9%	6.0%	7.0%

* Percentages are net of all management fees.

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

Domestic Stocks—Russell 3000 measures the performance of the largest 3,000 US companies based on total market capitalization.

International Stocks—Morgan Stanley Capital International All Country World Index measures equity market performance in the global developed and emerging markets other than the United States.

Bonds—Bloomberg Barclays U.S. Aggregate Bond Index reflects the performance of the broad bond market for investment grade (Baa or higher) bonds, US Treasury and agency securities, and mortgage obligations with maturities greater than one year.

Investment Returns by Sector

Performance of Asset Pools (Net of Fees)

	FY 2017	3-Year	5-Year	10-Year	20-Year
	Rates of Return (Annualized)				
Domestic Stock Pool	19.4%	8.7%	14.5%	7.1%	7.1%
Russell 3000	18.5%	9.1%	14.6%	7.3%	7.2%
Bond Pool	0.9%	2.9%	2.9%	4.9%	5.6%
Bloomberg Barclays Aggregate	0.3%	2.5%	2.2%	4.5%	5.2%
International Stock Pool	20.2%	1.5%	8.0%	1.6%	4.9%
MSCI ACWI ex US	20.5%	0.8%	7.2%	1.2%	4.5%
Alternative Investments	19.7%	8.9%	11.3%	9.0%	13.3%
Real Estate Pool	7.8%	11.8%	12.3%	4.7%	10.0%
Private Equity Pool	18.7%	12.6%	14.1%	10.9%	14.0%
Resource Pool	27.3%	-4.7%	1.7%	6.9%	15.1%
Private Credit Pool	20.0%	14.4%	14.6%	11.1%	13.2%

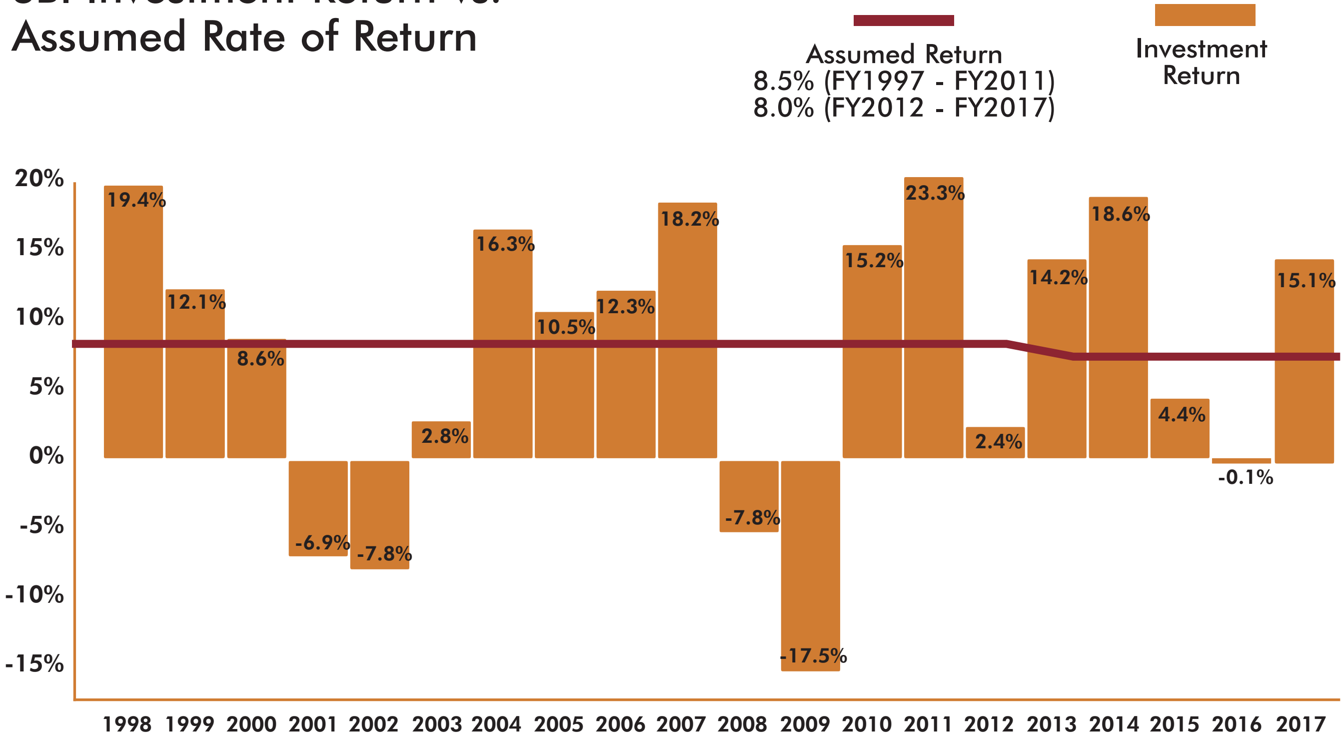
Note: Investment returns were calculated using a time-weighted rate of return.

Continued

Investment Results

(continued from previous page)

SBI Investment Return vs. Assumed Rate of Return



The State Board of Investment (SBI) has exceeded its assumed rate of return 12 of the past 20 years. Over those 20 years, the SBI has had annualized investment earnings of 7.2%.

TUCS Ranking

Percentage Ranking: 1 Year — 7th 3 Year — 18th 5 Year — 10th 10 year — 19th

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

Asset Allocation

As of June 30, 2017

Investment Type	Combined Funds	
	Actual Asset Mix	Long-term Policy Target
Domestic Stocks	46.4%	39.0%
International Stocks	14.0%	19.0%
Bonds	19.4%	20.0%
Alternative Assets*	13.1%	20.0%
Cash	2.6%	2.0%
Total	100%	100%

* Alternative assets include real estate, private equity (venture capital), resource (oil, gas, etc.), and yield (debt) oriented funds.

List of Largest Assets Held

June 30, 2017

Top Ten Equity Holdings (By Fair Value)

Security	Fair Value (In millions)	% of Portfolio
Apple Inc.	$332.04	1.16%
Microsoft Corporation	230.75	0.80%
Amazon.com Inc.	197.02	0.69%
Facebook Inc.	181.18	0.63%
Johnson & Johnson	163.88	0.57%
JP Morgan Chase & Co.	150.28	0.52%
Exxon Mobil Corporation	148.70	0.52%
Alphabet Inc. Class A Shares	141.95	0.49%
Berkshire Hathaway Inc.	138.85	0.48%
Alphabet Inc. Class C Shares	126.24	0.44%

Top Ten Fixed Income Holdings (By Fair Value)

Security	Fair Value (In millions)	% of Portfolio	Maturity Date	Coupon %
Fannie Mae To Be Announced 30 Year Bond	$120.92	0.42%	07/25/2046	3.500%
Fannie Mae To Be Announced 30 Year Bond	75.71	0.26%	08/14/2047	3.000%
U.S. Treasury Bond	72.70	0.25%	11/15/2043	3.750%
U.S. Treasury Note	66.79	0.23%	05/31/2024	2.000%
U.S. Treasury Note	49.38	0.17%	11/15/2025	2.250%
U.S. Treasury Note	48.26	0.17%	06/30/2019	1.250%
U.S. Treasury Note	48.19	0.17%	09/30/2020	1.375%
U.S. Treasury Note	44.47	0.15%	07/31/2018	1.375%
U.S. Treasury Note	35.14	0.12%	08/31/2017	1.875%
U.S. Treasury Note	35.10	0.12%	03/31/2024	2.125%

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 Fiscal Year Ended June 30, 2017 (in thousands)

General Employees Fund

Pooled Accounts

	2017 Beginning Fair Value	2017 Ending Fair Value	Percent of Total Fair Value
U.S. Stock Actively Managed	$5,557,335	$5,359,025	27%
Bond Fund	4,437,241	3,895,018	19%
U.S. Stock Index Fund	2,776,187	3,328,383	17%
Broad International Stock Fund	2,515,673	4,355,316	22%
Alternative Pool	2,300,707	2,635,922	13%
Money Market	365,166	485,110	2%
Total Pooled Accounts	**$17,952,309**	**$20,058,774**	**100%**

Police and Fire Fund

Pooled Accounts

	2017 Beginning Fair Value	2017 Ending Fair Value	Percent of Total Fair Value
U.S. Stock Actively Managed	$2,193,697	$2,112,351	27%
Bond Fund	1,751,552	1,535,288	19%
U.S. Stock Index Fund	1,095,869	1,311,939	17%
Broad International Stock Fund	993,035	1,716,722	22%
Alternative Pool	908,179	1,038,994	13%
Money Market	142,997	188,309	2%
Total Pooled Accounts	**$7,085,329**	**$7,903,603**	**100%**

Correctional Fund

Pooled Accounts

	2017 Beginning Fair Value	2017 Ending Fair Value	Percent of Total Fair Value
U.S. Stock Actively Managed	$156,968	$160,652	27%
Bond Fund	125,331	116,764	19%
U.S. Stock Index Fund	78,414	99,778	17%
Broad International Stock Fund	71,056	130,563	22%
Alternative Pool	64,984	79,019	13%
Money Market	10,953	14,956	2%
Total Pooled Accounts	**$507,706**	**$601,732**	**100%**

Volunteer Firefighter Fund

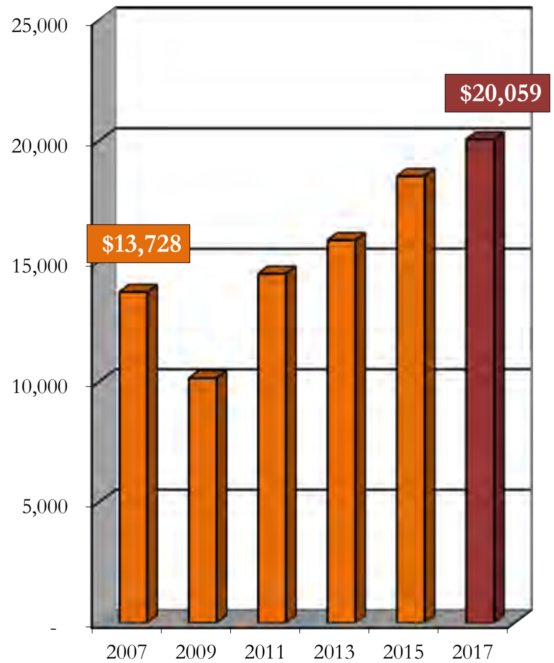
Pooled Accounts

	2017 Beginning Fair Value	2017 Ending Fair Value	Percent of Total Fair Value
Bond Fund	$24,900	$34,052	46%
U.S. Stock Index Fund	19,094	26,597	35%
Broad International Stock Fund	7,843	11,335	15%
Money Market	2,432	3,448	4%
Total Pooled Accounts	**$54,269**	**$75,432**	**100%**

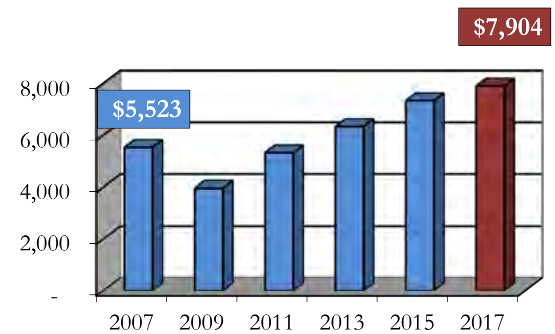
Fair Value of Investments

Last 10 Years (in millions)

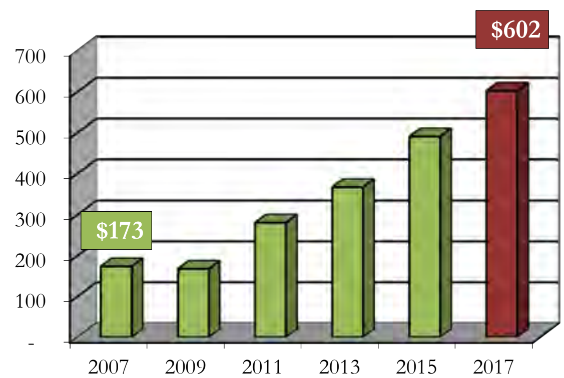
General Employees Fund



Police and Fire Fund



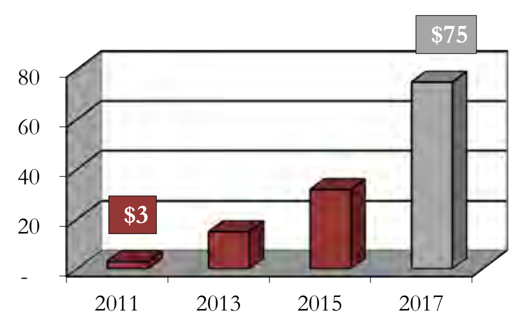
Correctional Fund



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.

Volunteer Firefighter Fund



Schedule of Investment Fees

For Fiscal Year Ended June 30, 2017 (in thousands)

SBI & Consultants:

State Board of Investment	$1,728
Callan Investment	238
QED Consulting	134
Other Investments	94
Pension Consulting Alliance	44
Total	**$2,238**

Outside Money Managers:

Active Domestic Equity:

Barrow Hanley	$415
Earnest Partners	285
Intech Investment	180
Goldman Equity	926
Hotchkis and Wiley	999
Jacobs Levy Equity	88
LSV Asset	775
Martingale	739
McKinley Capital	668
Next Century	(94)
Peregrine Capital	914
Sands Capital	371
Systematic Financial	23
Winslow Capital	318
Zevenbergen Capital	684
Arrowpoint Asset Management LLC	358
Hood River Capital Management LLC	447
Rice Hall James & Associates LLC	380
Wellington Management Company LLP	393
Total	**$8,869**

Passive Domestic Equity:

Blackrock	**$301**

Passive Domestic Equity Large Cap:

Blackrock Passive	**$124**

Semi Passive Equity

Blackrock	$660
Mellon Capital	672
JP Morgan	909
Intech	565
Total	**$2,806**

Global Equity:

Acadian Asset	$726
State Street Emerging	178
AQR Capital Management	728
Capital International	603
Fidelity Investments GPK6	752
Fidelity Investments GPK2	444
JP Morgan Fleming	531
Earnest Partners, LLC	230
Macquarie/Delaware Investments	203
Martin Currie, Inc.	201
Marathon Asset	1,124
McKinley Capital	552
Morgan Stanley Dean Witter	2,206
Neuberger Berman Investment	278
Pzena Investment Management	274
Rock Creek	329
Columbia Investments	516
State Street Alpha	277
State Street	268
Total	**$10,420**

Domestic Bonds:

Columbia Investment	$497
Blackrock Financial	491
Aberdeen Asset Management	278
Dodge & Cox	753
Goldman Sachs	748
Neuberger	316
Pimco	1,438
Western Asset Management	651
Total	**$5,172**

Fixed Interest:

Galliard Capital Management	**$10**

Total Investment Fees	**$29,940**

PERA's assets are commingled in various pooled investment accounts administered by the State Board of Investment. 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 the Minnesota State Board of Investment.

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Actuarial Section

PERA 2017 Comprehensive Annual Financial Report

Value

Blueprint for success

Designed by Cass Gilbert, the 378,825 square-foot building was hailed as one of the country's finest public buildings, and today it still holds the reputation as one of the grandest statehouses in the nation. One of many features include "Progress of the State," the gilded statue of a chariot pulled by four horses — also know as the "Quadriga" —that sits above the building's main entrance. The Capitol is made of 16 kinds of marble from around the world, as well as Minnesotan limestone and granite.

Photo courtesy MN Dept. of Admin. Cathy Klima photographer

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GRS Retirement Consulting

P: 800.521.0498 | F: 763.432.5842 | www.grsconsulting.com

November 16, 2017

Board of Trustees
Public Employees Retirement
Association of Minnesota (PERA)
60 Empire Drive, Suite 200
St. Paul, MN 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, 2017. Reading this Comprehensive Annual Financial Report (CAFR) is not a substitute for reading the actuarial reports. 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.

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 lower than the market value of assets. The funding ratios on that basis are lower and the deficiencies are higher than the market value of assets results.

	Accrued Liability Funding Ratio		Contribution Sufficiency/ (Deficiency) (% of Pay)			Projected Full Funding Date	
Plan	Actuarial Value of Assets	Market Value of Assets	Actuarial Value of Assets	Market Value of Assets	Statutory Amortization Date	Actuarial Value of Assets	Market Value of Assets
General	77.75%	78.47%	(1.58)%	(1.32)%	2033	2041	2040
Police/Fire	85.23%	86.08%	(1.22)%	(0.69)%	2043	*	*
Correctional	94.52%	95.65%	(0.53)%	(0.28)%	2038	*	*

** Based on assumptions and methods described in the valuation report, the funded status of the plan is expected to improve, but is not expected to be 100% funded within 50 years.*

277 Coon Rapids Boulevard | Suite 212 | Coon Rapids, Minnesota 55433-2629

Continued

(continued from previous page)

Board of Trustees
November 16, 2017
Page 2

All of the plans currently have a contribution deficiency. A contribution deficiency means that over the long run, without further changes or favorable actuarial experience, the contributions scheduled to be made to the fund will not meet the goal of full funding 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 a 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 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 actuarial assumption changes were recognized this year in the valuations for funding purposes:

- The assumed post-retirement benefit increase rate was changed from 1.0% through 2052 and 2.5% thereafter to 1.0% per year through 2035 and 2.5% thereafter in the General Plan, and from 1.0% per year through 2050 and 2.5% thereafter to 1.0% per year through 2033 and 2.5% thereafter in the Police and Fire Plan.
- The Combined Service Annuity (CSA) loads were changed as follows:

	General		Police/Fire		Local Correctional	
	Prior	Current	Prior	Current	Prior	Current
Active	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Deferred Vested	60.0%	15.0%	30.0%	33.0%	30.0%	35.0%
Non-Vested Deferred	60.0%	3.0%	30.0%	2.0%	30.0%	1.0%

The following changes were recognized by the Police and Fire and Local Correctional plans:

- The base mortality table for annuitants and employees was changed from RP-2000 to RP-2014, fully generational, with age adjustments. The mortality improvement scale was changed from Scale AA to Scale MP-2016.
- Per Minnesota Statute 356.215, Subd. 11(c), the amortization date was changed from June 30, 2041 to June 30, 2043 for Police and Fire, and was changed from June 30, 2031 to June 30, 2038 for Local Correctional.

Board of Trustees
November 16, 2017
Page 3

In addition, the Police and Fire Plan recognized the following changes:

- Assumed increases in member salaries were changed.
- Assumed rates of retirement were changed.
- Assumed rates of termination were changed.
- The percent married assumption for active female members was changed from 65% to 60%.
- 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.
- Form of payment assumptions were modified.

GRS performed a brief review of the basic financial and membership data provided to us by the association as of June 30, 2017, 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).

In our professional judgement, the statutory discount rate of 8.0% used in this report deviates materially from the guidance set forth in Actuarial Standards of Practice No. 27 (ASOP No. 27). In a 2017 analysis of long-term rate of investment return and inflation assumptions, GRS suggested that an investment return assumption in the range of 6.85% to 7.68% would be reasonable. Please see our letter dated September 11, 2017 for additional information. If a discount rate within the reasonable range were used in this valuation instead of 8.0%, the unfunded liability and contribution deficiency would be higher than shown. Note that estimated results based on a 7.0% discount rate are shown on page five of the valuation report.

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
- Schedule of Changes in Unfunded Actuarial Accrued Liabilities

GRS

Continued

Board of Trustees
November 16, 2017
Page 4

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.

With the exception of the prescribed interest rate assumption, 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

Bonita J. Wurst

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

BBM/BJW:sc

GRS

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Actuarial Section

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 identical to the actuarial assumptions used for funding purposes, there are a few differences. For example, the long-term rate of return on investments is assumed to be 7.5 percent for financial reporting purposes, but is assumed to be 8.0 percent (as set in *Minnesota Statute*) for funding purposes. Also, 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 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 assumptions prescribed are based on the last experience study dated June 30, 2015.

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	8.00% per annum. (2015)
Benefit increases after retirement	1.00% per annum through 2035 and 2.50% per annum thereafter. (2017)
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. (2016)
Inflation	2.75% per year. (2015)
Payroll growth	3.50% per year. (2015)
Mortality rates **Healthy pre-retirement**	RP-2014 Employee Mortality Table, adjusted for white collar and mortality improvements using projection scale MP-2015, from a base year of 2014. Rates are set forward one year for males and set back one year for females. (2016)
Healthy post-retirement	RP-2014 Healthy Annuitant Mortality Table, adjusted for white collar and mortality improvements using projection scale MP-2015, from a base year of 2014. Rates are set forward two years for males. Female rates are multiplied by a factor of 0.90. (2016)
Disabled retirees	RP-2014 Disabled Mortality Table, adjusted for mortality improvements using projection scale MP-2015, from a base year of 2014. Rates are set forward one year for males and set forward six years for females. (2016) 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 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)
Administrative expenses	Prior year administrative expenses expressed as percentage of prior year projected payroll. (1989)

* Year in parenthesis is the date of adoption.

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General Employees Plan

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 benefits	Members receiving deferred annuities (including current 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 two years 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 35% elect 100% Joint & Survivor option Females: 10% elect 25% Joint & Survivor option 10% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 15% 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.

General Employees Plan

Age in 2014	Rate (%)* Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
	Male	Female	Male	Female	Male	Female
20	0.03%	0.01%	0.03%	0.01%	0.06%	0.10%
25	0.04%	0.02%	0.03%	0.01%	0.23%	0.24%
30	0.06%	0.04%	0.03%	0.02%	0.52%	0.46%
35	0.09%	0.07%	0.04%	0.02%	0.89%	0.71%
40	0.14%	0.10%	0.04%	0.03%	1.27%	0.95%
45	0.20%	0.13%	0.07%	0.05%	1.61%	1.17%
50	0.29%	0.18%	0.12%	0.08%	1.93%	1.42%
55	0.42%	0.24%	0.21%	0.13%	2.29%	1.74%
60	0.59%	0.34%	0.36%	0.19%	2.69%	2.16%
65	0.89%	0.56%	0.63%	0.27%	3.22%	2.90%
70	1.47%	0.90%	1.10%	0.46%	4.08%	4.21%

Age	Disability Retirement	
	Male	Female
20	0.01%	0.01%
25	0.01%	0.01%
30	0.01%	0.01%
35	0.03%	0.02%
40	0.05%	0.04%
45	0.08%	0.05%
50	0.15%	0.10%
55	0.34%	0.16%
60	0.53%	0.28%
65	0.00%	0.00%
70	0.00%	0.00%

* 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.

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General Employees Plan

Salary Scale	
Year	**Increase**
1	11.50%
2	8.50%
3	7.00%
4	6.00%
5	5.50%
6	5.20%
7	4.90%
8	4.80%
9	4.70%
10	4.50%
11	4.25%
12	4.10%
13	4.00%
14	3.90%
15	3.90%
16	3.85%
17	3.80%
18	3.75%
19	3.75%
20	3.75%
21	3.75%
22	3.70%
23	3.60%
24	3.60%
25	3.60%
26+	3.50%

	% Withdrawals	
Year	**Male**	**Female**
1	25.00%	25.00%
2	20.00%	20.00%
3	15.00%	15.00%
4	10.00%	11.00%
5	9.00%	10.00%
6	7.00%	9.00%
7	5.50%	7.50%
8	5.00%	6.50%
9	4.50%	5.50%
10	4.00%	5.00%
11	3.25%	4.25%
12	3.00%	4.00%
13	2.75%	3.75%
14	2.50%	3.50%
15	2.50%	3.25%
16	2.25%	3.00%
17	2.00%	2.75%
18	1.75%	2.50%
19	1.50%	2.50%
20	1.50%	2.25%
21	1.50%	2.25%
22	1.50%	2.25%
23	1.00%	2.00%
24	1.00%	2.00%
25	1.00%	1.75%
26	1.00%	1.75%
27	1.00%	1.50%
28	1.00%	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. The assumptions prescribed are based on the last experience study, dated August 30, 2016, and a review of inflation and investment return assumptions.

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	8.00% per annum. (2015)
Benefit increases after retirement	1.00% per annum through 2033 and 2.50% per annum thereafter. (2017)
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. (2015)
Inflation	2.75% per year. (2015)
Payroll growth	3.50% per year. (2015)
Mortality rates	
Healthy pre-retirement	RP-2014 employee generational mortality table projected with mortality improvement scale MP-2016, from a base year 2006. (2017)
Healthy post-retirement	RP-2014 annuitant generational mortality table projected with mortality improvement scale. MP-2016 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2017) The RP-2014 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18-80 and the annuitant mortality table contains mortality rate for ages 50-120. 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. (2017)
Disabled	RP-2014 annuitant generational mortality table, improvement scale MP-2016 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2017) The RP-2014 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18-80 and the annuitant mortality table contains mortality rate for ages 50-120. 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. (2017)
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. (2011)

* Year in parenthesis is the date of adoption.

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Police and Fire Plan

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.
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.
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.

Police and Fire Plan

	Rate %*					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
Age	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.04%	0.02%	0.03%	0.02%
25	0.05%	0.03%	0.05%	0.02%	0.05%	0.03%
30	0.08%	0.06%	0.05%	0.02%	0.08%	0.06%
35	0.12%	0.11%	0.06%	0.03%	0.12%	0.11%
40	0.18%	0.17%	0.07%	0.04%	0.18%	0.17%
45	0.26%	0.21%	0.10%	0.07%	0.26%	0.21%
50	0.39%	0.27%	0.17%	0.11%	0.39%	0.27%
55	0.55%	0.38%	0.28%	0.17%	0.55%	0.38%
60	0.77%	0.56%	0.48%	0.26%	0.77%	0.56%
65	1.10%	0.84%	0.86%	0.39%	1.10%	0.84%
70	1.65%	1.31%	1.42%	0.64%	1.65%	1.31%

	Withdrawal Rates After Third Year		Disability Retirement	
Age	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%

* 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.

Continued

Summary of Actuarial Assumptions and Methods

(continued from previous page)

Police and Fire Plan

Age	Retirement
50	10.0%
51	7.0%
52	7.0%
53	10.0%
54	10.0%
55	25.0%
56	22.5%
57	22.5%
58	22.5%
59	20.0%
60	22.5%
61	25.0%
62	30.0%
63	30.0%
64	30.0%
65	50.0%
66	50.0%
67	50.0%
68	50.0%
69	50.0%
70+	100.0%

Salary Scale	
Year	Increase
1	12.5%
2	10.7%
3	9.0%
4	8.0%
5	6.5%
6	6.0%
7	5.5%
8	5.2%
9	5.0%
10	4.7%
11	4.5%
12	4.4%
13	4.3%
14	4.2%
15	4.1%
16	4.0%
17	4.0%
18	4.0%
19	4.0%
20	4.0%
21	3.9%
22	3.8%
23	3.7%
24	3.6%
25+	3.5%

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. The assumptions prescribed are based on the last experience study, dated February 2012, prepared by a former actuary and a review of inflation and investment return assumptions, dated September 11, 2014.

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	8.00% per annum. (2015)
Benefit increases after retirement	2.50% per annum. (2014)
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.
Inflation	2.75% per year. (2015)
Payroll growth	3.50% per year. (2015)
Mortality rates	
Healthy Pre-retirement	RP-2014 employee generational mortality table projected with mortality improvement scale MP-2016, from a base year of 2006. (2017)
Healthy Post-retirement	RP-2014 annuitant generational mortality table projected with mortality improvement scale MP-2016 from a base year of 2006. Male rates are adjusted by a factor of 0.96
Disabled	RP-2014 annuitant generational mortality table projected with mortality improvement scale MP-2016 from a base year of 2006. Male rates are adjusted by a factor of 0.96. (2017) 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. Members who have attained the highest assumed retirement age are assumed to retire in one year. (1999)
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: (1999) Year — Select Withdrawal Rates 1 — 25% 2 — 20% 3 — 15%

* Year in parenthesis is the date of adoption.

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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.
Refund of contributions	Account balances accumulate interest until normal retirement date and are discounted back to the valuation date. All employees with-drawing 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

	Rate (%)*					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality**	
Age in 2014	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.04%	0.02%	0.03%	0.02%
25	0.05%	0.03%	0.05%	0.02%	0.05%	0.03%
30	0.08%	0.06%	0.05%	0.02%	0.08%	0.06%
35	0.12%	0.11%	0.06%	0.03%	0.12%	0.11%
40	0.18%	0.17%	0.07%	0.04%	0.18%	0.17%
45	0.26%	0.21%	0.10%	0.07%	0.26%	0.21%
50	0.39%	0.27%	0.17%	0.11%	0.39%	0.27%
55	0.55%	0.38%	0.28%	0.17%	0.55%	0.38%
60	0.77%	0.56%	0.48%	0.26%	0.77%	0.56%
65	1.10%	0.84%	0.86%	0.39%	1.10%	0.84%
70	1.65%	1.31%	1.42%	0.64%	1.65%	1.31%

	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%

* 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.

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Correctional Plan

Age	Retirement
50	3.0%
51	2.0%
52	2.0%
53	2.0%
54	5.0%
55	20.0%
56	8.0%
57	8.0%
58	8.0%
59	8.0%
60	15.0%
61	15.0%
62	30.0%
63	30.0%
64	30.0%
65	40.0%
66	40.0%
67	40.0%
68	40.0%
69	40.0%
70+	100.0%

Salary Scale	
Age	Increase
20	8.7%
25	7.5%
30	6.5%
35	6.0%
40	5.5%
45	4.7%
50	4.7%
55	4.5%
60	4.0%
65	3.7%
70+	3.7%

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]
06/30/2017	$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%
06/30/2010	13,126,993	17,180,956	4,053,963	76.40%	4,804,627	84.4%
06/30/2009	13,158,490	18,799,416	5,640,926	69.99%	4,778,708	118.0%
06/30/2008	13,048,970	17,729,847	4,680,877	73.60%	4,722,432	99.1%

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]
06/30/2017	$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%
06/30/2010	5,188,339	5,963,672	775,333	87.00%	740,101	104.8%
06/30/2009	5,239,855	6,296,274	1,056,419	83.22%	733,164	144.1%
06/30/2008	5,233,015	5,918,061	685,046	88.42%	703,701	97.3%

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]
06/30/2017	$595,366	$629,870	$34,504	94.52%	$200,103	17.2%
06/30/2016	529,879	553,840	23,961	95.67%	188,816	12.7%
06/30/2015	475,963	498,052	22,089	95.56%	179,623	12.3%
06/30/2014	410,489	426,508	16,019	96.24%	172,041	9.3%
06/30/2013	346,778	381,179	34,401	90.98%	164,820	20.9%
06/30/2012	306,454	343,199	36,745	89.29%	164,340	22.4%
06/30/2011	274,704	284,593	9,889	96.53%	165,077	6.0%
06/30/2010	242,019	248,867	6,848	97.25%	154,777	4.4%
06/30/2009	217,577	229,383	11,806	94.85%	154,650	7.6%
06/30/2008	192,937	192,572	(365)	100.19%	154,202	-0.2%

Actuarial Section

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
06/30/17	$3,148,413	$15,800,416	$6,666,893	$19,916,322	100%	100%	14.5%
06/30/16	3,018,468	15,706,371	6,123,570	18,765,863	100%	100%	0.7%
06/30/15	2,915,621	14,666,626	5,978,704	17,974,439	100%	100%	6.6%
06/30/14	2,827,447	12,614,999	5,840,058	15,644,540	100%	100%	3.5%
06/30/13	2,739,037	11,432,882	5,207,850	14,113,295	100%	99%	0.0%
06/30/12	2,644,948	10,785,022	5,168,927	13,661,682	100%	100%	4.5%
06/30/11	2,548,609	10,195,812	5,154,428	13,455,753	100%	100%	13.8%
06/30/10	2,420,862	9,713,177	5,046,917	13,126,993	100%	100%	19.7%
06/30/09	2,273,256	10,368,306	6,157,854	13,158,490	100%	100%	8.4%
06/30/08	2,109,827	9,826,846	5,793,174	13,048,970	100%	100%	19.2%

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
06/30/17	$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%
06/30/10	531,676	3,547,230	1,884,766	5,188,339	100%	100%	58.9%
06/30/09	485,324	3,729,392	2,081,558	5,239,855	100%	100%	49.2%
06/30/08	440,786	3,513,091	1,964,184	5,233,015	100%	100%	65.1%

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
06/30/17	$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%
06/30/10	56,834	74,405	117,628	242,019	100%	100%	94.2%
06/30/09	51,082	69,198	109,103	217,577	100%	100%	89.2%
06/30/08	44,596	55,875	92,101	192,937	100%	100%	100.4%

Schedule of Active Members Valuation Data

Last 10 Years

General Employees Plan

Valuation Date	Number	Valuation Payroll	Annual Average Pay	% Increase in Average Pay
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%
06/30/10	140,389	4,804,627,000	34,224	2.7%
06/30/09	143,353	4,778,708,000	33,335	1.3%
06/30/08	143,562	4,722,432,000	32,895	8.1%

Police and Fire Plan

Valuation Date	Number	Valuation Payroll	Annual Average Pay	% Increase in Average Pay
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%
06/30/10	11,002	740,101,000	67,270	1.2%
06/30/09	11,035	733,164,000	66,440	3.5%
06/30/08	10,961	703,701,000	64,200	6.2%

Correctional Plan

Valuation Date	Number	Valuation Payroll	Annual Average Pay	% Increase in Average Pay
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%
06/30/10	3,521	154,777,000	43,958	5.6%
06/30/09	3,715	154,650,000	41,629	0.2%
06/30/08	3,710	154,202,000	41,564	10.5%

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
06/30/17	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
06/30/10	4,692	79,514,000	2,277	34,332,000	68,474	919,574,000	5.2%	13,430
06/30/09	4,358	71,682,000	2,179	32,436,000	66,059	874,392,000	4.7%	13,237
06/30/08	4,552	69,065,000	2,108	27,228,000	63,880	835,146,000	5.3%	13,074

*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
06/30/17	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
06/30/10	368	24,314,000	189	7,308,000	7,541	333,223,000	5.4%	44,188
06/30/09	338	21,685,000	170	6,396,000	7,362	316,217,000	5.1%	42,953
06/30/08	361	25,372,000	199	7,572,000	7,194	300,928,000	6.3%	41,830

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
06/30/17	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
06/30/10	60	707,000	5	96,000	441	3,634,000	20.2%	8,240
06/30/09	77	755,000	9	108,000	386	3,023,000	27.2%	7,832
06/30/08	47	471,000	4	48,000	318	2,376,000	21.7%	7,472

Determination of Contribution Sufficiency

As of June 30, 2017 (in thousands)

General Employees Plan

A. Statutory Contributions—M.S. Chapter 353	Percent of Payroll	Dollar Amount
1. Employee Contributions	6.50%	$403,165
2. Employer Contributions	7.50%	465,177
3. Employer Supplemental Contributions	0.50%	31,000
4. State Contributions	0.10%	6,000
5. Total	**14.60**	**$905,342**
B. Actuarially Determined Contributions—M.S. Chapter 356		
1. Normal Cost		
a. Retirement	5.68%	$351,627
b. Disability	0.23%	14,287
c. Death	0.10%	6,202
d. Deferred	1.35%	83,743
e. Refund	0.55%	34,115
f. Total	7.91%	$489,974
2. Amortization of Supplemental Contribution (UAAL)	8.08%	$501,110
3. Allowance for Administrative Expenses	0.19%	11,784
4. Total	**16.18****	**$1,002,868**
C. Contribution Sufficiency (Deficiency) (A.5 - B.4))	**(1.58%)**	**($97,526)**
Projected Annual Payroll for Fiscal Year Beginning July 1, 2017		**$6,201,854**

**The required contribution on a market value of assets basis is 15.92% of payroll.

Police and Fire Plan

A. Statutory Contributions—M.S. Chapter 353	Percent of Payroll	Dollar Amount
1. Employee Contributions	10.80%	$103,703
2. Employer Contributions	16.20%	155,554
3. Minneapolis Police Contributions	0.93%	8,890
4. Minneapolis Fire Contributions	0.50%	4,757
5. Virginia Fire Contributions	0.00%	30
6. State Contributions	0.93%	9,000
7. Total	**29.36%**	**$281,934**
B. Actuarially Determined Contributions—M.S. Chapter 356		
1. Normal Cost		
a. Retirement	15.59%	$149,697
b. Disability	3.47%	33,319
c. Death	0.66%	6,337
d. Deferred	1.46%	14,019
e. Refund	0.10%	960
f. Total	21.28%	$204,332
2. Amortization of Supplemental Contribution (UAAL)	9.19%	$88,243
3. Allowance for Administrative Expenses	0.11%	1,056
4. Total (b)	**30.58****	**$293,631**
C. Contribution Sufficiency (Deficiency) (a - b)	**(1.22%)**	**($11,697)**
Projected Annual Payroll for Fiscal Year Beginning July 1, 2017		**$960,210**

**The required contribution on a market value of assets basis is 30.05% of payroll.

Continued

Determination of Contribution Sufficiency

As of June 30, 2017 (in thousands) (continued from previous page)

Correctional Plan

Statutory Contributions—M.S. Chapter 353E	Percent of Payroll	Dollar Amount
1. Employee Contributions	6.50%	$12,157
2. Employer Contributions	8.75%	18,246
3. Total	**14.58%**	**$30,403**
B. Actuarially Determined Contributions—M.S. Chapter 356		
1. Normal Cost		
a. Retirement	8.38%	$17,475
b. Disability	2.70%	5,630
c. Death	0.21%	438
d. Deferred	1.96%	4,087
e. Refund	0.48%	1,001
f. Total	13.73%	$28,631
2. Amortization of Supplemental Contribution (UAAL)	1.22%	$2,544
3. Allowance for Administrative Expenses	0.16%	334
4. Total	**15.11****	**$31,509**
C. Contribution Sufficiency (Deficiency) (A.3 - B.4))	**(0.53%)**	**($1,106)**
Projected Annual Payroll for Fiscal Year Beginning July 1, 2017		**$208,531**

**The required contribution on a market value of assets basis is 14.86% of payroll.

Determination of Actuarial Value of Assets

As of June 30, 2017 (in thousands)

General Employees Plan

Fair value of assets available for benefits (a)				**$20,100,579**
Calculation of unrecognized return	**Original Amount**	**% Not Recognized**	**Unrecognized Return**	
Year ended June 30, 2017	$1,266,388	80%	$1,013,111	
Year ended June 30, 2016	(1,484,753)	60%	(890,851)	
Year ended June 30, 2015	(630,861)	40%	(252,344)	
Year ended June 30, 2014	1,571,711	20%	314,341	
Total unrecognized return (b)				**$184,257**
Actuarial Value of Assets (a-b)				**$19,916,322**

Police and Fire Plan

Fair value of assets available for benefits (a)				**$7,918,879**
Calculation of unrecognized return	**Original Amount**	**% Not Recognized**	**Unrecognized Return**	
Year ended June 30, 2017	$500,621	80%	$400,497	
Year ended June 30, 2016	(587,179)	60%	(352,307)	
Year ended June 30, 2015	(254,614)	40%	(101,846)	
Year ended June 30, 2014	659,930	20%	131,986	
Total unrecognized return (b)				**$78,330**
Actuarial Value of Assets (a-b)				**$7,840,549**

Correctional Plan

Fair value of assets available for benefits (a)				**$602,460**
Calculation of unrecognized return	**Original Amount**	**% Not Recognized**	**Unrecognized Return**	
Year ended June 30, 2017	$37,088	80%	$29,670	
Year ended June 30, 2016	(39,723)	60%	(23,834)	
Year ended June 30, 2015	(16,571)	40%	(6,628)	
Year ended June 30, 2014	39,430	20%	7,886	
Total unrecognized return (b)				**$7,094**
Actuarial Value of Assets (a-b)				**$595,366**

Schedule of Changes in Unfunded Actuarial Accrued Liabilities (UAAL)

For the Fiscal Year Ended June 30, 2017 (in thousands)

	General Employees Plan	Police and Fire Plan	Correctional Plan
A. UAAL at Beginning of Year (7/1/16)	**$6,082,546**	**$1,031,844**	**$23,961**
B. Change Due to Interest Requirements and Current Rate of Funding			
1. Normal Cost and Expenses	460,247	190,844	27,052
2. Contributions	(884,092)	(277,313)	(29,155)
3. Interest on A, B1 and B2	469,650	79,089	1,833
C. Expected UAAL at End of Year (A+B)	**$6,128,351**	**$1,024,464**	**$23,691**
D. Increase (Decrease) Due to Actuarial Losses (Gains) Because of Experience Deviations from Expected*			
1. Age and Service Retirements	$17,078	($1,565)	($534)
2. Disability Retirements	(728)	884	(1,338)
3. Death-in-Service Benefits	(11,864)	(598)	26
4. Withdrawals	(17,813)	(1,623)	(1,581)
5. Salary Increases	3,195	11,538	(938)
6. Investment Income	(238,444)	(110,582)	(5,787)
7. Mortality of Annuitants	(19,552)	5,345	149
8. Other Items	(99,625)	(5,430)	(929)
E. UAAL at End of Year Before Plan Amendments and Changes in Actuarial Assumption (C+D)	**$5,760,598**	**$922,433**	**$12,759**
F. Change in UAAL Due to Change in Plan Provisions	0	0	0
G. Change in UAAL Due to Change in Actuarial Assumptions and Methods	(61,198)	436,226	21,745
H. Change in UAAL Due to Change in Decrement Timing and Methodology	0	0	0
I. UAAL at End of Year 6/30/17 (E+F+G+H)	**$5,699,400**	**$1,358,659**	**$34,504**

* 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.

Statistical Section

PERA 2017 Comprehensive Annual Financial Report

Historical Context

Our history prepares us for the future

Minnesota has had three state Capitols.

1853: First state Capitol building opens

March 1, 1881: Fire destroys the Capitol

1882: Second Capitol opens

1893: Legislature authorizes new Capitol

1896: Construction begins

Jan. 2, 1905: New Capitol opens

2013: Renovation project begins

Jan. 3, 2017: Renovated Capitol reopens to public

Photo courtesy MN Dept. of Admin. Cathy Klima photographer

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Introduction

November 20, 2017

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 Paid 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.

The final schedule, Principal Participating Employers, shows the top ten participating employers in each plan compared to the top ten employers from ten years ago in 2008. In addition, information is displayed on how to view the full-listing of all participating employers and the contributions submitted to PERA.

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

David Andrews
Accounting Director

Schedule of Changes in Fiduciary Net Position

Last 10 Fiscal Years (in thousands)

General Employees Fund*

Additions	2017	2016	2015	2014
Employer Contributions	$477,888	$459,978	$435,115	$382,251
State Contributions	6,000	6,000	0	0
Member Contributions	400,204	375,291	353,765	334,495
Investment Income (net of expense)	2,682,901	(20,851)	777,504	2,760,854
Other	411	431	278	605
Total Additions to Fiduciary Net Position	$3,567,404	$820,849	$1,566,662	$3,478,205
Deductions				
Benefits	$1,413,448	$1,359,176	$1,235,303	$1,109,866
Refunds	37,234	37,209	35,655	38,264
Administrative Expenses	11,292	11,110	10,367	9,861
Other	0	0	0	0
Total Deductions from Fiduciary Net Position	$1,461,974	$1,407,495	$1,281,325	$1,157,991
Special Item			$891,636	
Change in Fiduciary Net Position	**$2,105,430**	**$(586,646)**	**$1,176,973**	**$2,320,214**

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

Police and Fire Fund

Additions	2017	2016	2015	2014
Employer Contributions	$166,329	$156,065	$144,317	$132,632
State Contribution	9,000	9,000	9,000	9,000
Member Contributions	101,984	95,172	88,733	81,213
Investment Income (net of expense)	1,058,942	(8,949)	317,556	1,158,389
Other	24	3	84	18
Total Additions to Fiduciary Net Position	$1,336,279	$251,291	$559,690	$1,381,252
Deductions				
Benefits	$512,379	$498,608	$481,330	$452,462
Refunds	2,119	2,391	1,953	1,633
Administrative Expenses	992	906	803	798
Other	0	0	0	0
Total Deductions from Fiduciary Net Position	$515,490	$501,905	$484,086	$454,893
Change in Fiduciary Net Position	**$820,789**	**$(250,614)**	**$75,604**	**$926,359**

Correctional Fund

Addition	2017	2016	2015	2014
Employer Contributions	$17,489	$16,490	$15,736	$15,054
Member Contributions	11,666	11,008	10,472	10,030
Investment Income (net of expense)	78,363	209	20,373	69,451
Other	0	0	0	0
Total Additions to Fiduciary Net Position	$107,518	$27,707	$46,581	$94,535
Deductions				
Benefits	$11,033	$9,381	$7,777	$6,711
Refunds	1,478	982	1,057	1,105
Administrative Expenses	330	292	247	236
Other	0	0	0	1
Total Deductions from Fiduciary Net Position	$12,841	$10,655	$9,081	$8,053
Change in Fiduciary Net Position	**$94,677**	**$17,052**	**$37,500**	**$86,482**

2013	2012	2011	2010	2009	2008
$372,652	$368,037	$357,596	$342,678	$328,603	$303,304
0	0	0	0	0	0
327,933	321,412	311,115	303,571	298,381	280,007
1,903,746	320,417	2,607,568	1,519,786	(2,381,642)	(669,406)
0	564	435	241	3,725	3,681
$2,604,331	$1,010,430	$3,276,714	$2,166,276	$(1,750,933)	$(82,414)
$1,051,591	$1,000,644	$950,708	$906,300	$863,910	$824,372
35,865	39,105	38,218	28,770	26,887	28,772
9,897	9,650	9,748	9,476	9,706	9,473
23	0	0	0	1,895	3,245
$1,097,376	$1,049,399	$998,674	$944,546	$902,398	$865,862
$1,506,955	**$(38,969)**	**$2,278,040**	**$1,221,730**	**$(2,653,331)**	**$(948,276)**

2013	2012	2011	2010	2009	2008
$125,995	$121,891	$109,604	$107,065	$101,548	$87,023
0	0	0	0	0	0
76,434	76,264	73,702	71,736	67,701	58,259
806,742	156,926	1,024,981	602,177	(967,445)	(266,573)
24	488,521	1	0	701	1,029
$1,009,195	$843,602	$1,208,288	$780,978	$(797,495)	$(120,262)
$431,726	$386,208	$342,219	$326,041	$310,100	$295,994
2,020	1,524	2,012	1,493	1,237	1,496
755	855	762	753	747	745
0	0	0	0	199	342
$434,501	$388,587	$344,993	$328,287	$312,283	$298,577
$574,694	**$455,015**	**$863,295**	**$452,691**	**$(1,109,778)**	**$(418,839)**

2013	2012	2011	2010	2009	2008
$14,498	$14,320	$14,289	$14,170	$14,123	$13,388
9,609	9,581	9,624	9,442	9,409	8,922
44,378	7,846	50,343	24,745	(36,201)	(9,552)
0	0	0	0	35	16
$68,485	$31,747	$74,256	$48,357	$(12,634)	$12,774
$5,757	$4,809	$4,026	$3,353	$2,836	$2,268
1,177	1,332	1,338	714	810	724
209	229	229	222	219	213
0	0	0	0	17	34
$7,143	$6,370	$5,593	$4,289	$3,882	$3,239
$61,342	**$25,377**	**$68,663**	**$44,068**	**$(16,516)**	**$9,535**

Continued

Schedule of Changes in Fiduciary Net Position

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

Minneapolis Employees Retirement Fund*

Additions	2017	2016	2015	2014
Employer Contributions	$0	$0	$150	$31,426
State Contribution	0	0	21,575	24,000
Member Contributions	0	0	0	370
Investment Income (net of expense)	0	0	117	145,957
Other	0	0	3	39
Total Additions to Fiduciary Net Position	$0	$0	$21,845	$201,792
Deductions				
Benefits	$0	$0	$66,093	$134,466
Refunds	0	0	51	47
Administrative Expenses	0	0	10	146
Other	0	0	0	0
Total Deductions from Fiduciary Net Position	$0	$0	$66,154	$134,659
Special Item			$(891,636)	
Change in Fiduciary Net Position	**$0**	**$0**	**$(935,945)**	**$67,133**

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

Volunteer Firefighter Fund**

Additions	2017	2016	2015	2014
Employer Contributions	$716	$332	$226	$414
State Contributions	2,659	1,811	1,430	900
Investment Income (net of expense)	6,409	1,325	880	2,623
Other (mainly initial transfer of assets)	14,206	20,401	4,667	7,953
Total Additions to Plan Net Position	$23,990	$23,869	$7,203	$11,890
Deductions				
Benefits and Refunds	$2,700	$1,644	$1,221	$1,096
Administrative Expenses	61	132	86	71
Total Deductions from Fiduciary Net Position	$2,761	$1,776	$1,307	$1,167
Change in Fiduciary Net Position	**$21,229**	**$22,093**	**$5,896**	**$10,723**

**The first Fire Departments joined the Volunteer Firefighter Fund on January 1, 2010.

Defined Contribution Fund

Additions	2017	2016	2015	2014
Employer Contributions	$1,822	$1,965	$1,850	$1,755
Member Contributions	1,739	1,779	1,698	1,628
Investment Income	7,274	999	2,681	8,004
Other	7	2	0	0
Total Additions to Plan Net Position	$10,842	$4,745	$6,229	$11,387
Deductions				
Refunds	$5,233	$3,755	$3,489	$2,800
Administrative Expenses	137	189	186	171
Total Deductions from Fiduciary Net Position	$5,370	$3,944	$3,675	$2,971
Change in Fiduciary Net Position	**$5,472**	**$801**	**$2,554**	**$8,416**

2013	2012	2011	2010	2009	2008
$31,447	$31,623	$5,105	$4,798	$6,646	$6,405
24,000	22,750	22,750	9,000	9,000	8,866
426	564	767	1,081	1,072	1,431
108,116	18,199	182,660	125,710	(223,187)	(61,298)
8	207	44	0	0	0
$163,997	$73,343	$211,326	$140,589	$(206,469)	$(44,596)
$137,807	$140,709	$143,961	$147,099	$148,745	$148,221
57	638	178	27	88	727
131	172	233	1,235	761	690
0	0	0	1,571	1,882	155
$137,995	$141,519	$144,372	$149,932	$151,476	$149,793
$26,002	**$(68,176)**	**$66,954**	**$(9,343)**	**$(357,945)**	**$(194,389)**

2013	2012	2011	2010	2009	2008
$291	$118	$150	$7	$0	$0
361	153	41	0	0	0
1,082	254	242	(8)	0	0
7,984	3,076	2,450	791	0	0
$9,718	$3,601	$2,883	$790	$0	$0
$838	$278	$119	$25	$0	$0
38	21	8	1	0	0
$876	$299	$127	$26	$0	$0
$8,842	**$3,301**	**$2,756**	**$764**	**$0**	**$0**

2013	2012	2011	2010	2009	2008
$1,734	$1,674	$1,622	$1,582	$1,583	$1,503
1,612	1,547	1,496	1,480	1,462	1,356
5,625	1,263	6,726	3,710	(5,146)	(2,173)
0	0	0	1	0	0
$8,971	$4,484	$9,844	$6,773	$(2,101)	$686
$3,399	$2,128	$2,596	$1,817	$1,398	$1,567
152	144	129	211	112	113
$3,551	$2,272	$2,725	$2,028	$1,510	$1,680
$5,420	**$2,212**	**$7,119**	**$4,745**	**$(3,611)**	**$(994)**

Statistical Section

Benefits and Refunds by Type

Last 10 Fiscal Years (in thousands)

General Employees Fund*

Benefits by Type:	2017	2016	2015	2014
Retirement	$1,250,427	$1,195,640	$1,083,605	$970,716
Survivor	141,449	140,630	129,405	116,451
Disability	21,572	22,906	22,293	22,699
Total	$1,413,448	$1,359,176	$1,235,303	$1,109,866
Refunds by Type:				
Separation	$27,513	$27,601	$26,173	$27,962
Death	508	505	707	514
Interest/Employer	9,213	9,103	8,775	9,788
Total	$37,234	$37,209	$35,655	$38,264

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

Police and Fire Fund

Benefits by Type:	2017	2016	2015	2014
Retirement	$403,053	$391,952	$379,068	$353,620
Survivor	58,568	58,119	56,523	54,462
Disability	50,758	48,537	45,739	44,380
Total	$512,379	$498,608	$481,330	$452,462
Refunds by Type:				
Separation	$1,599	$1,540	$1,423	$1,179
Death	52	0	0	0
Interest/Employer	468	851	530	454
Total	$2,119	$2,391	$1,953	$1,633

Correctional Fund

Benefits by Type:	2017	2016	2015	2014
Retirement	$8,555	$6,954	$5,528	$4,427
Survivor	437	372	278	240
Disability	2,041	2,055	1,971	2,044
Total	$11,033	$9,381	$7,777	$6,711
Refunds by Type:				
Separation	$1,129	$792	$821	$844
Death	45	0	29	0
Interest/Employer	304	190	207	261
Total	$1,478	$982	$1,057	$1,105

2013	2012	2011	2010	2009	2008
$914,195	$967,793	$917,461	$872,828	$830,476	$791,449
114,131	9,038	10,058	10,558	10,942	11,424
23,265	23,813	23,189	22,914	22,492	21,499
$1,051,591	$1,000,644	$950,708	$906,300	$863,910	$824,372

$25,878	$27,395	$25,201	$19,261	$18,343	$19,970
695	688	475	378	428	393
9,292	11,022	12,542	9,131	8,116	8,409
$35,865	$39,105	$38,218	$28,770	$26,887	$28,772

2013	2012	2011	2010	2009	2008
$336,220	$327,956	$289,796	$274,751	$260,312	$247,667
52,827	18,268	14,518	14,120	13,746	13,237
42,679	39,984	37,905	37,170	36,042	35,090
$431,726	$386,208	$342,219	$326,041	$310,100	$295,994

$1,243	$1,079	$1,275	$955	$735	$890
31	6	2	0	0	39
746	439	735	538	502	567
$2,020	$1,524	$2,012	$1,493	$1,237	$1,496

2013	2012	2011	2010	2009	2008
$3,518	$2,790	$2,081	$1,627	$1,209	$863
180	23	23	19	14	12
2,059	1,996	1,922	1,707	1,613	1,393
$5,757	$4,809	$4,026	$3,353	$2,836	$2,268

$857	$1,060	$997	$572	$650	$606
48	10	0	5	0	0
272	262	341	137	160	118
$1,177	$1,332	$1,338	$714	$810	$724

Continued

Benefits and Refunds by Type

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

Minneapolis Employees Retirement Fund*

Benefits by Type:

	2017	2016	2015	2014
Retirement	$0	$0	$54,292	$110,372
Survivor	0	0	11,773	23,972
Death in Service	0	0	0	0
Disability	0	0	28	122
Total	$0	$0	$66,093	$134,466

Refunds by Type:

	2017	2016	2015	2014
Separation	$0	$0	$6	$0
Death	0	0	24	37
Interest/Employer	0	0	21	10
Total	$0	$0	$51	$47

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

Volunteer Firefighter Fund**

Benefits by Type:

	2017	2016	2015	2014
Retirement	$554	$279	$0	$0
Survivor	51	23	0	0
Lump Sum Benefit	2,095	1,342	1,221	1,096
Total	$2,700	$1,644	$1,221	$1,096

**The first Fire Departments joined the Volunteer Firefighter Fund in January 1, 2010.

2013	2012	2011	2010	2009	2008
$113,130	$116,016	$117,332	$137,548	$120,213	$119,414
24,354	24,304	23,813	4,051	18,661	18,769
0	0	0	0	4,142	4,257
323	389	2,816	5,500	5,729	5,781
$137,807	$140,709	$143,961	$147,099	$148,745	$148,221
$7	$328	$149	$27	$75	$367
32	64	29	0	13	360
18	246	0	0	0	0
$57	$638	$178	$27	$88	$727

2013	2012	2011	2010	2009	2008
$0	$0	$0	$0	$0	$0
0	0	0	0	0	0
838	279	119	25	0	0
$838	$279	$119	$25	$0	$0

Statistical Section

Summary of Membership

Defined Benefit Plans — Last 10 Years

General Employees Plans

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
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
2010	140,389	68,474	45,151	126,027	380,041
2009	143,353	66,059	43,133	121,690	374,235
2008	143,562	63,880	43,984	116,805	368,231

Police and Fire Plan

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
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
2010	11,002	7,541	1,315	930	20,788
2009	11,035	7,362	1,280	911	20,588
2008	10,961	7,194	1,242	879	20,276

Correctional Plan

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
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
2010	3,521	441	1,895	1,605	7,462
2009	3,715	386	1,683	1,525	7,309
2008	3,710	318	1,520	1,473	7,021

Volunteer Firefighter Plan*

Fiscal Year	Active	Benefit Recipients	Terminated Vested	Terminated Non-Vested	Total
2017	2,753	75	560	-	3,388
2016*	1,639	79	928	-	2,646

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

Schedule of New Retirees and Initial Benefit Paid

Defined Benefit Plans – Last 10 Years

General Employees Plans

	Years of Credited Service						
	0-4	5-9	10-14	15-19	20-24	25-29	30+
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	1125
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	1187
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
2010							
Average monthly benefit	$116	$266	$498	$748	$1,110	$1,608	$2,432
Average high five salary	$3,371	$2,263	$2,573	$2,891	$3,280	$3,743	$4,466
Number of retirees	405	585	583	521	593	436	853
2009							
Average monthly benefit	$119	$234	$464	$724	$1,023	$1,553	$2,423
Average high five salary	$3,348	$2,115	$2,519	$2,830	$3,093	$3,624	$4,458
Number of retirees	429	571	483	563	511	400	657
2008							
Average monthly benefit	$109	$246	$412	$713	$1,010	$1,448	$2,287
Average high five salary	$3,147	$2,218	$2,266	$2,796	$3,094	$3,441	$4,271
Number of retirees	416	585	544	513	554	466	715

Police and Fire Plan

	Years of Credited Service						
	0-4	5-9	10-14	15-19	20-24	25-29	30+
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	$4,479	$5,611	$6,952
Average high five salary	$4,290	$4,612	$5,379	$5,815	$6,730	$7,018	$7,233
Number of retirees	17	33	37	63	93	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
2010							
Average monthly benefit	$342	$760	$1,709	$2,869	$3,829	$5,261	$6,214
Average high five salary	$4,262	$3,685	$4,378	$5,326	$5,709	$6,499	$6,598
Number of retirees	9	12	15	26	49	71	70
2009							
Average monthly benefit	$293	$1,071	$1,531	$2,514	$3,716	$4,932	$5,977
Average high five salary	$4,376	$5,036	$3,810	$4,817	$5,619	$6,071	$6,227
Number of retirees	12	15	11	20	30	85	67
2008							
Average monthly benefit	$452	$1,035	$1,657	$2,852	$3,638	$4,675	$5,542
Average high five salary	$4,660	$5,078	$4,384	$5,409	$5,455	$5,813	$5,978
Number of retirees	14	15	20	13	39	87	56

Continued

Schedule of New Retirees and Initial Benefit Paid

Defined Benefit Plans – Last 10 Years (continued from previous page)

Correctional Plan*

	Years of Credited Service						
	0-4	5-9	10-14	15-19	20-24	25-29	30+
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				
2010							
Average monthly benefit	$476	$508	$835				
Average high five salary	$3,571	$3,847	$4,215				
Number of retirees	9	14	27				
2009							
Average monthly benefit	$413	$677					
Average high five salary	$3,621	$4,041					
Number of retirees	16	43					
2008							
Average monthly benefit	$422	$625					
Average high five salary	$2,633	$4,127					
Number of retirees	9	27					

*The Correctional Plan was established July 1, 1999.

Volunteer Firefighter Plan*

	Years of Credited Service						
	0-4	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30+**
2017							
Average monthly benefit					722.00		
Average high five salary**							
Number of retirants					3		
2016*							
Average monthly benefit		166.00	357.00	561.00	771.00	975.00	
Average high five salary**							
Number of retirants		1	10	13	48	3	

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

Schedule of Benefit Recipients by Type

As of June 30, 2017

General Employees Plans

Amount of Monthly Benefit	Number of Benefit Recipients	Type of Benefit A	B	C	D	Option Selected 1	2	3	4	5	6
$1- $250	21,396	19,655	408	1,108	225	14,472	5,213	299	822	392	198
251- 500	15,795	14,216	275	1,044	260	10,222	3,478	304	1,060	538	193
501 - 750	11,665	10,309	230	881	245	7,189	2,558	261	986	470	201
751 - 1000	8,716	7,739	140	626	211	5,257	1,893	254	800	402	110
1001 - 1250	7,021	6,215	128	506	172	3,889	1,655	269	711	410	87
1251 - 1500	5,495	4,854	92	403	146	2,863	1,292	249	668	343	80
1501 - 1750	4,581	4,048	85	347	101	2,256	1,087	285	600	288	65
1751 - 2000	3,798	3,392	57	269	80	1,830	892	238	541	236	61
2001 - 2250	3,250	2,897	48	241	64	1,441	761	208	532	258	50
2251 - 2500	2,785	2,451	47	241	46	1,156	692	175	470	224	68
2501 - 2750	2,298	2,063	41	169	25	913	614	143	383	179	66
2751 - 3000	1,960	1,768	25	144	23	807	489	147	309	143	65
3001 - 3250	1,623	1,445	29	131	18	631	448	105	246	126	67
3251 - 3500	1,380	1,229	28	115	8	517	380	99	231	97	56
3501 - 3750	1,108	981	19	105	3	400	319	68	190	87	44
3751 - 4000	901	799	17	80	5	297	263	55	188	49	49
4001 - 4250	771	690	8	71	2	250	229	44	154	63	31
4251 - 4500	617	554	6	56	1	191	197	32	119	44	34
4501 - 4750	551	489	5	55	2	187	178	41	91	30	24
4751 - 5000	416	361	5	49	1	123	121	34	75	37	26
5001 - 5250	391	341	5	45	0	131	124	24	71	31	10
5251 - 5500	293	258	2	33	0	98	78	30	56	18	13
5501 - 5750	244	210	2	32	0	85	68	19	45	17	10
5751 - 6000	208	184	1	23	0	67	60	14	49	11	7
6001 - 6250	155	136	1	18	0	48	38	15	33	10	11
6251 - 6500	128	114	0	14	0	27	40	7	37	11	6
6501 - 6750	97	84	2	11	0	38	27	8	18	3	3
6751 - 7000	90	81	0	9	0	24	25	10	24	5	2
Over 7000	468	402	4	62	0	131	135	37	116	32	17
Totals	98,201	87,965	1,710	6,888	1,638	55,540	23,354	3,474	9,625	4,554	1,654

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	149	122	8	18	1	0	50	69	6	10	6	8
251 - 500	145	120	4	20	1	0	52	60	1	17	7	8
501 - 750	130	98	13	17	0	2	45	48	7	13	5	12
751 - 1000	157	118	5	31	3	0	53	44	8	28	15	9
1001 - 1250	157	97	7	48	4	1	38	51	7	28	19	14
1251 - 1500	187	104	13	64	5	1	44	46	14	25	19	39
1501 - 1750	226	109	24	81	7	5	45	48	20	31	7	75
1751 - 2000	266	119	27	97	14	9	57	53	11	51	11	83
2001 - 2250	281	143	25	72	32	9	75	68	12	55	11	60
2251 - 2500	303	135	41	80	28	19	58	86	20	44	10	85
2501 - 2750	410	193	47	102	22	46	101	89	30	68	15	107
2751 - 3000	666	183	133	286	18	46	90	89	28	65	13	381
3001 - 3250	430	272	19	59	13	67	116	123	39	70	21	61
3251 - 3500	453	289	16	37	9	102	147	121	51	59	20	55
3501 - 3750	485	330	22	45	14	74	142	142	36	70	33	62
3751 - 4000	539	371	16	52	13	87	164	149	53	66	29	78
4001 - 4250	483	368	7	22	19	67	145	126	51	78	31	52
4251 - 4500	569	440	12	35	22	60	139	127	70	96	32	105
4501 - 4750	526	438	9	32	13	34	136	124	67	85	35	79
4751 - 5000	504	431	7	21	11	34	113	128	61	115	33	54
5001 - 5250	604	504	7	18	48	27	135	93	77	103	39	157
5251 - 5500	839	790	2	11	13	23	120	85	67	95	22	450
5501 - 5750	354	320	4	6	10	14	85	73	48	100	33	15
5751 - 6000	269	243	3	10	4	9	75	58	44	57	30	5
6001 - 6250	262	235	4	5	7	11	60	59	45	71	24	3
6251 - 6500	209	196	1	2	2	8	53	61	29	50	15	1
6501 - 6750	190	172	0	6	4	8	52	50	28	47	13	0
6751 - 7000	152	147	0	3	2	0	46	34	21	37	14	0
Over 7000	634	608	1	9	9	7	181	122	99	168	62	2
Totals	10,579	7,695	477	1,289	348	770	2,617	2,426	1,050	1,802	624	2,060

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

Continued

Schedule of Benefit Recipients by Type

As of June 30, 2017 (continued from previous page)

Correctional Plan

Amount of Monthly Benefit	Number of Benefit Recipients	Type of Benefit A	B	C	D	E	Option Selected 1	2	3	4	5	6
$1 - $250	161	146	5	7	3	0	97	42	5	11	6	0
251 - 500	149	139	2	6	2	0	86	39	1	16	7	0
501 - 750	165	130	7	9	19	0	80	55	11	12	6	1
751 - 1000	168	142	2	5	19	0	73	61	10	18	5	1
1001 - 1250	152	133	2	0	12	5	75	45	8	10	12	2
1251 - 1500	106	89	2	1	7	7	55	28	5	12	5	1
1501 - 1750	71	61	1	1	0	8	33	25	4	4	4	1
1751 - 2000	44	35	2	1	1	5	19	15	1	5	3	1
2001 - 2250	28	15	1	0	0	12	15	8	1	3	0	1
2251 - 2500	21	6	0	0	0	15	14	5	0	2	0	0
2501 - 2750	12	5	0	0	0	7	8	2	0	1	1	0
2751 - 3000	4	3	0	0	0	1	2	2	0	0	0	0
3001 - 3250	1	1	0	0	0	0	1	0	0	0	0	0
3251 - 3500	2	1	0	0	0	1	0	0	1	0	1	0
3501 - 3750	1	1	0	0	0	0	1	0	0	0	0	0
Totals	1,085	907	24	30	63	61	559	327	47	94	50	8

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 A	B	C	Option Selected 1	2	3
$1 -$250	3	2	1	0	1	2	0
251 - 500	9	8	0	1	2	7	0
501 - 750	18	12	0	6	6	12	0
751 - 1000	45	45	0	0	6	39	0
Over 1000	0	0	0	0	0	0	0
Totals	75	67	1	7	15	60	0

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** Other

Principal Participating Employers

Defined Benefit Plans – Top 10 Listing

General Employees Plans*

FY2017

Employer	Active Members	% of Total Active Members
Hennepin County	7,865	5.04%
Hennepin Healthcare System	5,430	3.48%
Minneapolis Special ISD - 1	4,667	2.99%
City of Minneapolis	3,640	2.33%
Ramsey County	3,420	2.19%
St. Paul ISD - 625	2,905	1.86%
Anoka-Hennepin ISD - 11	2,769	1.78%
City of St. Paul	2,350	1.51%
Rosemount ISD - 196	1,882	1.21%
Anoka County	1,841	1.18%

FY2008

Employer	Active Members	% of Total Active Members
Hennepin County	7,544	5.25%
Minneapolis School District	4,690	3.27%
Hennepin Healthcare System	4,085	2.85%
Ramsey County	3,465	2.41%
City of Minneapolis	3,436	2.39%
St. Paul School District	2,820	1.96%
Anoka-Hennepin School District	2,773	1.93%
City of St. Paul	2,256	1.57%
Rosemount School District	1,896	1.32%
Osseo School District	1,885	1.31%

Police and Fire Plan*

FY2017

Employer	Active Members	% of Total Active Members
City of Minneapolis	1,286	10.78%
City of St. Paul	1,037	8.69%
Hennepin County	325	2.72%
City of Duluth	283	2.37%
City of Rochester	240	2.01%
Ramsey County	203	1.70%
Hennepin Healthcare System	193	1.62%
Metropolitan Council	176	1.48%
City of St. Cloud	175	1.47%
City of Brooklyn Park	139	1.17%

FY2008

Employer	Active Members	% of Total Active Members
City of Minneapolis	1,302	11.88%
City of St. Paul	1,006	9.18%
Hennepin County	328	2.99%
City of Duluth	279	2.55%
Ramsey County	235	2.14%
City of Rochester	225	2.05%
City of St. Cloud	170	1.55%
Wright County	142	1.30%
Hennepin Heathcare System	133	1.21%
Metropolitan Airports Commission	132	1.20%

Continued

Principal Participating Employers

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

Correctional Plan*

FY2017

Employer	Active Members	% of Total Active Members
Ramsey County	487	12.59%
Hennepin County	470	12.15%
Anoka County	261	6.75%
Sherburne County	139	3.59%
Dakota County	115	2.97%
Olmsted County	114	2.95%
Northwestern Juvenile Center	92	2.38%
Prairie Lakes Detention Center	89	2.30%
Washington County	88	2.28%
Stearns County	84	2.17%

FY2008

Employer	Active Members	% of Total Active Members
Hennepin County	611	16.47%
Ramsey County	461	12.43%
Anoka County	235	6.33%
Olmsted County	153	4.12%
Sherburne County	134	3.61%
Dakota County	100	2.70%
Sterns County	90	2.43%
Washington County	84	2.26%
Northwestern Juvenile Center	82	2.21%
Prairie Lakes Detention Center	80	2.16%

Volunteer Firefighter Plan**

FY2017

Employer	Active Members	% of Total Active Members
City of Cottage Grove	62	1.83%
Spring Lake Park	58	1.71%
City of Victoria	51	1.50%
City of Willmar	48	1.42%
City of Oakdale	46	1.36%
Isanti Area Joint Fire District	44	1.30%
City of Oak Grove	42	1.24%
City of Montrose	37	1.09%
City of Goodview	36	1.06%
City of Melrose	36	1.06%
City of Norwood Young America	36	1.06%

FY2010

Employer	Active Members	% of Total Active Members
Ottertail City	27	23.68%
Alborn Township	23	20.18%
Twin Valley City	21	18.42%
Manchester City	16	14.04%
North Star Township	16	14.04%
DeGraff City	11	9.65%

*A complete listing or participating employers can be found at: http://bit.ly/2yB4iUv
**A complete listing or participating employers can be found at: http://bit.ly/2lMFGkV

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