

MONTANA



PUBLIC EMPLOYEES' RETIREMENT BOARD
A COMPONENT UNIT OF THE STATE OF MONTANA

COMPREHENSIVE ANNUAL FINANCIAL REPORT
FOR THE FISCAL YEAR ENDED JUNE 30, 2018

STATE OF MONTANA
Public Employees' Retirement Board
Component Unit of the State of Montana
Comprehensive Annual Financial Report



For the Fiscal Year Ended
June 30, 2018

Public Employees' Retirement System - Defined Benefit Retirement Plan

Judges' Retirement System

Highway Patrol Officers' Retirement System

Sheriffs' Retirement System

Game Wardens' and Peace Officers' Retirement System

Municipal Police Officers' Retirement System

Firefighters' Unified Retirement System

Volunteer Firefighters' Compensation Act

Public Employees' Retirement System - Defined Contribution Retirement Plan

Deferred Compensation (457) Plan

Public Employees' Retirement System - DCRP Disability OPEB

Prepared By:
The Fiscal Services Bureau
Public Employee Retirement Administration
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Helena, MT 59620-0131
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Mission Statement of the PERB

The Montana Public Employees' Retirement Board, as fiduciaries, administers its retirement plans and trust funds, acting in the best interest of the members and beneficiaries.

Mission Statement of the MPERA

The Montana Public Employee Retirement Administration efficiently provides quality benefits, education and service to help our plan members and beneficiaries realize a successful retirement.

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The Mountain Goat is not related to domestic goats, rather, it is a relative of antelope, gazelles and cattle.

Photo courtesy of Montana Fish, Wildlife and Parks

MONTANA PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION



December 14, 2018

The Honorable Steve Bullock
Governor of Montana
Room 204, State Capitol
PO Box 200801
Helena, MT 59620-0801

Dear Governor Bullock:

The Public Employees' Retirement Board (PERB) and its staff, the Montana Public Employee Retirement Administration (MPERA), are pleased to submit this Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2018, in accordance with § 19-2-407, Montana Code Annotated. The purpose of this letter is to introduce the basic financial statements and provide an analytical overview of the trust funds' financial activities. This letter of transmittal is intended to complement the Management's Discussion and Analysis (MD&A) and the two should be read in conjunction.

The MPERA management uses a comprehensive framework of internal controls to ensure the accuracy, completeness, and fairness of all disclosures included in the presentation for which they are responsible. The objective is to provide reasonable, not absolute, assurance that the financial statements are free of any material misstatements. To the best of our knowledge and belief, the enclosed data is accurate in all material respects and is reported in a manner designed to present fairly the financial position and results of operations of the fiduciary funds administered by MPERA.

For financial reporting purposes, MPERA adheres to accounting principles generally accepted in the United States of America (U.S.). MPERA applies all applicable pronouncements of the Governmental Accounting Standards Board (GASB), including the MD&A. Defined Benefit, Defined Contribution and Other Employee Benefit transactions are reported on the accrual basis of accounting. Investments are presented at fair value.

The external auditor conducted an independent audit of the basic financial statements in accordance with U.S. generally accepted auditing standards. This audit is described in the Independent Auditor's Report included in the Financial Section on page 15. Management provided the external auditors with full and unrestricted access to MPERA staff to facilitate independent validation of the integrity of the plans' financial reporting.

INTRODUCTORY SECTION

The MD&A, included in the Financial Section beginning on page 18, is a management discussion of the financial position of the retirement plans and provides an overview and analysis of the plans' basic financial statements. The Statistical Section, beginning on page 207, includes statistics regarding active and retiree membership, employer contributions, assets held, and benefits or distributions paid in accordance with the five objectives required by GASB Statement 44 - financial trends, revenue capacity, debt capacity, demographic and economic information, and operating information.

Profile of the PERB

The PERB is a fiduciary component unit Pension Trust Fund of the State of Montana financial reporting entity. For this reason, the financial statements contained in this report are also included in the State of Montana's CAFR. Fiduciary responsibility for the systems rests with the PERB, which consists of seven members, appointed by the Governor. The members are assigned five-year, staggered terms. The PERB is required to approve a final budget before the beginning of the fiscal year. The MPERA management develops the budget for all plans administered and presents it to the PERB. As governed by statute, the PERB's defined benefit administrative expenses may not exceed 1.5 percent of the total defined benefit plan retirement benefits paid. Costs for the PERB to administer the defined contribution plans are also defined in statute and the funding is provided by the fees assessed on account balances. The budget is monitored throughout the year and updates are provided to the PERB.

The PERB oversees ten separate retirement plans and one Other Post Employment Benefit (OPEB) plan, each reported in this CAFR. There are nine defined benefit retirement plans including the Public Employees' Retirement System-Defined Benefit Retirement Plan (PERS-DBRP) in its 73rd year of operation, the Judges' Retirement System (JRS), the Highway Patrol Officers' Retirement System (HPORS), the Sheriffs' Retirement System (SRS), the Game Wardens' and Peace Officers' Retirement System (GWPORS), the Municipal Police Officers' Retirement System (MPORS), the Firefighters' Unified Retirement System (FURS), and the Volunteer Firefighters' Compensation Act (VFCA). The Public Employees' Retirement System- DCRP Disability OPEB (PERS-DCRP Disability OPEB) was statutorily-created through § 19-3-2141, MCA, and is completely separate from the other defined benefit plans. The PERS-DCRP Disability OPEB is self-insured and provides a defined benefit disability payment for disabled members of the PERS-DCRP.

The two defined contribution retirement plans are the Public Employees' Retirement System-Defined Contribution Retirement Plan (PERS-DCRP) and the Deferred Compensation (457(b)) Plan. The PERS-DCRP was implemented July 1, 2002. New hires in PERS have the option of choosing participation in either the PERS-DBRP or PERS-DCRP within 12 months of hire. The PERB contracts with Empower™ Retirement to provide recordkeeping services for the PERS-DCRP. University employees, in positions covered by PERS, have a third retirement option: the Montana University System Retirement Program (MUS-RP) administered by the Teachers Insurance and Annuity Association (TIAA New York, NY). State and University employees, and employees of local government entities that contract with the PERB, also have the option to supplement their retirement income by voluntarily participating in the Deferred Compensation (457(b)) Plan. The PERB contracts with Empower™ Retirement to provide recordkeeping services for the Deferred

Compensation Plan. Participants in the Deferred Compensation Plan can elect to defer money into either a pre-tax account or an after-tax (Roth) account, or both.

Economic Condition and Outlook

Investments

The economic condition of the defined benefit plans is based primarily upon investment earnings. For fiscal year 2018, the PERS-DBRP experienced a 8.84% rate of return for fiscal year 2018; the average annualized rate of return for the last three years was 7.54%; for the last five years was 8.79%; and for the last ten years was 6.76%. The ten year rate of return is below the actuarial return assumption of 7.65%. The plans are required by law to be maintained on an actuarially sound basis which protects participants' future benefits. A summary of the investment activity can be found in the *Investment Section* of this CAFR on page 146.

The investment portfolio mix at fair value under the CAPP as of June 30, 2018 for the PERS-DBRP was 35.36% domestic equity, 17.55% international equity, 10.86% private equity, 1.93% cash equivalents (short-term), 24.96% domestic fixed income, 7.01% real estate, and 2.33% natural resources. See MD&A, starting on page 18, and *Investment Section*, page 123, for more detailed analysis and information. The Plan's investment outlook is long term, allowing the portfolio to take advantage of the favorable risk-return characteristics of domestic equities by placing more emphasis on this category.

The funded status of all the MPERA administered retirement systems increased in fiscal year 2018, with the exception of the JRS, HPORS and MPORS. JRS funded status experienced a decrease of 5.77% from 167.06% in 2017 to 161.29% in 2018. HPORS funded status experienced a slight decrease of 0.32% from 64.35% in 2017 to 64.03% in 2018. MPORS funded status experienced a slight decrease of 0.97% from 68.66% in 2017 to 67.69% in 2018. A single year's funded ratio, by itself, does not provide a measure of the funding direction. The status and funding progress of the defined benefit retirement systems can be found in the *Actuarial Section* of this report on pages 172-173 in accordance with GASB 67. The PERS-DCRP Disability OPEB schedule of funding progress can be found on page 171.

Funding

The primary funding objectives of the PERB for the pension trust funds are to: 1) ensure that the systems are financially sound and pay all benefits promised using assets accumulated from required employer and member contributions and investment income; and 2) achieve a well-funded status with a range of safety to absorb market volatility without creating an Unfunded Actuarial Liability (UAL). PERB's long-term goal is for all retirement systems to be 100% funded and up to 120% funded to allow a reserve in times of slow markets. The PERB's short-term goal is to obtain actuarial soundness for the plans that do not amortize in 30 years or less.

The information received from the annual actuarial valuation is used by the PERB to recommend funding increases or plan changes or both to the Legislature to address financial sustainability. The contribution rates are statutorily set through the Legislature. The rate of the employer contributions to the plans is composed of the normal cost, amortization of the UAL, and a load for administrative

INTRODUCTORY SECTION

expenses. The administrative expense load is based upon an expense amount expected to occur during the year for each Plan.

Funds are accumulated to meet future benefit obligations to retirees and beneficiaries. This accumulated balance is referred to as the “net position restricted for pension benefits” in the Statement of Changes in Fiduciary Net Position – Pension Trust Funds in the *Financial Section*, page 38 of this report. The total pension liability is not reported in the basic financial statements; however, it is disclosed in Note 4 to the basic financial statements and in the required supplementary information. The total pension liability is determined by the actuary and is a measure of the present value of actuarial accrued liabilities estimated to be payable in the future to current retirees and beneficiaries. The net pension liability is measured as the total pension liability less the amount of the pension plan’s fiduciary net position. The net pension liability is an accounting measurement for financial statement purposes. The plan fiduciary net position as a percentage of the total pension liability for each plan is shown in the table below. This information also appears in Note 4 to the basic financial statements and in the required supplementary information.

Plan Fiduciary Net Position as a Percentage of the Total Pension Liability			
PERS-DBRP	73.47%	GWPORS	82.54%
JRS	170.54%	MPORS	70.95%
HPORS	65.56%	FURS	79.03%
SRS	82.68%	VFCA	83.48%

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Montana Public Employees’ Retirement Board for its comprehensive annual financial report for the fiscal year ended June 30, 2017. This was the twentieth consecutive year that the Montana Public Employees’ Retirement Board has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government entity must publish an easily readable and efficiently organized Comprehensive Annual Financial Report. This report must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for a period of one year only. We believe our current Comprehensive Annual Financial 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.

MPERA also received the Public Pension Coordinating Council (PPCC) Public Pension Standards Award for 2018 in recognition of meeting the professional standards for plan administration set forth in the Public Pension Standards. This is the sixteenth year the PPCC is offering the PPCC Standards Award Program to public retirement systems and the thirteenth time MPERA has received the PPCC award. The Public Pension Standards are intended to reflect minimum expectations for public retirement system management and administration, as well as serve as a benchmark by which all defined benefit public plans should be measured.

Acknowledgments

The compilation of this report reflects the effort of the MPERA Fiscal Services Bureau accounting staff. This report is intended to provide complete and reliable information to facilitate the management decision process, serve as a means of determining compliance with legal provisions, and to serve as a means of determining responsible stewardship of the plans' funds. MPERA received an unmodified opinion from our independent auditors on the financial statements included in this report. This opinion provides assurance that the financial statements can be relied upon.

The reporting employers of each retirement plan form the link between the plans and the members. Their cooperation contributes significantly to the success of the plans. We hope the employers and their employees find this report informative.

We would like to take this opportunity to express our gratitude to the staff, the advisors, and the many people who have worked so diligently to assure the successful operation of the plans.

Respectfully submitted,

/s/ Dore Schwinden
Dore Schwinden, Executive Director
Montana Public Employee
Retirement Administration

/s/ Marty Tuttle
Marty Tuttle, President
Montana Public Employees'
Retirement Board



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**Montana Public Employees'
Retirement Board**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2017

Christopher P. Morrill

Executive Director/CEO



Public Pension Coordinating Council

Public Pension Standards Award
For Funding and Administration
2017

Presented to

Montana Public Employees' Retirement Administration

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

Presented by the Public Pension Coordinating Council, a confederation of

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

A handwritten signature in black ink that reads "Alan H. Winkle". The signature is written in a cursive style.

Alan H. Winkle
Program Administrator

INTRODUCTORY SECTION

Public Employees' Retirement Board

*A Component Unit of the State of Montana
as of June 30, 2018*



Left to right: Timm Twardoski, Sheena Wilson, Marty Tuttle, Julie McKenna, Pepper Valdez, Robyn Driscoll, and Maggie Peterson

Marty Tuttle, President

Clancy, Active DC Plan Member
Public Employee
Appointed 7/31/2015
Term Expires 3/31/2019
Email: Marty.Tuttle@mt.gov

Pepper Valdez, Vice President

Billings,
Active Public Employee
Appointed 7/31/2015
Term Expires 3/31/2020
Email: Pepper.Valdez@mt.gov

Timm Twardoski

Helena,
Member at Large
Resigned 11/7/2018
Term Expires 3/31/2021
Email: Timm.Twardoski@mt.gov

Robyn Driscoll

Billings,
Member at Large
Appointed 6/1/2018
Term Expires 3/31/2023
Email: Robyn.Driscoll@mt.gov

Sheena Wilson

Helena,
PERS Retired Member
Reappointed 6/1/2018
Term Expires 3/31/2023
Email: Sheena.Wilson@mt.gov

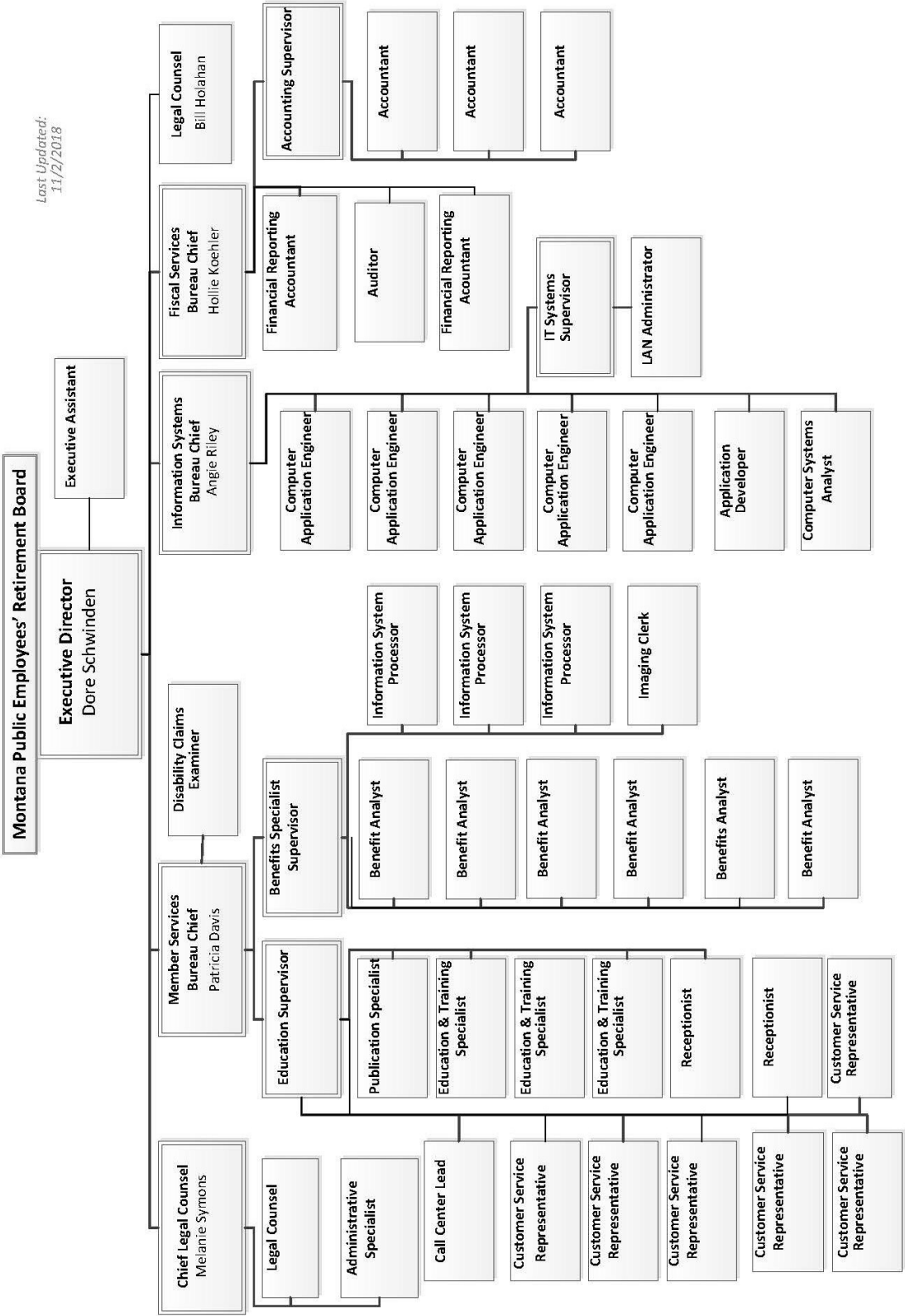
Julie McKenna

Helena,
Active Public Employee
Reappointed 4/1/2017
Term Expires 3/31/2022
Email: Julie.McKenna@mt.gov

Maggie Peterson

Anaconda, Experience in Investment Management
PERS Board Representative - BOI since 5/1/2018
Appointed 6/5/2014
Term Expires 3/31/2019
Email: Maggie.Peterson@mt.gov

Public Employees' Retirement Board
 A Component Unit of the State of Montana
 MPERA Organizational Chart



INTRODUCTORY SECTION

Professional Consultants

Cavanaugh Macdonald Consulting, LLC

Consulting Actuary
3550 Busbee Pky, Ste 250
Kennesaw GA 30144

LexisNexis

Risk Data Management Services
28330 Network Place
Chicago IL 60673-1283

Sagitec Solutions, LLC

Pension Systems Design
422 County Road D East
Saint Paul MN 55117

IceMiller

Legal Counsel
One American Square, Ste 2900
Indianapolis IN 46282-0200

Pension Benefit Information, LLC

Death Validation Services
333 S 7th St, Ste 300
Minneapolis MN 55402

CMS Communication and Management

HR Consulting
PO Box 1251
Helena MT 59624-1251



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The moose is the largest of the deer family. Unlike deer, moose are solitary and do not form herds. Since the 1990's, the moose population has declined in the United States.

Photo courtesy of Montana Fish, Wildlife and Parks

LEGISLATIVE AUDIT DIVISION

Angus Maciver, Legislative Auditor
Deborah F. Butler, Legal Counsel



Deputy Legislative Auditors:
Cindy Jorgenson
Joe Murray

INDEPENDENT AUDITOR'S REPORT

The Legislative Audit Committee
of the Montana State Legislature:

Introduction

We have audited the accompanying Statement of Fiduciary Net Position - Pension (And Other Employee Benefit) Trust Funds of the Public Employees' Retirement Board, a component unit of the state of Montana, as of June 30, 2018, and the related Statement of Changes in Fiduciary Net Position - Pension (And Other Employee Benefit) Trust Funds for the fiscal year then ended, and the related notes to the financial statements.

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 responsibility includes designing, implementing, and maintaining 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the 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 the board's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the board's internal control, and 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 the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Public Employees' Retirement Board as of June 30, 2018, and the changes in fiduciary net position for the fiscal year then ended in conformity with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note A8 to the financial statements, there was a change in how certain investment income is recorded in fiscal year 2018 for the defined benefit pension plans. A majority of the board's investments are held in the Consolidated Asset Pension Pool (CAPP) managed by the Montana Board of Investments (BOI). This pool was established by BOI in March 2017, by consolidating five previously existing pension asset pools into one. Unlike the prior pools, and the Short-Term Investment Pool, CAPP does not distribute investment earnings to pool participants. As a result, there is significantly less interest income reported in fiscal year 2018 than in prior years, and there is no dividend income reported. CAPP investment earnings are reinvested in the pool instead of being distributed to participants, and increase the value of the board's investment in CAPP.

Additionally, under the CAPP structure, the board only realizes gains and losses on investments upon the sale of CAPP participation units. These realized gains and losses are reported as part of Net Appreciation (Depreciation) in Fair Value of Investments. Prior financial statements presented the activity as interest. Our opinion is not modified with respect to these matters.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion & Analysis, Schedule of Changes in Multiple-Employer Plans Net Pension Liability/(Asset), Schedule of Changes in Single Employer Plans Net Pension Liability/(Asset), Schedule of Net Pension Liability/(Asset) for Multiple-Employer Plans, Schedule of Net Pension Liability/(Asset) for Single-Employer Plans, Schedule of Employer and Non-Employer (State) Contributions for Cost-Sharing Multiple-Employer Plans, Schedule of Employer Contributions for Single-Employer Plans, Schedule of Investment Returns for Multiple-Employer Plans, Schedule of Investment Returns for Single-Employer Plans, and the Schedule of Total OPEB (Healthcare) Liability and Related Ratios, Last Ten Fiscal Years, and related notes be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The following schedules are supplementary information presented for purposes of additional analysis and are not a required part of the financial statements: Schedule of Administrative Expenses, Schedule of Investment Expenses, Schedule of Professional/Consultant Fees, Detail of Fiduciary Net Position (PERS-DBRP and PERS-DBEd), Detail of Changes in Fiduciary Net Position (PERS-DBRP and PERS-DBEd), Detail of Fiduciary Net Position (PERS-DCRP, PERS-DCEd), and the Detail of Changes in Fiduciary Net Position (PERS-DCRP, PERS-DCEd) for the fiscal year ended June 30, 2018. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

Other Information

Our audit was conducted for the purpose of forming an opinion on the basic financial statements as a whole. The Introductory, Investment, Actuarial, and Statistical sections were presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information has 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 it.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 14, 2018, on our consideration of the board's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the board's internal control over financial reporting and compliance. It is included in the Legislative Auditor's separately issued report (18-08A).

Respectfully submitted,

/s/ Cindy Jorgenson

Cindy Jorgenson, CPA
Deputy Legislative Auditor
Helena, MT

December 14, 2018

Public Employees' Retirement Board

A Component Unit of the State of Montana

Management's Discussion and Analysis

This section presents management's discussion and analysis of the Montana Public Employees' Retirement Board's (PERB) financial presentation and performance of the plans administered by the PERB for the fiscal year ending June 30, 2018. It is presented as a narrative overview and analysis and should be read in conjunction with the Letter of Transmittal included in the Introductory Section, the financial statements and other information presented in the Financial Section of this Component Unit Financial Report. Throughout this discussion and analysis units of measure (i.e., billions, millions, thousands) are approximate, being rounded up or down to the nearest tenth of the respective unit value.

Financial Highlights

- The PERB's combined total net position of the defined benefit plans increased by \$442.9 million or 6.3% in fiscal year 2018. The increase was primarily due to an increase in investment income.*
- The PERB's defined contribution plans combined total net position increased by \$56.3 million or 8.3% in fiscal year 2018. The total increase in net position was primarily due to the increase of contributions in the PERS defined contribution retirement plan and the deferred compensation plan.*
- Revenues (additions to plan net position) for the PERB's defined benefit plans for fiscal year 2018 were \$957.9 million, which includes member and employer contributions of \$342.8 million and net investment income of \$615.1 million.*
- Revenues (additions to plan net position) for the PERB's defined contribution plans for fiscal year 2018 were \$97.7 million, which includes member and employer contributions of \$48.8 million and net investment income of \$48.9 million.*
- Expenses (deductions to plan net position) for the PERB's defined benefit plans increased from \$477.4 million in fiscal year 2017 to \$515.6 million in fiscal year 2018 or 8.0%. The increase in 2018 is due to an increase in benefit payments and refunds.*
- Expenses (deductions to plan net position) for the PERB's defined contribution plans increased from \$36.9 million in fiscal year 2017 to \$41.5 million in fiscal year 2018 or 12.6%. The increase in expenses is primarily due to an increase in member distributions.*
- The PERB's defined benefit plans' funding objective is to meet long-term benefit obligations. As of June 30, 2018, the date of the latest actuarial valuation, four of the plans amortize the Unfunded Actuarial Liability (UAL) in 30 years or less. They are the Sheriffs' Retirement System (SRS), Municipal Police Officers' Retirement System (MPORS), Firefighters' Unified Retirement System (FURS), and the Volunteer Firefighters' Compensation Act (VFCA). The plans that do not amortize the Unfunded Actuarial Liability in 30 years or less are the Public Employees' Retirement System (PERS), the Highway Patrol Officers' Retirement System (HPORS) and the Game Wardens' and Peace Officers'*

Retirement System (GWPORS). The Judges' Retirement System (JRS) has an actuarial surplus. This means there are more assets than liabilities in the plan. It is important to understand that this measure reflects the Actuarial Value of Assets for each defined benefit plan, which is currently greater than the actual fair value published in the financial statements. Investment earnings are critical to the defined benefit plans. The actuary uses a four-year smoothing method to determine the Actuarial Value of Assets. This method is used to reduce the impact of market volatility. Due to smoothing gains in 2015, 2016 and 2017, and a smoothing loss in 2018, return on actuarial value ranged from 6.59% to 7.01% for all systems. These ranges were less than the 7.65% actuarial assumed rate of return on investments, thus creating actuarial experience losses.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the PERB's financial reporting which is comprised of the following components:

- (1) Financial Statements
- (2) Notes to the Financial Statements
- (3) Required Supplementary Information
- (4) Other Supplementary Schedules

Collectively, this information presents the combined net position restricted for pension benefits for each of the plans administered by the PERB as of June 30, 2018. This financial information also summarizes the combined changes in net position restricted for pension benefits for the year then ended. The information in each of these components is briefly summarized as follows:

- (1) Financial Statements for the fiscal year ended June 30, 2018, are presented for the fiduciary funds administered by MPERA, staff of the PERB. Fiduciary funds are used to pay for pension benefits and expenses. The fiduciary funds are comprised of 11 trust funds that consist of ten pension and one other post-employment benefit (OPEB).
 - The Statement of Fiduciary Net Position is presented for the pension trust funds at June 30, 2018. These financial statements reflect the resources available to pay benefits to retirees and beneficiaries at the end of the fiscal year reported.
 - The Statement of Changes in Fiduciary Net Position is presented for the pension trust funds for the year ended June 30, 2018. These financial statements reflect the changes in the resources available to pay benefits to retirees and beneficiaries at the end of the fiscal year reported.
- (2) The Notes to the Financial Statements provide additional information that is essential for a full understanding of the data provided in the financial statements. The information in the Notes to the Financial Statements is described as follows:
 - Note A provides a summary of significant accounting policies including: the basis of accounting; capital assets and equipment used in operations including PERIS, the new line of business system; operating lease; Governmental Accounting Standards Board (GASB) Statement No. 67 Disclosures regarding Financial Reporting for Pension Plans; GASB Statement No. 74 Financial Reporting for Post-Employment Benefit Plans

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Other Than Pension Plans; GASB Statement No. 75 Accounting and Financial Reporting for Post-Employment Benefits Other Than Pensions (OPEB); and summaries of the method to value investments and other significant accounting policies or explanations.

- Note B provides information about litigation.
 - Note C describes the membership and descriptions of each of the plans administered by the PERB. Summaries of benefit and contribution information are also provided.
- (3) The Required Supplementary Information (RSI) consists of multiple-employer and single-employer plan schedules of changes of employers' net pension liability, employers' net pension liability, employer contributions, and the money-weighted rate of investment returns of the defined benefit pension systems administered by the PERB. The RSI also contains related notes concerning actuarial information of the defined benefit pension plans, Other Post-Employment Benefits (OPEB) for the State Healthcare Benefits and related notes to the OPEB plan.
- (4) Other Supplementary Schedules include schedules of administrative expenses, investment expenses, and professional/consultant fees.

Financial Analysis of the Systems – Defined Benefit Plans

Investments

The State of Montana Board of Investments (BOI), as authorized by state law, invests the defined benefit plans' assets in the new

Consolidated Asset Pension Pool (CAPP) and the Montana Short Term Investment Pool (STIP). Each plan owns an equity position in the pools and receives proportionate investment income from the pools in accordance with respective ownership. Each plan's allocated share of the investment in the pool is shown in the Statement of Fiduciary Net Position of the plan. Investment gains and losses are reported in the Statement of Changes in Fiduciary Net Position.

Economic Conditions

The Board of Investments' Chief Investment Officer, Joe Cullen, had the following remarks on fiscal year 2018 economic conditions: "The U.S. economic conditions during the past fiscal year can be summarized as solid growth in economic activity, continued improvements in the labor market, with increasing, but still low inflation.

"Real U.S. Gross Domestic Product (GDP), which is a measure of the total output of goods and services, adjusted for price changes, was estimated at 2.8% for fiscal year 2018. The recent increase in real GDP is above the average annual GDP increases (+2.3%) during the current U.S. expansion.

"The U.S. labor market strengthened throughout the fiscal year. The unemployment rate fell approximately 0.5% during the fiscal year ending at 3.9%.

"Inflation rose gradually over the fiscal year but remains subdued compared to the long-term average. Recent inflation measures have been slightly above the Federal Reserve's medium-term target of 2%. Oil prices are a significant contributor to inflation estimates and expectations and increased meaningfully (approximately +60%) throughout the year.

“The Federal Open Market Committee (FOMC) of the Federal Reserve seeks to 'foster maximum employment and price stability'. Based on this philosophy, the FOMC raised the target range for the federal funds rate three times during the fiscal year to the current range of 1.75% to 2%.

“Longer-term U.S. interest rates increased during the last year with the ten-year rate increasing by +0.56% to a nominal yield of 2.86% by June 30, 2018.

“The U.S. Dollar experienced significant volatility (plus and minus 7%) relative to other major currencies during the fiscal year. The U.S. dollar declined relative to other currencies in the first-half of the year but gained back most of its losses in the last few months, resulting in a small depreciation relative to other currencies over the entire year.

“The FOMC continues to maintain an accommodative monetary policy and expects a 'sustained expansion of economic activity, strong labor market conditions, and inflation near the Committee’s symmetric 2% objective over the medium term'.” (Written September 14, 2018)

Defined Benefit Plans Total Investments

At June 30, 2018, the PERB’s defined benefit plans held total investments of \$7.3 billion, an increase of \$460.6 million from fiscal year 2017 investment totals. On the following pages 22 and 23, are the schedules of Fiduciary Net Position and Changes in Fiduciary Net Position for the defined benefit plans, including comparative totals from fiscal year 2017.

Analysis of Individual Systems

PERS-DBRP and Education

The PERS-DBRP provides retirement, disability, and death benefits for covered

employees of the State, local governments, certain employees of the Montana University System, and school districts. Member and employer contributions and earnings on investments fund the benefits of the plan. All new members are initially members of the PERS-DBRP and have a 12-month window during which they may choose to remain in the PERS-DBRP or join the PERS-DCRP by filing an irrevocable election. The PERS-DBRP and the DB Education Fund have been combined in these comparisons. The PERS-DBRP net position restricted for pension benefits at June 30, 2018 amounted to \$5.8 billion, an increase of \$307.2 million (5.6%) from \$5.5 billion at June 30, 2017.

Additions to the PERS-DBRP net position restricted for pension benefits include contributions from employer, member, and the state; a statutorily-appropriated contribution from the general fund; and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$243.9 million in fiscal year 2018 from \$233.4 million in fiscal year 2017, an increase of \$10.4 million (4.5%). Contributions increased due to an increased employer contribution rate and an expected inflation rate in salaries. The plan recognized total net investment income of \$478.7 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$591.5 million for the fiscal year ended June 30, 2017, a decrease of \$112.8 million (19.07%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

PERS-DBRP receives a supplemental state appropriation from the State’s general fund. The total amount received for fiscal year 2018 was \$33.6 million. These are recorded as *State Appropriations* on the financial statements.

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Fiduciary Net Position - Defined Benefit Plans

As of June 30, 2018 - and comparative totals for June 30, 2017

(dollars in thousands)

	PERS		PERS-DCRP DISABILITY OPEB		JRS		HPORS		SRS	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Assets:										
Cash and Receivables	\$ 159,525	152,223	350	328	2,344	2,408	4,373	4,025	9,198	8,901
Securities Lending Collateral	36,793	31,162			653	550	947	798	2,284	1,884
Investments	5,652,706	5,326,238	4,111	3,462	100,269	93,939	145,457	136,350	350,935	321,984
Property and Equipment	25	33								
Intangible Assets	1,398	1,298			410	381	348	323	410	381
Total Assets	5,850,447	5,510,954	4,461	3,790	103,676	97,278	151,125	141,496	362,827	333,150
Deferred Outflow of Resources	3									
Liabilities:										
Securities Lending Liability	36,793	31,162			653	550	947	798	2,284	1,884
Other Payables	31,033	4,421	5	1	373	73	979	160	1,664	351
Total Liabilities	67,826	35,583	5	1	1,026	623	1,926	958	3,948	2,235
Deferred Inflow of Resources	\$ 64									
Total Net Position	\$ 5,782,560	5,475,371	4,456	3,789	102,650	96,655	149,199	140,538	358,879	330,915

Changes In Fiduciary Net Position - Defined Benefit Plans

For the year ended June 30, 2018 - and comparative totals for June 30, 2017

(dollars in thousands)

	PERS		PERS-DCRP DISABILITY OPEB		JRS		HPORS		SRS	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Additions:										
Contributions	\$ 243,877	233,427	431	392	1,660	2,288	8,495	7,995	18,835	14,751
Investment Income (Loss)	478,731	591,539	288	333	8,467	10,370	12,283	15,101	29,158	35,516
Total Additions	722,608	824,966	719	725	10,127	12,658	20,778	23,096	47,993	50,267
Deductions:										
Benefits	395,339	366,355	52	54	3,723	3,554	11,546	11,037	18,053	16,700
Refunds	13,345	12,326			149		322	245	1,554	1,416
OPEB Expenses	50	104				1				1
Administrative Expenses	4,948	5,121			264	254	256	248	432	387
Miscellaneous Expenses	2,267	1,547								
Total Deductions	415,949	385,453	52	54	4,136	3,809	12,124	11,530	20,039	18,504
Incr/(Decr) in Net Position	\$ 306,659	439,513	667	671	5,991	8,849	8,654	11,566	27,954	31,763
Prior Period	528				5		6		11	

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	GWPORS		MPORS		FURS		VFCA		TOTAL	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
\$	4,695	4,424	26,265	23,630	26,872	24,520	3,238	1,016	236,860	221,475
	1,231	1,002	2,563	2,109	2,660	2,171	232	207	47,363	39,883
	189,125	171,204	393,802	360,476	408,718	371,014	35,568	35,427	7,280,691	6,820,094
	410	381	367	341	363	337	334	310	25	33
	410	381	367	341	363	337	334	310	4,040	3,752
	195,461	177,011	422,997	386,556	438,613	398,042	39,372	36,960	7,568,979	7,085,237
									3	
	1,231	1,002	2,563	2,109	2,660	2,171	232	207	47,363	39,883
	709	167	2,121	380	2,018	359	410	123	39,312	6,035
	1,940	1,169	4,684	2,489	4,678	2,530	642	330	86,675	45,918
									64	
\$	193,521	175,842	418,313	384,067	433,935	395,512	38,730	36,630	7,482,243	7,039,319

	GWPORS		MPORS		FURS		VFCA		TOTAL	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
\$	10,125	9,742	28,644	25,517	28,495	25,864	2,212	2,065	342,774	322,041
	15,573	18,592	33,238	39,781	34,285	40,844	3,127	3,837	615,150	755,913
	25,698	28,334	61,882	65,298	62,780	66,708	5,339	5,902	957,924	1,077,954
	6,523	5,810	24,567	23,475	23,863	22,336	2,944	2,859	486,610	452,180
	1,136	1,036	2,728	1,043	173	169			19,407	16,235
		1							50	107
	369	329	350	339	329	320	293	289	7,241	7,287
							11	6	2,278	1,553
	8,028	7,176	27,645	24,857	24,365	22,825	3,248	3,154	515,586	477,362
\$	17,670	21,158	34,237	40,441	38,415	43,883	2,091	2,748	442,338	600,592
	9		10		9		8		586	

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Deductions from the PERS-DBRP net position restricted for pension benefits include retirement benefits, refunds, and administrative expenses. For fiscal year 2018, benefits amounted to \$395.3 million, an increase of \$29.0 million (7.9%) from fiscal year 2017. The increase in benefit payments was due to the increase in benefit recipients and the increase in the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA). For fiscal year 2018, refunds amounted to \$13.3 million, an increase of \$1.0 million (8.3%) from fiscal year 2017. The increase in refunds was due to an increase in the number of members taking a refund. For fiscal year 2018, the costs of administering the plan's benefits amounted to \$4.9 million, a decrease of \$173.6 thousand (3.4%) from fiscal year 2017. The decrease in administrative expenses for fiscal year 2018 was due mostly to decreased costs to administer the plan.

An actuarial valuation of the PERS-DBRP assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability increased to 38 years from 30 years. The funded status of the plan increased to 73.81% at June 30, 2018 from 72.76% at June 30, 2017.

The PERS-DBRP actuarial value of assets was less than actuarial liabilities by \$2.02 billion at June 30, 2018, compared with \$2.06 billion at June 30, 2017. The decrease in the unfunded actuarial liability as of the last actuarial valuation is a result of recognizing liability gains of \$134.1 million. In recognizing past investment losses of \$52.3 million it still resulted in a total gain deducting \$81.8 million from the actuarial liability during fiscal year 2018.

PERS-DCRP DISABILITY OPEB

The PERS-DCRP Disability OPEB provides disability benefits for defined contribution plan

members. A percentage of employer contributions and earnings on investments fund the benefits of the plan. The DCRP Disability OPEB net position restricted for pensions at June 30, 2018 amounted to \$4.5 million, an increase of \$667 thousand (17.6%) from \$3.8 million at June 30, 2017.

Additions to the DCRP Disability OPEB net position restricted for pension benefits include employer contributions and investment income. For the fiscal year ended June 30, 2018, employer contributions amounted to \$431 thousand, an increase of \$39 thousand (9.9%) from fiscal year 2017. Contributions increased due to an increase in PERS-DCRP participants. The plan recognized total net investment income of \$288 thousand for the fiscal year ended June 30, 2018 compared with total net investment income of \$333 thousand for the fiscal year ended June 30, 2017, a decrease of \$45 thousand (13.46%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the DCRP Disability OPEB net position restricted for pension benefits are disability retirement benefits. For fiscal year 2018, benefits amounted to \$52 thousand, a decrease of \$1.8 thousand (3.2%) from fiscal year 2017.

An actuarial valuation of the DCRP Disability OPEB assets and disability benefit obligations is performed annually. The valuation was performed using the June 30, 2018 data and the 2017 experience study demographic and economic assumptions. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability decreased to zero years from 19 years at June 30, 2017. The funded status of the plan increased to 102.32% at June 30, 2018 from 87.14% at June 30, 2017. The unfunded actuarial liability decreased to \$(101.2)

thousand at June 30, 2018 from \$510 thousand at June 30, 2017, as a result of a total gain deducting \$583.4 thousand from the expected actuarial liability.

During the year ended June 30, 2018, the DCRP Disability OPEB assets gained 7.24% on an annualized market basis. This return was 3.74% above the DCRP Disability OPEB assumed rate of return of 3.50%. The plan earned \$146,925 more than the assumed rate at June 30, 2018, and \$114,485 less than the assumed rate at June 30, 2017.

JRS

The JRS provides retirement, disability, and death benefits for all Montana judges of the district courts, justices of the Supreme Court, the Chief Water Judge and the Associate Water Judge. Member and employer contributions and earnings on investments fund the benefits of the plan. The JRS net position restricted for pensions at June 30, 2018 amounted to \$102.7 million, an increase of \$6.0 million (6.2%) from \$96.7 million at June 30, 2017.

Additions to the JRS net position restricted for pension benefits include member and employer contributions, and investment income. For the fiscal year ended June 30, 2018, contributions amounted to \$1.7 million, a decrease of \$628 thousand (27.5%) from fiscal year 2017. Contributions decreased due to a moratorium on employer contributions starting January 1, 2018. The plan recognized total net investment income of \$8.5 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$10.4 million for the fiscal year ended June 30, 2017, a decrease of \$1.9 million (18.35%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the JRS net position restricted for pension benefits include retirement benefits and administrative expenses. For fiscal year

2018, benefits amounted to \$3.7 million, an increase of \$168.9 thousand (4.8%) from fiscal year 2017. The increase in benefits was due to an increase in the number of retirees and the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA) or the minimum benefit adjustment for non-GABA recipients. For fiscal year 2018, administrative expenses amounted to \$264 thousand, an increase of \$10.7 thousand (4.2%) from fiscal year 2017. The increase in administrative expenses for fiscal year 2018 was due to increased costs to administer the plan.

An actuarial valuation of the JRS assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the years to amortize the unfunded actuarial liability is still zero due to the actuarial surplus. The funded status of the plan decreased to 161.29% at June 30, 2018 from 167.06% at June 30, 2017.

The JRS actuarial value of assets was greater than actuarial liabilities by a \$38.5 million actuarial surplus at June 30, 2018, compared with a \$39.0 million actuarial surplus at June 30, 2017. There was still an increase in the unfunded actuarial liability as of the last actuarial valuation, which is a result of recognizing liability losses of \$2.5 million and in recognizing past investment losses of \$727.8 thousand resulting in a total loss adding \$3.3 million to the actuarial liability during fiscal year 2018.

HPORS

The HPORS provides retirement, disability, and death benefits for members of the Montana Highway Patrol. HPORS also has an option for members to participate in a Deferred Retirement Option Plan (DROP). Member and employer contributions, a statutory appropriation from the general fund, and earnings on investments fund the benefits of the

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plan. The HPORS net position restricted for pensions at June 30, 2018 amounted to \$149.2 million, an increase of \$8.7 million (6.2%) from \$140.5 million at June 30, 2017.

Additions to the HPORS net position restricted for pension benefits include employer and member contributions, a statutory appropriation from the general fund, and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$8.5 million from \$8.0 million in fiscal year 2017, an increase of \$500 thousand (6.3%). Contributions increased slightly as a result of an increase in active members contributing to the plan. The plan recognized total net investment income of \$12.3 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$15.1 million for the fiscal year ended June 30, 2017, a decrease of \$2.8 million (18.7%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the HPORS net position restricted for pension benefits include retirement benefits, refunds, and administrative expenses. For fiscal year 2018, benefits amounted to \$11.5 million, an increase of \$509 thousand (4.6%) from fiscal year 2017. The slight increase in benefit payments was due to an increase in benefit recipients and the increase in the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA) or the minimum monthly benefit for non-GABA recipients. For fiscal year 2018, refunds amounted to \$322 thousand, an increase of \$77 thousand (31.6%) from fiscal year 2017. The slight increase in refunded amounts was due to less refunds being processed at larger dollar amounts.

For fiscal year 2018, administrative expenses were \$256 thousand, an increase of \$8.2 thousand (3.3%) from fiscal year 2017. The increase in administrative expenses for fiscal

year 2018 was due to increased costs to administer the plan.

An actuarial valuation of the HPORS assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability is 40 years an increase from 37 years at June 30, 2017. The funded status of the plan decreased to 64.03% at June 30, 2018 from 64.35% at June 30, 2017.

The HPORS actuarial value of assets was less than actuarial liabilities by \$82.7 million at June 30, 2018, compared with \$78.2 million at June 30, 2017. The increase in the unfunded actuarial liability as of the last actuarial valuation is a result of recognizing liability losses of \$2.5 million and recognizing past investment losses of \$1.1 million resulting in a total loss adding \$3.6 million to the actuarial liability during fiscal year 2018.

SRS

The SRS provides retirement, disability, and death benefits for all Department of Justice criminal investigators hired after July 1, 1993, detention officers hired after July 1, 2005, and all Montana sheriffs. Member and employer contributions and earnings on investments fund the benefits of the plan. The SRS net position restricted for pension benefits at June 30, 2018 amounted to \$358.9 million, an increase of \$27.9 million (8.5%) from \$331.0 million at June 30, 2017.

Additions to the SRS net position restricted for pension benefits include member and employer contributions, and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$18.8 million from \$14.8 million in fiscal year 2017, for an increase of \$4.0 million (27.7%). The increase in contributions was due to an increase in active members contributing to the plan and the increase in the

member and employer contribution rates. The plan recognized total net investment income of \$29.1 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$35.5 million for the fiscal year ended June 30, 2017, a decrease of \$6.4 million (17.9%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the SRS net position restricted for pension benefits include retirement benefits, refunds, and administrative expenses. For fiscal year 2018, benefits amounted to \$18.1 million, an increase of \$1.4 million (8.1%) from fiscal year 2017. The increase in benefit payments was due to an increase in benefit recipients and the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA). For fiscal year 2018, refunds amounted to \$1.6 million, an increase of \$138 thousand (9.8%) from fiscal year 2017. The increase in refunds was due to an increase in the number of members taking a refund. For fiscal year 2018, administrative expenses amounted to \$432 thousand, an increase of \$44.7 thousand (11.5%) from fiscal year 2017. The increase in administrative expenses for fiscal year 2018 was due to increased costs to administer the plan.

An actuarial valuation of the SRS assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability decreased to 21 years from 25 years at June 30, 2017. The funded status of the plan increased to 81.04% at June 30, 2018 from 80.74% at June 30, 2017.

The SRS actuarial value of assets was less than actuarial liabilities by \$82.8 million at June 30, 2018, compared with \$79.2 million at June 30, 2017. The increase in the unfunded actuarial liability as of the last actuarial valuation is a

result of recognizing liability losses of \$2.7 million and recognizing past investment losses of \$2.4 million, resulting in a total loss adding \$5.1 million to the actuarial liability during fiscal year 2018.

GWPORS

The GWPORS provides retirement, disability, and death benefits for game wardens, warden supervisory personnel and state peace officers. Member and employer contributions and earnings on investments fund the benefits of the plan. The GWPORS net position restricted for pension benefits at June 30, 2018, amounted to \$193.5 million, an increase of \$17.7 million (10.1%) from \$175.8 million at June 30, 2017.

Additions to the GWPORS net position restricted for pension benefits include member and employer contributions, and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$10.1 million from \$9.7 million in fiscal year 2017, an increase of \$383 thousand (3.9%). The increase in contributions was due to an increase in active members contributing to the plan. The plan recognized total net investment income of \$15.6 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$18.6 million for the fiscal year ended June 30, 2017, a decrease of \$3.0 million (16.2%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the GWPORS net position restricted for pensions include retirement benefits, refunds, and administrative expenses. For fiscal year 2018, benefits amounted to \$6.5 million, an increase of \$713 thousand (12.3%) from fiscal year 2017. The increase in benefit payments was due to the increase in benefit recipients and the increase in the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA). For fiscal year 2018, refunds amounted to \$1.1 million, an

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increase of \$100 thousand (9.7%) from fiscal year 2017. The increase in refunds was due to an increase in refund requests from members. For fiscal year 2018, administrative expenses amounted to \$369 thousand, an increase of \$40.5 thousand (12.3%) from fiscal year 2017. The increase in administrative expenses for fiscal year 2018 was due to increased costs to administer the plan.

An actuarial valuation of the GWPORS assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability increased to 72 years from 70 years at June 30, 2017. The funded status of the plan increased to 82.95% at June 30, 2018 from 81.01% at June 30, 2017.

The GWPORS actuarial value of assets was less than actuarial liabilities by \$39.2 million at June 30, 2018, compared with \$41.3 million at June 30, 2017. The decrease in unfunded actuarial liability as of the last actuarial valuation is a result of recognizing liability gains of \$4.4 million and recognizing past investment losses of \$1.1 million, resulting in a total gain deducting \$3.2 million from the actuarial liability during fiscal year 2018.

MPORS

The MPORS provides retirement, disability, and death benefits for municipal police officers employed by first- and second-class cities, and other cities that adopt the plan. MPORS also has an option for members to participate in a Deferred Retirement Option Plan (DROP). Member, employer, and state contributions and earnings on investments fund the benefits of the plan. The MPORS net position restricted for pension benefits at June 30, 2018 amounted to \$418.3 million, an increase of \$34.2 million (8.9%) from \$384.1 million at June 30, 2017.

Additions to the MPORS net position restricted

for pension benefits include employer, member, and state contributions, and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$28.6 million from \$25.5 million in fiscal year 2017, for an increase of \$3.1 million (12.3%). Contributions increased due to an increase in active members contributing to the plan. The plan recognized total net investment income of \$33.2 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$39.8 million for fiscal year ended June 30, 2017, a decrease of \$6.5 million (16.5%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the MPORS net position restricted for pension benefits include retirement benefits, refunds, and administrative expenses. For fiscal year 2018 benefits amounted to \$24.6 million, an increase of \$1.1 million (4.7%) from fiscal year 2017. The increase in benefit payments was due to the increase in benefit recipients and the increase in the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA) or the minimum benefit adjustment for non-GABA recipients. For fiscal year 2018, refunds amounted to \$2.7 million, an increase of \$1.7 million (161.4%) from fiscal year 2017. The increase in refunds was due to an increase in refund requests from members. For fiscal year 2018, administrative expenses were \$350 thousand, an increase of \$11 thousand (3.2%) from fiscal year 2017. The increase in administrative expenses for fiscal year 2018 was due to increased costs to administer the plan.

An actuarial valuation of the MPORS assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability increased to 20 years from 16 years at June 30,

2017. The funded status of the plan decreased to 67.69% at June 30, 2018 from 68.66% at June 30, 2017.

The MPORS actuarial value of assets was less than actuarial liabilities by \$197.4 million at June 30, 2018, compared with \$176.3 million at June 30, 2017. The increase in the actuarial liability as of the last actuarial valuation is a result of recognizing other liability losses of \$21.5 million and recognizing past investment losses of \$3.2 million, resulting in a total liability loss adding \$24.8 million to the actuarial liability during fiscal year 2018.

FURS

The FURS provides retirement, disability, and death benefits for firefighters employed by first- and second-class cities; other cities and rural fire departments that adopt the plan; and firefighters hired by the Montana Air National Guard (MANG) on or after October 1, 2001. Member, employer, and state contributions, and earnings on investments fund the benefits of the plan. The FURS net position restricted for pension benefits at June 30, 2018, amounted to \$433.9 million, an increase of \$38.4 million (9.7%) from \$395.5 million at June 30, 2017.

Additions to the FURS net position restricted for pension benefits include employer, member, and state contributions, and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$28.5 million from \$25.9 million in fiscal year 2017, an increase of \$2.6 million (10.2%). Contributions increased due to an increase of active members contributing to the plan. The plan recognized total net investment income of \$34.3 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$40.8 million for the fiscal year ended June 30, 2017, a decrease of \$6.6 million (16.1%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the FURS net position restricted for pension benefits include retirement benefits, refunds, and administrative expenses. For fiscal year 2018, benefits amounted to \$23.9 million, an increase of \$1.5 million (6.8%) from fiscal year 2017. The increase in benefit payments was due to the increase in benefit recipients and the increase in the average recipient's benefit due to the guaranteed annual benefit adjustment (GABA) or the minimum benefit adjustment for non- GABA recipients. For fiscal year 2018, refunds amounted to \$173 thousand, an increase of \$4 thousand (2.3%) from \$169 thousand in fiscal year 2017. The increase in refunds was due to an increase in refund requests from members. For fiscal year 2018, administrative expenses were \$329 thousand, an increase of \$9 thousand (2.8%) from fiscal year 2017. The increase in administrative expenses for fiscal year 2018 was due to increased costs to administer the plan.

An actuarial valuation of the FURS assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the years to amortize the unfunded actuarial liability stayed at 10 years, same as at June 30, 2017. The funded status of the plan increased to 78.27% at June 30, 2018 from 76.13% at June 30, 2017.

The FURS actuarial value of assets was less than actuarial liabilities by \$119.1 million at June 30, 2018, compared with \$124.7 million at June 30, 2017. The decrease in unfunded actuarial liability as of the last actuarial valuation is a result of recognizing other liability gains of \$877.6 thousand and recognizing past investment losses of \$3.2 million, resulting in a total liability loss adding \$2.4 million to the actuarial liability during fiscal year 2018.

FINANCIAL SECTION

VFCA

The VFCA provides retirement, disability, and death benefits for volunteer firefighters who are members of eligible volunteer fire companies in unincorporated areas. State contributions and earnings on investments fund the benefits of the plan. The VFCA net position restricted for pension benefits at June 30, 2018 amounted to \$38.7 million, an increase of \$2.1 million (5.7%) from \$36.6 million at June 30, 2017.

Additions to the VFCA net position restricted for pension benefits include state contributions and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$2.2 million from \$2.1 million in fiscal year 2017, an increase of \$148 thousand (7.1%). Contributions increased because of increased fire insurance premium taxes distributed to the VFCA from the general fund. The plan recognized total net investment income of \$3.1 million for the fiscal year ended June 30, 2018, compared with total net investment income of \$3.8 million for the fiscal year ended June 30, 2017, a decrease of \$711 thousand (18.5%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the VFCA net position restricted for pension benefits include retirement benefits, administrative expenses, and supplemental insurance payments. For fiscal year 2018, benefits amounted to \$2.9 million, an increase of \$84.6 thousand (3.0%) from fiscal year 2017. The increase in benefit payments was due to the increase in benefit recipients. For fiscal year 2018, administrative expenses amounted to \$293 thousand, an increase of \$4.2 thousand (1.5%) from fiscal year 2017. The increase in administrative expenses for fiscal year 2018 was due to increased costs to administer the plan. For fiscal year 2018, supplemental insurance payments amounted to \$11 thousand, an

increase of \$5 thousand from fiscal year 2017. The increase was due to an increase of supplemental insurance claims by VFCA companies.

An actuarial valuation of the VFCA assets and benefit obligations is performed annually. At June 30, 2018, the date of the most recent actuarial valuation, the number of years to amortize the unfunded actuarial liability decreased to 5 years from 6 years at June 30, 2017 and the funded status of the plan increased to 82.76% at June 30, 2018 from 80.56% at June 30, 2017.

The VFCA actuarial value of assets was less than actuarial liabilities by \$8.0 million at June 30, 2018, compared with \$8.9 million at June 30, 2017. The decrease in unfunded actuarial liability as of the last actuarial valuation is a result of recognizing other liability gains of \$112.6 thousand and in recognizing past investment losses of \$384.5 thousand, resulting in a total liability loss adding \$271.9 thousand to the actuarial liability during fiscal year 2018.

Actuarial Valuations and Funding Progress

An experience study was performed during fiscal year 2017 for the six-year period of July 1, 2010 to June 30, 2016. The experience study resulted in changes to demographic and economic actuarial assumptions and implementation of new actuarial factors.

An actuarial valuation of each of the defined benefit plans is performed annually. The most recent actuarial valuation was performed for fiscal year ended June 30, 2018. The DCRP Disability OPEB plan valuation was last performed on June 30, 2018.

The PERB's funding objective is to meet long-term benefit obligations through investment

income and contributions. Employer and member contributions and other contributions for some systems, and the income from investments provide the cash flow needed to finance future retirement benefits. The Actuarial Determined Contribution (ADC) is a critical component of funding for defined benefit plans. The ADC, as defined by GASB, is a target or recommended contribution to a defined benefit pension plan for the reporting period. The ADC is determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

Investment earnings are also critical to the defined benefit plans' funding; investment losses deteriorate the plans' funding. Positive market returns were experienced in fiscal years 2010 through 2018. The asset smoothing methods utilized by the plans limits the impacts to four years. The funding status for all defined benefit plans increased in the latest valuation, except for JRS, HPORS and MPORS which had slight decreases.

As required by Article VIII, section 15, of the Montana Constitution and section 19-2-409, MCA, the public retirement plans are to be funded on an actuarially sound basis. Public pension plans are considered actuarially sound if the unfunded actuarial accrued liability amortization period is 30 years or less. All systems were funded on an actuarially sound basis in 2007 and 2008. The impact of negative investment returns in 2008 and 2009 resulted in the PERS-DBRP not amortizing within 30 years in fiscal years 2009 through 2012; SRS not amortizing within 30 years in fiscal years 2009 through 2016; and GWPORS not amortizing within 30 years in fiscal years 2009 through 2017.

According to the PERB's June 30, 2018 actuarial valuations, the unfunded liability of

PERS-DBRP, HPORS and GWPORS does not amortize within 30 years.

Overall, funding ratios range from a high of 161.29% (JRS) to a low of 64.03% (HPORS). The Schedule of Funding Progress, in the Actuarial Section of this report, shows the funding for the last ten fiscal years. The table also shows the amount by which actuarial assets exceeded or fell short of actuarial liabilities. The actuary performs a smoothing of investment gains or losses over a period of four years. At June 30, 2018, the actuarial value of assets of all plans was less than the market value of assets by \$96 million due to an average positive 8.78% market return in fiscal year 2018.

Defined Contribution Plans

The PERB administers two defined contribution plans: The Public Employees' Retirement System-Defined Contribution Retirement Plan (PERS-DCRP) and the Deferred Compensation (457) Plan. The schedules of Fiduciary Net Position and Changes in Fiduciary Net Position for the two defined contribution plans including comparative totals from fiscal year 2017 are presented on page 34.

PERS-DCRP

The PERS-DCRP is established under section 401(a) of the Internal Revenue Code and Title 19, chapters 2 & 3 of the Montana Code Annotated (MCA). This plan provides retirement, disability, and death benefits for plan members. This plan was available to all active PERS members effective July 1, 2002. All new members are initially members of the PERS-DBRP and have a 12-month window during which they may choose to remain in the PERS-DBRP or join the PERS-DCRP by filing an irrevocable election. The plan member and employer contributions and earnings on investments fund the benefits of the plan. The

FINANCIAL SECTION

PERS-DCRP net position restricted for pension benefits at June 30, 2018, amounted to \$227.8 million, an increase of \$34.2 million (17.6%) from \$193.6 million at June 30, 2017.

Additions to the PERS-DCRP net position restricted for pension benefits include contributions and investment income. For the fiscal year ended June 30, 2018, contributions increased to \$25.2 million from \$23.0 million in fiscal year 2017, an increase of \$2.2 million (9.6%). Contributions increased due to an increase in the total compensation reported as a result of an increase in active participants and an increase in employer contribution rates. The plan recognized net investment income of \$19.6 million for fiscal year ended 2018, compared with net investment income of \$22.4 million in fiscal year 2017, a decrease of \$2.8 million (12.4%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the PERS-DCRP net position restricted for pension benefits include member and beneficiary distributions, administrative expenses, and miscellaneous expenses. For fiscal year 2018, distributions amounted to \$9.7 million, an increase of \$2.7 million (38.5%) from fiscal year 2017. The increase in distributions was due to more defined contribution members taking IRS permitted rollovers and periodic or lump sum distributions at larger dollar amounts. For fiscal year 2018, the costs of administering the plan amounted to \$749 thousand, a decrease of \$75 thousand (9.1%) from fiscal year 2017. The decrease in administrative expenses for fiscal year 2018 was due to the decreased costs to administer the plan.

Miscellaneous expenses are the PERB's administrative fees assessed by the vendors based on account balances. Miscellaneous expenses increased to \$267 thousand in fiscal year 2018 from \$225 thousand in fiscal year

2017, an increase of \$41 thousand (18.4%). The increase in miscellaneous expenses was due to increased number of members investing in the plan.

Deferred Compensation (457(b)) Plan

The Deferred Compensation Plan is established under section 457(b) of the Internal Revenue Code and Title 19, chapter 50 of the Montana Code Annotated (MCA). This plan is a voluntary supplemental retirement savings plan for those who are eligible and choose to participate. The Deferred Compensation Plan is funded by contributions and by investment earnings. The Deferred Compensation net position restricted for pension benefits at June 30, 2018 amounted to \$502.3 million, an increase of \$22.1 million (4.6%) from \$480.2 million at June 30, 2017.

Additions to the Deferred Compensation Plan net position restricted for pension benefits include contributions and investment income. For fiscal year 2018, contributions decreased to \$23.5 million from \$24.4 million in fiscal year 2017, a decrease of \$890 thousand (3.6%). The decrease is due to participants not contributing as much to the plan. The plan recognized net investment income of \$29.3 million for fiscal year 2018, compared with net investment income of \$35.9 million for fiscal year 2017, a decrease of \$6.6 million (18.4%). The decrease in investment income is a result of solid but low growth in U.S. and global markets.

Deductions from the Deferred Compensation Plan net position restricted for pension benefits include member and beneficiary distributions, administrative expenses, and miscellaneous expenses. For fiscal year 2018, distributions amounted to \$29.3 million, an increase of \$2.0 million (7.2%) from \$27.3 million in fiscal year 2017. The increase in distributions was due to more deferred compensation participants taking distributions. The administrative

expenses decreased to \$563 thousand in fiscal year 2018 from \$613 thousand in fiscal year 2017, a decrease of \$50 thousand (8.2%). The decrease in administrative expenses for fiscal year 2018 was due to the decreased costs to administer the plan.

Miscellaneous expenses are the PERB's administrative fees assessed by the vendors

based on account balances. Miscellaneous expenses increased to \$898 thousand in fiscal year 2018 from \$846 thousand in fiscal year 2017, an increase of \$53 thousand (6.2%) from fiscal year 2017. The increase in miscellaneous expense was due to increased number of members investing in the plan.

FINANCIAL SECTION

Fiduciary Net Position - Defined Contribution Plans

As of June 30, 2018 - and comparative totals for June 30, 2017

(dollars in thousands)

	PERS-DCRP		457-PLAN		TOTAL	
	2018	2017	2018	2017	2018	2017
Assets:						
Cash and Receivables	\$ 2,313	2,067	704	647	3,017	2,714
Securities Lending Collateral						
Investments	225,634	192,153	501,608	479,575	727,242	671,728
Property and Equipment	3	4	2	3	5	7
Intangible Assets	334	310	396	368	730	678
Total Assets	228,284	194,534	502,710	480,593	730,994	675,127
Deferred Outflow of Resources*						
Liabilities:						
Other Payables	494	901	403	403	897	1,304
Total Liabilities	494	901	403	403	897	1,304
Deferred Inflow of Resources	\$ 7		3		10	
Total Net Position - restricted for pensions	\$ 227,783	193,633	502,304	480,190	730,087	673,823

* Deferred Outflows totaled less than \$1,000, as a result will not appear on this statement

Changes in Fiduciary Net Position - Defined Contribution Plans

For the year ended June 30, 2018 - and comparative totals for June 30, 2017

(dollars in thousands)

	PERS-DCRP		457-PLAN		TOTAL	
	2018	2017	2018	2017	2018	2017
Additions:						
Contributions	\$ 25,255	23,045	23,543	24,434	48,798	47,479
Investment Income (Loss)	19,602	22,368	29,293	35,889	48,895	58,257
Total Additions	44,857	45,413	52,836	60,323	97,693	105,736
Deductions:						
Benefits						
Distributions	9,746	7,038	29,302	27,329	39,048	34,367
OPEB Expenses	5	12	3	8	8	20
Administrative Expenses	749	824	563	613	1,312	1,437
Miscellaneous Expenses	267	225	898	846	1,165	1,071
Total Deductions	10,767	8,099	30,766	28,796	41,533	36,895
Incr/(Decr) in Net Position	\$ 34,090	37,314	22,070	31,527	56,160	68,841
Prior Period	\$ 61		43		104	

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FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Statement of Fiduciary Net Position - Pension (And Other Employee Benefit) Trust Funds as of June 30, 2018

	PERS-DBRP	PERS-DCRP DISABILITY OPEB	JRS	HPORS	SRS	GWPORS
Assets						
Cash and Short-term Investments	\$ 154,224,251	335,114	2,335,173	4,240,751	8,718,737	4,631,069
Securities Lending Collateral (Note A6)	36,792,892		652,642	946,762	2,284,201	1,230,998
Receivables						
Interest	213,992	510	3,487	5,783	13,205	6,943
Accounts Receivable	4,398,139	13,943	5,091	126,241	466,280	57,201
Due from Other Funds	672,567					
Due from Primary Government						
Notes Receivable	15,952					
Total Receivables	5,300,650	14,453	8,578	132,024	479,485	64,144
Investments, at fair value (Note A6)						
Commingled Equity Securities		4,110,614				
CAPP Investment Pool	5,652,705,617		100,269,124	145,456,514	350,935,023	189,125,428
Defined Contributions Fixed Investments						
Defined Contributions Variable Investments						
Deferred Compensation Life Insurance						
Total Investments	5,652,705,617	4,110,614	100,269,124	145,456,514	350,935,023	189,125,428
Capital Assets						
Property and Equipment, at cost,						
net of Accumulated Depreciation (Note A2)	24,704		366	311	366	366
Intangible Assets at cost,						
net of amortization expense	1,398,370		410,443	348,399	410,443	410,443
Total Capital Assets	1,423,074		410,809	348,710	410,809	410,809
Total Assets	5,850,446,484	4,460,181	103,676,326	151,124,761	362,828,255	195,462,448
Deferred Outflow of Resources	2,698					
Liabilities						
Securities Lending Liability	36,792,892		652,642	946,762	2,284,201	1,230,998
Accounts Payable	30,246,418	4,320	359,728	928,837	1,480,743	585,046
Unearned Revenue	352,690	380	589	7,735	2,677	6,508
Due to Other Funds			12,679	42,559	180,274	117,368
Compensated Absences	360,676					
OPEB Implicit Rate Subsidy LT	73,601					
Total Liabilities	67,826,277	4,700	1,025,638	1,925,893	3,947,895	1,939,920
Deferred Inflow of Resources	64,307					
Net Position - Restricted for Pension Benefits	\$ 5,782,558,598	4,455,481	102,650,688	149,198,868	358,880,360	193,522,528

The notes to the financial statements are an integral part of this statement.

FINANCIAL SECTION

Defined Benefit Pension Plans				Defined Contribution Plans			Total Pension Trust Funds
MPORS	FURS	VFCA	Total Defined Benefit Pension Plans	PERS-DCRP	457 Plan	Total Defined Contribution Plans	
9,988,609	10,313,959	3,229,696	198,017,359	2,006,943	149,817	2,156,760	200,174,119
2,563,218	2,660,305	231,507	47,362,525				47,362,525
14,329	14,819	1,511	274,579	2,090	196	2,286	276,865
404,576	386,226	6,438	5,864,135	303,937	553,893	857,830	6,721,965
			672,567				672,567
15,857,660	16,156,512		32,014,172				32,014,172
			15,952				15,952
16,276,565	16,557,557	7,949	38,841,405	306,027	554,089	860,116	39,701,521
			4,110,614				4,110,614
393,802,035	408,718,147	35,567,727	7,276,579,615				7,276,579,615
				14,995,719	226,330,837	241,326,556	241,326,556
				210,638,214	275,264,685	485,902,899	485,902,899
					12,316	12,316	12,316
393,802,035	408,718,147	35,567,727	7,280,690,229	225,633,933	501,607,838	727,241,771	8,007,932,000
328	324	298	27,063	3,033	2,521	5,554	32,617
367,490	362,717	334,082	4,042,387	334,082	396,125	730,207	4,772,594
367,818	363,041	334,380	4,069,450	337,115	398,646	735,761	4,805,211
422,998,245	438,613,009	39,371,259	7,568,980,968	228,284,018	502,710,390	730,994,408	8,299,975,376
			2,698	275	135	410	3,108
2,563,218	2,660,305	231,507	47,362,525				47,362,525
1,960,942	1,881,794	319,670	37,767,498	430,008	372,317	802,325	38,569,823
34,939	29,726	2,298	437,542	2,114		2,114	439,656
124,850	106,679	88,159	672,568				672,568
			360,676	54,606	27,240	81,846	442,522
			73,601	7,507	3,687	11,194	84,795
4,683,949	4,678,504	641,634	86,674,410	494,235	403,244	897,479	87,571,889
			64,307	6,559	3,222	9,781	74,088
418,314,296	433,934,505	38,729,625	7,482,244,949	227,783,499	502,304,059	730,087,558	8,212,332,507

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Statement of Changes in Fiduciary Net Position - Pension (And Other Employee Benefit) Trust Funds

for the year ended June 30, 2018

	PERS-DBRP	PERS-DCRP DISABILITY OPEB	JRS	HPORS	SRS	GWORS
Additions						
Contributions (Note C)						
Employer	\$ 106,613,081	430,725	1,084,599	5,857,388	10,359,609	4,609,095
Plan Member	101,993,235		575,050	2,385,429	8,454,323	5,508,880
Interest Reserve Buyback	82,036			1,097	14,959	3,268
Retirement Incentive Program	2,068					
Miscellaneous Revenue	526,932		281	1,105	6,532	3,971
State Contributions	1,024,328			250,150		
State Appropriations	33,634,846					
Nonvested Member Forfeitures						
<i>Total Contributions</i>	243,876,526	430,725	1,659,930	8,495,169	18,835,423	10,125,214
Investments (Note A6, Note A8)						
Net Appreciation (Depreciation)						
in Fair Value of Investments	511,205,616	298,826	9,045,355	13,115,558	31,145,096	16,640,227
Interest	2,096,955	4,826	34,433	53,279	130,985	67,862
Dividends						
Investment Expense	(35,238,061)	(15,654)	(624,393)	(903,088)	(2,159,057)	(1,156,845)
<i>Net Investment Income</i>	478,064,510	287,998	8,455,395	12,265,749	29,117,024	15,551,244
Securities Lending Income						
Securities Lending Income	1,108,711		19,651	28,413	67,916	36,397
Securities Lending Rebate and Fees	(442,424)		(7,842)	(11,338)	(27,102)	(14,524)
<i>Net Securities Lending Income</i>	666,287		11,809	17,075	40,814	21,873
<i>Total Net Investment Income</i>	478,730,797	287,998	8,467,204	12,282,824	29,157,838	15,573,117
Total Additions	722,607,323	718,723	10,127,134	20,777,993	47,993,261	25,698,331
Deductions (Note C)						
Benefits	395,338,673	52,383	3,723,271	11,545,732	18,052,544	6,522,921
Refunds/Distributions	12,619,498		149,051	321,840	1,490,014	1,105,281
Refunds to Other Plans	725,998				64,184	30,868
Transfers to MUS-RP	198,062					
Transfers to DCRP	2,068,870					
Supplemental Insurance Payments						
OPEB Expenses	50,013					
Administrative Expenses	4,947,890		264,496	256,309	432,091	369,184
Miscellaneous Expenses						
<i>Total Deductions</i>	415,949,004	52,383	4,136,818	12,123,881	20,038,833	8,028,254
<i>Net Increase (Decrease)</i>	306,658,319	666,340	5,990,316	8,654,112	27,954,428	17,670,077
Net Position Restricted for Pension Benefits						
Beginning of Year	5,475,372,351	3,789,141	96,655,023	140,538,707	330,914,926	175,843,380
Prior Period Adjustments (Note A7)	527,928		5,349	6,049	11,006	9,071
End of Year	\$ 5,782,558,598	4,455,481	102,650,688	149,198,868	358,880,360	193,522,528

The notes to the financial statements are an integral part of this statement.

FINANCIAL SECTION

Defined Benefit Pension Plans				Defined Contribution Plans			Total Pension Trust Funds 2018
MPORS	FURS	VFCA	Total Defined Benefit Pension Plans	PERS-DCRP	457 Plan	Total Defined Contribution Plans	
7,721,837	7,034,779		143,711,113	11,898,611	93,500	11,992,111	155,703,224
5,038,941	5,305,658		129,261,516	12,447,453	22,849,597	35,297,050	164,558,566
7,411	9,175		117,946				117,946
			2,068				2,068
36,113	18,386		593,320	108,127	600,256	708,383	1,301,703
15,840,158	16,127,433	2,212,113	35,454,182	54,216		54,216	35,508,398
			33,634,846				33,634,846
				746,144		746,144	746,144
28,644,460	28,495,431	2,212,113	342,774,991	25,254,551	23,543,353	48,797,904	391,572,895
35,498,226	36,618,262	3,336,734	656,903,900	12,784,049	13,522,019	26,306,068	683,209,968
143,192	150,103	13,058	2,694,693	6,880,707	16,734,528	23,615,235	26,309,928
(2,450,041)	(2,531,506)	(227,347)	(45,305,992)	(62,690)	(963,919)	(1,026,609)	(46,332,601)
33,191,377	34,236,859	3,122,445	614,292,601	19,602,066	29,292,628	48,894,694	663,187,295
77,086	79,643	7,156	1,424,973				1,424,973
(30,761)	(31,781)	(2,855)	(568,627)				(568,627)
46,325	47,862	4,301	856,346				856,346
33,237,702	34,284,721	3,126,746	615,148,947	19,602,066	29,292,628	48,894,694	664,043,641
61,882,162	62,780,152	5,338,859	957,923,938	44,856,617	52,835,981	97,692,598	1,055,616,536
24,566,646	23,863,193	2,944,046	486,609,409				486,609,409
2,675,247	173,278		18,534,209	9,746,223	29,302,439	39,048,662	57,582,871
52,810			873,860				873,860
			198,062				198,062
			2,068,870				2,068,870
		11,175	11,175				11,175
			50,013	5,101	2,506	7,607	57,620
350,328	329,234	293,142	7,242,674	749,186	562,688	1,311,874	8,554,548
				266,540	898,099	1,164,639	1,164,639
27,645,031	24,365,705	3,248,363	515,588,272	10,767,050	30,765,732	41,532,782	557,121,054
34,237,131	38,414,447	2,090,496	442,335,666	34,089,567	22,070,249	56,159,816	498,495,482
384,067,551	395,511,561	36,630,943	7,039,323,583	193,632,571	480,190,473	673,823,044	7,713,146,627
9,614	8,497	8,186	585,700	61,361	43,337	104,698	690,398
418,314,296	433,934,505	38,729,625	7,482,244,949	227,783,499	502,304,059	730,087,558	8,212,332,507

Public Employees' Retirement Board

A Component Unit of the State of Montana

Notes to the Financial Statements

for the Fiscal Year Ended June 30, 2018

The Public Employees' Retirement Board (PERB) is an independent, seven-member board, appointed by the Governor. The members are assigned five-year, staggered terms. The PERB consists of two members at large, two active defined benefit public employees, one active defined contribution public employee, one member experienced in investments, and one retired public employee. The PERB approves the annual operating budget, developed by the Montana Public Employee Retirement Administration (MPERA) management, before the beginning of the fiscal year. As governed by statute, the PERB's defined benefit administrative expenses may not exceed 1.5 percent of the total defined benefit plan retirement benefits paid. In addition, the PERB decides its legislative priorities, hires the executive director, establishes the policies and procedures that govern operations at MPERA, and hears and rules on appeal matters of disabilities, retirees, and members. Board members do not receive compensation for their service to MPERA, but are reimbursed for necessary expenses incurred while serving.

The PERB oversees ten retirement plans, an OPEB, and the related member education funds. The Public Employees' Retirement System Defined Contribution Disability Other Post-Employment Benefit (PERS-DCRP Disability OPEB) is a trust fund providing a defined benefit for disabled members of the PERS-DCRP. The retirement plans are eight defined benefit plans and two defined contribution plans. The defined benefit retirement plans are the Public Employees' Retirement System (PERS-DBRP), Judges' Retirement System (JRS), Highway Patrol Officers' Retirement System (HPORS),

Sheriffs' Retirement System (SRS), Game Wardens' and Peace Officers' Retirement System (GWPORS), Municipal Police Officers' Retirement System (MPORS), Firefighters' Unified Retirement System (FURS), and the Volunteer Firefighters' Compensation Act (VFCA). The defined contribution retirement plans are the Public Employees' Retirement System (PERS-DCRP) and the Deferred Compensation (457) Plan, governed by IRC § 457.

As of fiscal year 2017, the VFCA, for tax reporting purposes, is considered a Length of Service Award Plan.

The PERS-DCRP was implemented July 1, 2002. All new PERS members have a 12-month window to file an irrevocable plan choice election. PERS members are provided education regarding their decision to participate in the Defined Benefit Retirement Plan (PERS-DBRP) or the Defined Contribution Retirement Plan (PERS-DCRP). If members are employees of the university system they have a third choice, the Montana University System Retirement Program (MUS-RP). Further education is provided for the members who choose the PERS-DCRP, including information on investment choices.

The PERB began oversight of the Deferred Compensation (457) Plan on July 1, 1999. The Deferred Compensation Plan is available to all employees of the State, the Montana University System and contracting political subdivisions.

The MPERA, as a state agency, participates as an employer in the PERS-DBRP, PERS-DCRP and the Deferred Compensation Plan.

The assets of each plan are maintained separately, including member education funds. The assets may be used only for the payment of benefits to the members and administrative expenses of the appropriate plan, in accordance with the terms of each plan as prescribed in Title 19 of the Montana Code Annotated (MCA). The financial statements are presented by combining the PERS-DBRP and the DBRP Education Fund and by combining the PERS-DCRP and the DCRP Education Fund. A presentation of the individual funds is shown at the end of the financial section on pages 118 to 121.

A. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

1. BASIS OF ACCOUNTING

The PERB is a fiduciary component unit Pension Trust Fund of the State of Montana financial reporting entity. The MPERA, staff of the PERB, prepares the accounting records and financial statements for the fiduciary pension trust funds using fund accounting principles and the accrual basis of accounting. For the pension trust funds, member contributions are recognized in the period in which contributions are due. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Revenues are recognized in the accounting period in which they are earned and become measurable. Benefit payments and refunds/distributions are recognized in the accounting period in which they are due and payable in accordance with benefit terms. Expenses are recognized in the period incurred. Administrative expenses are financed through investment earnings on the pension trust fund for the defined benefit plans. Interfund receivables and payables exist at

year-end for defined benefit administrative expenses that are accounted for within PERS-DBRP and allocated to the other defined benefit plans at year-end. Costs specifically related to the computer system upgrades are charged directly to the individual plans.

On a quarterly basis, participants of the PERS-DCRP are charged a basis point fee based on their individual account balances. On a quarterly basis, the participants of the Deferred Compensation Plan are charged a basis point fee on a sliding scale based on their individual account balances. The record keeper, EmpowerTM Retirement, withholds the basis point fees from participant accounts. The PERB incurs administrative expenses for the cost of EmpowerTM services and agency expenses. Fees collected from participant accounts are used to offset the costs of EmpowerTM's fees. Any remaining fees are remitted to the PERB to cover each plan's plan administrative expenses. The excess basis point fees remitted to the PERB are recorded as *Miscellaneous Revenue* on the financial statements.

For financial reporting purposes, the PERB adheres to accounting principles generally accepted by the United States of America. The PERB applies all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans addresses accounting and reporting standards for state and local governmental OPEB plans that are administered through trusts or equivalent arrangements. In reviewing the PERS-DCRP Disability OPEB plan for implementation of GASB No. 74, it has been determined that the liability is immaterial to

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the plan, therefore, the PERB will not be implementing GASB Statement No. 74.

GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions addresses accounting and financial reporting for OPEB that is provided to the employees of state and local governmental employers. Implementation of this statement is for fiscal year 2018. In reviewing the PERS-DCRP Disability OPEB plan for implementation of GASB No. 75 for the PERS-DCRP participating employers, it has been determined that the liability is immaterial, therefore, no liability disclosures will be sent to the participating employers. This statement also addresses the State of Montana's Healthcare OPEB plan, which is a pay-as-you-go plan and not a trust fund. MPERA as an employer of the State of Montana, participates in the State of Montana's Healthcare OPEB plan, therefore, will be implementing GASB Statement No. 75.

2. CAPITAL ASSETS AND EQUIPMENT USED IN OPERATIONS

Assets under \$5,000 are expensed in the year purchased. Assets (equipment) valued at \$5,000 or more are recorded at cost less straight-line depreciation over the estimated useful life of five to ten years. Assets (other intangibles) valued at \$100,000 or more are recorded at cost less straight-line depreciation over the estimated useful life of five to ten years. Equipment consists of a primary file server and a ScanPro 3000 fiche film reader. Property consists of a remodel to the office space.

The \$4,772,594 *Intangible Assets at Cost* on the Statement of Fiduciary Net Position consists of the PERIS computer system.

This is an intangible asset and the intangible asset is amortized over 10 years.

3. OPERATING LEASE

Operating leases are rental agreements where the payments are chargeable as rent and recorded as administrative expenses. MPERA renegotiated a 7-year lease for office space in November 2013, at the location of 100 North Park Avenue, Helena, MT. The lease is payable monthly and includes inflationary adjustments over the period of the lease.

4. NET PENSION LIABILITY OF EMPLOYERS

The net pension liability (the retirement systems' total pension liability determined in accordance with GASB Statement No. 67 less the fiduciary net position at fair value) as of June 30, 2018, is shown in the Schedule of Employers' Net Pension Liability (NPL) on the next page.

Actuarial valuations of the ongoing systems involve estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. The information used includes, but is not limited to, the plan provisions, employee data, and financial information provided by the PERB. Amounts determined regarding the NPL are subject to revision with each valuation as actual results are compared with past expectations and new estimates are made about the future. The last experience study was performed in 2017 using June 30, 2016 valuation data.

The reporting date for the retirement systems is June 30, 2018. Measurements as of the reporting date are based on the fair value of assets as of June 30, 2018 and the Total Pension Liability (TPL) is based on

the results of an actuarial valuation date of June 30, 2017, and rolled forward to June 30, 2018 using generally accepted actuarial procedures.

The Schedule of Employers' Net Pension Liability, presented as Required Supplementary Information (RSI) following the notes to the statements, displays multi-year trend information about whether the plan fiduciary net positions are increasing or decreasing over time relative to the TPL.

A summary of the actuarial assumptions for the retirement plan's GASB No. 67 reporting as of the latest actuarial valuation on June 30, 2018 is shown in the table on page 45 and is shown in the Notes to the RSI on pages 102 and 103.

The long-term expected rate of return on pension plan investments is reviewed regularly as part of experience studies prepared for the System. Several factors are considered in evaluating the long-term rate

of return assumption, including long-term historical data, estimates inherent in current market data, and an analysis in which best estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation). Estimates of variability and correlations for each asset class, were developed by the Plan's investment consultant. The ranges were combined to develop the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and then adding expected inflation. The capital market assumptions developed by the investment consultant are often intended for use over a 10-year investment horizon and are not always useful in setting the long-term rate of return investment horizon and are not always useful in setting the long-term rate of return for funding pension plans, which covers a longer time frame. The long-term rate of return assumption is intended to be a long-term assumption (30 to 50 years) and

Employers' Net Pension Liability / (Asset) as of June 30, 2018 (dollar amounts are in thousands)						
System	Total Pension Liability (a)	Plan Fiduciary Net Position ¹ (b)	Employers' Net Pension Liability / (Asset) (a-b)	Plan Fiduciary Net Position as a % of the Total Pension Liability (b/a)	Covered Payroll (c)	Net Pension Liability / (Asset) as a % of Covered Employee Payroll ((a-b)/c)
PERS-DBRP	\$ 7,867,136	\$ 5,779,994	\$ 2,087,142	73.47%	\$ 1,230,105	169.67%
JRS	60,192	102,651	(42,459)	170.54%	7,291	(582.35)%
HPORS	227,581	149,199	78,382	65.56%	15,251	513.93%
SRS	434,052	358,880	75,172	82.68%	77,587	96.89%
GWPORS	234,470	193,523	40,947	82.54%	50,823	80.57%
MPORS	589,572	418,314	171,258	70.95%	52,036	329.11%
FURS	549,106	433,935	115,171	79.03%	47,935	240.27%
VFCA	46,396	38,730	7,667	83.48%	N/A ²	N/A ²

¹The PERS-DB Education Fund balance is not included in the GASB 67 reporting for fiscal year ending June 30, 2018.
²Covered payroll is not applicable to VFCA because members are unpaid volunteers.

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is not expected to change absent a significant change in the asset allocation, a change in the inflation assumption, or a fundamental change in the market that alters expected returns in future years. The capital market assumptions provided by the investment consultant yielded a median real rate of return of 3.56%. The average long-term capital market assumptions published in the *Survey of Capital Market Assumptions 2016 Edition* by Horizon Actuarial Service, LLC, yield a median real return of 5.53%. Cavanaugh Macdonald's, PERB's actuary, recommended assumption of 4.9% for the real return reflects granting each source some degree of credibility. Combined with the 2.75% inflation assumption, the resulting nominal return is 7.65%.

Best estimates of arithmetic real rates of return for each major asset class included in the Plans target asset allocation as of June 30, 2018, are summarized in the following Target Allocations table.

Target Allocations as of June 30, 2018		
Asset Class	Target Asset Allocation	Long-Term Expected Real Rate of Return Arithmetic Basis
Cash equivalents	2.6%	4.00%
Domestic equity	36.0%	4.55%
Foreign equity	18.0%	6.35%
Fixed income	23.4%	1.00%
Private equity	12.0%	7.75%
Real estate	8.0%	4.00%
Totals	100.0%	

The discount rate used to measure the TPL for all Plans was 7.65% which is the assumed long-term expected rate of return on investments. The projection of cash flows used to determine the discount rate assumed that member, employer, and state contributions will be made at the contribution rates specified in the applicable Montana statutes, which can only be

changed by the Legislature. Based on those assumptions, the fiduciary net position of all the Plans was projected to be available to make all the projected future benefit payments of the 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 TPL.

In accordance with GASB No. 67 regarding the disclosure of the sensitivity of the NPL to changes in the discount rate, the NPL of the participating employers is presented as using the discount rate of 7.65%, as well as what the employers' NPL would be if it were calculated using a discount rate that is 1.00% lower (6.65%) or 1.00% higher (8.65%) than the current rate. The table that follows presents the sensitivity disclosures for each plan.

Sensitivity of NPL / (Asset) based on Changes in Discount Rate as of June 30, 2018 (dollar amounts are in thousands)			
System	1% Decrease 6.65%	Current Discount Rate 7.65%	1% Increase 8.65%
PERS-DBRP	\$ 3,018,491	\$ 2,087,142	\$ 1,322,356
JRS	(36,544)	(42,459)	(47,564)
HPORS	110,323	78,382	52,575
SRS	136,803	75,172	24,701
GWPORS	76,708	40,947	11,797
MPORS	260,082	171,258	100,222
FURS	197,398	115,171	48,937
VFCA	12,207	7,667	3,821

As can be seen from the table, changes in the discount rate affect the measurement of the TPL. Lower discount rates produce a higher TPL and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL can be very significant for a relatively small change in the discount rate.

The annual money-weighted rate of return on plan investments shows investment

performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. A schedule of the annual money-weighted rate of return for all Plans is presented in the table to the right and in the RSI on pages 110 and 111.

Annual Money-Weighted Rate of Return as of June 30, 2018			
PERS-DBRP	8.88%	GWPORS	8.82%
JRS	8.87%	MPORS	8.86%
HPORS	8.89%	FURS	8.85%
SRS	8.83%	VFCA	8.97%

Summary of Actuarial Assumptions

	PERS	JRS	HPORS	SRS	GWPORS	MPORS	FURS	VFCA
Valuation date	6/30/2018	6/30/2018	6/30/2018	6/30/2018	6/30/2018	6/30/2018	6/30/2018	6/30/2018
Actuarial Cost Method	Entry Age	Entry Age	Entry Age	Entry Age	Entry Age	Entry Age	Entry Age	Entry Age
Amortization method	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level dollar, open
Remaining amortization period for Actuarial Contribution	30	30	30	30	30	30	30	20
Asset valuation method	4-year smoothed, market	4-year smoothed, market	4-year smoothed, market	4-year smoothed, market	4-year smoothed, market	4-year smoothed, market	4-year smoothed, market	4-year smoothed, market
Actuarial assumptions:								
Investment rate of return compounded annually (net of investment expenses)	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%
Projected salary increases:								
General Wage Growth*	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	N/A
Merit	0% - 4.8%	None	0% - 6.3%	0% - 6.3%	0% - 6.3%	0% - 6.3%	0% - 6.3%	N/A
*Includes inflation at	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%
Administrative Expenses as a Percentage of Payroll	0.26%	0.18%	0.30%	0.21%	0.17%	0.24%	0.23%	\$89,298
Mortality (healthy): RP-2000 Combined Mortality projected to 2020 using Scale BB and Mortality (disabled): RP-2000 Combined Mortality with no projections.								
Benefit Adjustments								
GABA	3% or 1.5% for new hires on or after July 1, 2007 and before June 30, 2013; and 1.5% to 0% for new hires on or after July 1, 2013; all after 1 year	3% after 1 year	3% after 1 yr or 1.5% after 3 years if hired on or after July 1, 2013	3% or 1.5% for new hires on or after July 1, 2007, after 1 year	3% or 1.5% for new hires on or after July 1, 2007, after 1 year	3% after 1 year	3% after 1 year	N/A
Non-GABA	N/A	Biennial increase to salary of active member in like position	2% per yr service, not to exceed 60% of probationary officer's base pay; and increase not to exceed 5% of previous benefit.	N/A	N/A	Benefit may not be less than one-half of the compensation paid to a newly confirmed police officer	Benefit may not be less than one-half of the compensation paid to a newly confirmed police officer	N/A

Actuarial Assumptions are based on 2017 Experience Study

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5. OTHER POST-EMPLOYMENT BENEFITS (OPEB FOR HEALTHCARE)

Plan Description: In accordance with GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other than Pensions, MPERA is required to recognize and report certain amounts associated with their employees and dependents that are eligible to receive health care through the State Group Benefits Plan administered by the Montana Department of Administration. Statement 75 includes requirements to record and report each employers' proportionate share of the collective Total OPEB Liability, OPEB Expense, and Deferred Outflows and Deferred Inflows of Resources associated to OPEB.

The State of Montana offers an OPEB plan that is not administered through a trust that meets the criteria in paragraph 4 of Statement 75. Rather it is administered through an arrangement in which contributions to the OPEB plan and earnings on those contributions are irrevocable, the OPEB plan assets are dedicated to providing OPEB to plan members in accordance with the benefit terms, and the OPEB plan assets are legally protected from the creditors of the plan members.

There are no assets accumulated to offset the Total OPEB Liability. The State of Montana pays for postemployment healthcare benefits on a pay-as-you-go basis. Section 2-18-8, MCA gives the Department of Administration authority to establish and amend the funding policy for the State group health insurance plan.

Benefits provided: In accordance with Section 2-18-704, MCA, the State provides optional post-employment medical,

vision, and dental health care benefits to the following employees and dependents electing to continue coverage and pay administratively established contributions: (1) employees and dependents who retire under applicable retirement provisions and (2) surviving dependents of deceased employees. Plan coverage is on a calendar year basis. For GASB Statement No. 75 reporting, the State Group Benefits Plan is considered an agent multiple-employer plan and MPERA is considered to be a participating employer in the plan.

In addition to the employee benefits, the following post-employment benefits are provided. The Montana Department of Administration established retiree medical premiums varying between \$439 and \$1,633 per month for calendar year 2018 depending on the medical plan selected, family coverage, and Medicare eligibility. Retirees pay 100% of the premiums for medical, dental, and vision. Depending on the coverage selected, administratively-established monthly dental and vision premiums vary between \$41.10 and \$70.00 and \$7.64 and \$22.26, respectively. Basic life insurance in the amount of \$14,000 is provided until age 65 or Medicare eligible at a cost of \$1.90 per month. The State Benefit Plans reimburse all validated medical claims net of member obligations (annual deductibles and coinsurance of the members' selected medical plan). Dental claims are reimbursed at 50% to 100% of the allowable charges, depending on the services provided. The State acts as secondary payer for retired Medicare-eligible claimants.

Benefits Not Included in the Actuarial Valuation: Dental and vision benefits are rated separately for retirees based on actual retiree cost, so there is no implicit subsidy; therefore, no liability for these benefits is

calculated in the actuarial valuation. The basic life insurance benefit is not available as an employer-provided group insurance benefit for retirees; therefore, no liability for life insurance is calculated in this valuation.

Employees covered by benefit terms: At December 31, 2017, MPERA had 46 active employees and one retired employee/spouse/surviving spouse covered by the benefit terms for a total of 47 covered employees.

The estimates were prepared based on an actuarial valuation as of the year ending December 31, 2017, rolled forward to March 31, 2018, for the Department of Administration. The resulting State of Montana Actuarial Valuation of Other Post-Employment Benefits (OPEB) contains the MPERA data and is available through the following address.

Montana Department of Administration
State Accounting Division
Room 255, Mitchell Bldg
125 N Roberts Street
PO Box 200102
Helena, MT 59620-0102

Schedule of Changes in Total OPEB Liability: At June 30, 2018, MPERA reported a liability of \$84,795 for its 0.16805% proportionate share of the total OPEB Liability. At June 30, 2017, MPERA's proportionate share was 0.15259%. MPERA's proportion of the total OPEB liability measurement is based upon MPERA's actuarially determined OPEB liability in comparison to the collective OPEB liability for the State's healthcare plan. MPERA's change in proportion is 0.01546%.

The following table presents the Other Items Related to and Changes in the Total OPEB Liability.

Schedule of Changes in Total OPEB Liability	
Balances at 6/30/2017 (Restated)	\$ 76,094
Changes for the year:	
Service Cost	27,891
Interest	29,728
Difference between Expected and Actual Experience	(69,725)
Changes of assumptions or other inputs	(4,363)
Benefit Payments (Contributions)	25,170
Net Changes	8,701
Balances as of 6/30/2018	<u>\$ 84,795</u>

Actuarial assumptions and other inputs: The total OPEB liability in the December 31, 2017 actuarial valuation, rolled forward to March 31, 2018, was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Contributions:	\$ 25,170
Actuarial valuation date	December 31, 2017
Actuarial measurement date ⁽¹⁾	March 31, 2018
Actuarial cost method	Entry age normal funding method
Amortization method	Open basis
Remaining amortization period	20 years
Asset valuation method	Not applicable since no assets meet the definition of plan assets under GASB 75
Actuarial Assumptions:	
Discount rate	3.89%
Projected payroll increases	4.00%
Participation:	
Future retirees	55.00%
Future eligible spouses	66.00%
Marital status at retirement	70.00%
⁽¹⁾ Update procedures were used to roll forward the total OPEB liability to the measurement date.	

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Mortality - Healthy: For MPERA, Healthy mortality is assumed to follow the RP2000 Combined Mortality Table with improvements projected by Scale BB to 2020, set back one year for males.

Mortality - Disabled: For MPERA, disabled mortality is assumed to follow the RP2000 Combined Mortality Table with no projections.

Changes in actuarial assumptions and methods since last measurement date: Changes in actuarial methods: amortization period and actuarial cost method adjusted to conform to the new GASB Statement No. 75 requirements. Changes in actuarial assumptions: revised rates per the Retirement System pension valuations as of July 1, 2017; interest rate based upon the March 31, 2018, 20-year municipal bond index per GASB 75 requirements; changes in revised rates based on actual data; and projected trend and updated projected healthcare trend rates to follow the Getzen model.

Changes in benefit terms since last measurement date: Medical moved from Cigna to Allegiance plans as of January 1, 2016, the State implemented reference-based pricing hospital contracts effect July 1, 2016 and pharmacy moved from URx to Navitus as of January 1, 2017. The State implemented an Employer Group Waiver Program for Medicare retirees effective January 1, 2017.

Sensitivity Analysis: Sensitivity of the total OPEB liability to changes in the discount rate. The following presents the total OPEB liability of MPERA, as well as MPERA's total OPEB liability calculated using a discount rate that is 1.00% lower (2.89%) or 1.00% higher (4.89%) than the current discount rate:

Discount Rate 3/31/18	1% Decrease (2.89%)	Discount Rate (3.89%)	1% Increase (4.89%)
Total OPEB Liability	\$ 116,439.00	\$ 84,795.00	\$ 61,468.00

Sensitivity of the total OPEB liability to changes in the healthcare cost trend rates. The following presents the total OPEB liability of MPERA, as well as MPERA's total OPEB liability calculated using healthcare cost trend rates that are 1.00% lower (6.5%) or 1.00% higher (8.5%) than the current healthcare cost trend rates:

Healthcare Rate 3/31/18	1% Decrease (6.5%)	Current Rate (7.5%)	1% Increase (8.5%)
Total OPEB Liability	\$ 60,945.00	\$ 84,795.00	\$ 118,484.00

OPEB Expense: For the year ended June 30, 2018, MPERA recognized OPEB expense of \$57,619.

Deferred Outflows and Deferred Inflows of Resources Related to OPEB -- At June 30, 2018, MPERA recorded deferred outflows and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflow of Resources
Differences between expected and actual experience		\$ 69,725.46
Changes of assumptions or other inputs		4,362.95
*Benefit Payments associated with transactions subsequent to the measurement date of the total OPEB liability	\$ 3,108.45	
Total	\$ 3,108.45	\$ 74,088.41

*Amounts reported as deferred outflows of resources related to OPEB resulting from MPERA's benefit payments in FY2018 (April 1, 2018 through June 30, 2018) subsequent to the measurement date.

Amounts reported as deferred outflows and inflows of resources related to OPEB will be recognized in future years as an increase or (decrease) to OPEB expense as follows:

Montana Department of Commerce
Board of Investments
2401 Colonial Drive, 3rd Floor
Helena, MT 59620-0126

Year ended June 30, 2018	Amount recognized as an Increase or (Decrease) to OPEB Expense
2019	\$ (378.90)
2020	\$ (378.90)
2021	\$ (378.90)
2022	\$ (378.90)
2023	\$ (378.90)
Thereafter	\$ (1,709.68)

6. METHOD USED TO VALUE INVESTMENTS

According to Article VIII, section 13 of the Montana Constitution and section 19-2-504, MCA, the Board of Investments (BOI) has a fiduciary responsibility for investing the defined benefit plan assets on behalf of the defined benefit plan members. Investments are determined in accordance with the statutorily and constitutionally mandated “prudent expert principle.” Pursuant to Article VIII, section 15 of the Montana Constitution and sections 19-2-502 and 19-2-503, MCA, the PERB has a fiduciary responsibility for the administration of the pension trust funds. For the defined benefit pools, the PERB relies on the Investment Policy Statements that are drafted and approved by the BOI. In this process, the BOI utilizes information obtained from RV Kuhns & Associates, Inc., the investment consultant. Investments administered by the BOI for the PERB are subject to their investment risk policies. The PERB does not have an investment policy of its own to address risks. Information on investment policies, investment activity, investment management fees, investment risks, and a listing of specific investments owned by the pooled asset accounts can be obtained by contacting BOI, the investment manager, at the following address:

Defined benefit investments are reported at fair value as of June 30, 2018.

BOI has separately issued financial statements that can be accessed by contacting BOI at the above address.

The PERS-DCRP and deferred compensation plan’s Montana Fixed Fund is a stable value investment option, administered through outside vendors; Pacific Investment Management Company, LLC (PIMCO), custodial bank State Street Bank and Trust Company (State Street), and third party synthetic Guaranteed Interest Contract (GIC) providers, Transamerica Life Insurance Company (Transamerica), Prudential Insurance Company of America (Prudential), and Voya Retirement Insurance & Annuity Company (Voya). All money invested in the Montana Fixed Fund investment option of the PERS-DCRP and deferred compensation plan money is in a Pooled Trust.

For both the PERS-DCRP and deferred compensation plan, the third party recordkeeper, Empower™ Retirement, tracks and reports the daily trading and valuations of all investment options including the assets held by the individual mutual fund companies.

In addition to the laws cited previously, the PERS-DCRP investments are also governed by section 19-3-2122, MCA and the deferred compensation plan investments are governed by section 19-50-102, MCA.

The PERB has separate investment policy statements for the PERS-DCRP and

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deferred compensation plans. The investment policies are reviewed and revised, if necessary, by the PERB annually. The investment options are reviewed quarterly for compliance with the established investment policy statement. DCRP and deferred compensation plan investments are reported at fair value as of June 30, 2018.

The following are the summaries of: a) BOI's fiscal year-end statements; b) the Stable Value Group Trust contracts; and c) a statement about the variable investments.

BOI Pooled Investments: Cash and cash equivalents consist of funds deposited in the State Treasurer's pooled cash account and cash invested in the Short-Term Investment Pool (STIP). Pooled investments other than STIP are reported at fair value on a trade date basis. STIP is recorded on a Net Asset Value (NAV) or "fair value" basis. The value of each participating dollar equals the fair value divided by the amortized cost. The fair value of publicly traded stocks and bonds is determined by reference to market prices supplied by State Street Bank (BOI's custodial bank). Because a public market does not exist for private equity and real estate investments, the fair value of these investments is the value reported in the most recent external managers' valuation reports.

As of June 30, 2018, BOI managed two major diversified pools for the retirement funds, Montana Short Term Investment Pool (STIP) and Montana Consolidated Asset Pension Pool (CAPP). The PERS-DCRP Disability OPEB trust fund consists of a portfolio of commingled equity index funds that are recorded under *Commingled Equity Securities* in the financial statements.

Consolidated Asset Pension Pool (CAPP)
The Consolidated Asset Pension Pool

(CAPP) invests directly in the underlying Pension Asset Classes (PAC) on behalf of the Montana Public Retirement Plans within the BOI-approved asset allocation ranges. Each PAC has an underlying set of investment objectives and investment guidelines. For liquidity purposes, each PAC and external manager has a limited amount of cash/cash equivalents. With the PAC, it is invested in the State Street Short Term Investment Fund (STIF), which invests in high quality short-term securities. For external managers, it is invested per BOI established guidelines.

CAPP'S Underlying Asset Classes

Domestic Equity	Broad Fixed Income
International Equity	U.S. Treasury / Agency
Private Equity	Investment Grade
Natural Resources	Mortgage Backed Securities
Real Estate	High Yield
TIPS	Cash
Diversifying Strategies	

Domestic Equity PAC – Invests primarily in U.S. traded equity securities such as common stock. The type of portfolio structures utilized are separately managed accounts, commingled accounts, and exchange traded funds.

International Equity PAC – Invests primarily in international equity securities that trade on foreign exchanges in developed and emerging markets. The type of portfolio structures utilized are separately managed accounts, commingled accounts, and exchange traded funds.

Private Equity PAC – Invests in the entire capital structure of private companies. Investments are made via Limited Partnerships managed by a General Partner. The Limited Partnerships typically have well-defined strategies such as buyout, venture, or distressed debt. Private Equity investments are less liquid than other Asset

Classes because the funds require a long holding period. Exchange traded funds are utilized to minimize the cash position.

Real Estate PAC – Invests primarily in real estate properties. Transactions are privately negotiated by a General Partner via a Limited Partnership or an open-end fund. The funds typically have well-defined strategies such as core, value-add, or opportunistic. Private Real Estate investments are less liquid than other Asset Classes because the funds require a long holding period. Exchange traded funds are utilized to minimize the cash position.

Natural Resource PAC – Invests primarily in energy and timber investments, but could include agriculture, water or commodity related funds. The investments are made via Limited Partnerships managed by a General Partner, and the funds are less liquid than other Asset Classes because they require a long holding period. Potential Investment vehicles could include open-end funds, master limited partnerships and exchange traded funds.

Intermediate Treasury Inflation Protected Securities (TIPS) PAC – Invests primarily in intermediate U.S. TIPS or Treasury securities that are indexed to inflation.

Intermediate U.S. Treasury/Agency PAC – Invests primarily in debt obligations of the U.S. government including its agencies and instrumentalities.

Broad Fixed Income PAC – Invests primarily in core fixed income securities as represented in the Bloomberg Barclays U.S. Aggregate Bond Index. The type of portfolio structures utilized are separately managed accounts, commingled accounts, and potentially exchange traded funds.

Intermediate Investment Grade PAC – Invests primarily in intermediate investment grade corporate bonds typically found in the Bloomberg Barclays U.S. Corporate Bond Index. It includes U.S. dollar denominated securities publicly issued by U.S. and non-U.S. industrial, utility, and financial issuers.

Mortgage Backed Securities PAC – Invests primarily in agency mortgage backed securities, asset backed securities and commercial mortgage backed securities.

High Yield PAC – Invests primarily in U.S. dollar denominated corporate bonds that are classified as high yield according to the major ratings agencies such as S&P, Moody's or Fitch. The type of portfolio structures utilized are separately managed accounts and potentially commingled accounts or exchange traded funds.

Cash PAC – Invests primarily in highly liquid, money-market type securities via STIP.

Diversifying Strategies PAC – Invests in a wide spectrum of global public securities investment types (including, but not limited to, equities, commodities, currencies, preferred stocks, convertible bonds, fixed income, and cash equivalents).

Short-Term Investment Pool (STIP)

The Montana Public Retirement Plans investment in the Short-Term Investment Pool (STIP) will provide the Plans with exposure to Cash related investments. STIP will be managed internally by BOI utilizing an active investment strategy. STIP invests primarily in short-term, high quality, fixed income securities with a maximum maturity of 397 days or less. Variable securities shall have a maximum maturity of 2 years. STIP shall maintain a dollar-weighted average portfolio maturity of 60 days or less. This

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Pool is managed to preserve principal while providing 24-hour liquidity for state agency and local government participants.

<u>Investment Pools</u>	<u>Fair Value</u>	<u>Net Asset Value (NAV)</u>
Short-term Investment Pool	\$ 148,050,296	\$ 148,050,296
CAPP Investment Pool	7,276,579,615	7,276,579,615
Commingled Equity Securities ¹	4,110,614	4,110,614
Total	\$ 7,428,740,525	\$ 7,428,740,525

¹DC Disability OPEB is invested by the manager Blackrock in commingled equity index funds measured at NAV

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical method are not classified in the fair value hierarchy. This is the case of the Pension Investment Pool and the Short-Term Investment Pool (STIP).

The Pension Investment Pool, CAPP, is a commingled internal investment pool managed and administered under the direction of Montana BOI as statutorily authorized by the Unified Investment Program. Only the retirement systems can participate in CAPP. On a monthly basis, redemptions are processed by BOI in order to maintain required asset allocations and to provide liquidity for retirement benefits. The fair values of the investments in this category have been determined using the Net Asset Value (NAV) per share (or its equivalent) of the investment. Refer to the fair value measurement note disclosures within BOI's annual financial statements for the underlying investments within the fair value hierarchy.

STIP is an external investment pool managed and administered under the direction of BOI as statutorily authorized by the Unified Investment Program. It is a commingled pool for investment purposes and participant requested redemptions from the pool are redeemed the next business day. The fair values of the investments in this

category have been determined using the NAV per share (or its equivalent) of the investment. Refer to the fair value measurement note disclosures within BOI's annual financial statements for the underlying investments within the fair value hierarchy.

The PERS-DCRP Disability OPEB trust fund invests in commingled equity index funds through the manager Blackrock Institutional Trust Co., N.A (Blackrock), recorded under *Commingled Equity Securities* in the financial statements. This type of fund consists of institutional investment funds that invest in domestic equities and funds that invest in international equities. The fair values of the investments of this type have been determined using the NAV per share (or its equivalent) of the investments.

At June 30, 2018, the PERB's portion of the defined benefit investment pools is presented in the table below.

<u>Investment</u>	<u>Fair Value June 30, 2018</u>	<u>PERB Portion June 30, 2018</u>
STIP	\$ 148,050,296	2.56%
CAPP	\$7,276,579,615	64.34%

Securities Lending Collateral, governed under the provisions of state statutes, BOI authorized the custodial bank, State Street Bank, to lend BOI's securities to broker-dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future. The custodial bank is required to maintain collateral equal to 102 percent of the fair value of domestic securities and 105 percent of the fair value of international securities while the securities are on loan. BOI and the custodial bank split the earnings, 80%/20% respectively, on

security lending activities. At June 30, 2018, BOI had no credit risk exposure to borrowers. The private equity and real estate pools do not participate in securities lending. There were no failures by any borrowers to return or pay distributions thereon during the period that resulted in a declaration and notice of Default of the Borrower.

Fair Value Measurements

The BOI categorizes their fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements).

Level 1: Unadjusted quoted prices for identical instruments in active markets.

Level 2: Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3: Valuations derived from valuation techniques in which significant inputs are unobservable.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The BOI's assessment of the significance of particular inputs to their fair value measurements requires judgment and considers factors specific to each asset or liability.

The **Investment Risks** for the pooled investments in which the PERB participates in are described in the following paragraphs. Investments are administered by BOI, for the PERB, as part of the State of Montana's Unified Investment Program and the BOI is responsible for setting investment risk policies.

The CAPP, as a mixed pool, is not subject to certain risks, only foreign currency risk. STIP, as an external investment pool, is subject to credit risk and interest rate risk.

Credit Risk - Credit risk is defined as the risk that an issuer or other counter-party to an investment will not fulfill its obligation. With the exception of U.S. Government securities, the fixed income instruments in the investment pools have credit risk as measured by major credit rating services.

Foreign Currency Risk - Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. Per the CAPP Investment Policy Statement (IPS), the Investment Grade Credit Asset Class, Agency Mortgage Backed Securities Asset Class and High Yield Asset Class sections have maximum restrictions that can be held on non-U.S. securities in a foreign currency. As of June 30, 2018, there was no receivable or payable balances pertaining to foreign currency forward contracts.

Interest Rate Risk - Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. In accordance with GASB Statement No. 40, the BOI uses effective duration as a measure of interest rate risk for all fixed income portfolios. According to the STIP investment policy "the STIP portfolio will minimize interest rate risk by:

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- "• structuring the investment portfolio so securities mature to meet cash requirements for ongoing operations thereby normally avoiding the need to sell securities on the open market prior to maturity;
- "• maintaining a dollar-weighted average portfolio maturity (WAM) of 60 days or less (for this purpose, the date to the next coupon reset date will be used for all floating or variable rate securities), and
- "• STIP will maintain a reserve account."

The PERB's investments subject to credit and interest rate risk at June 30, 2018 are categorized in the following table.

Investment	Fair Value 6/30/2018	Credit Quality Rating 6/30/2018	Effective Duration 6/30/2018
STIP	\$ 148,050,296	NR	46 days WAM*
*Weighted Average Maturity (WAM).			

Although the STIP investments have been rated by investment security type, STIP, as an external investment pool, has not been rated. As of June 30, 2018, STIP's portfolio may hold certain fixed and variable rate securities. Interest payments on these securities are based on an underlying reference rate, example is LIBOR.

Stable Value -- Montana Fixed Fund (Fixed Investment) The Montana Fixed Fund is a stable value investment option of the PERS-DCRP and the deferred compensation plan. It is administered through outside vendors, Pacific Investment Management Company LLC (PIMCO); custodial bank, State Street Bank and Trust Company (State Street); and third-party synthetic Guaranteed Interest Contract (GIC) providers - Transamerica Life Insurance Company (Transamerica), Prudential Insurance Company of America (Prudential) and Voya Retirement Insurance & Annuity Company (Voya). When

participants invest in the Montana Fixed Fund option they are guaranteed a fixed rate of return, which may be adjusted in accordance with the terms of the respective contracts with the GIC providers. The Montana Fixed Fund employs a synthetic stable value strategy in which the investment and stable value manager, PIMCO, manages a diversified bond portfolio and third party insurers, Transamerica, Prudential, and Voya guarantee the participants' principal investments and earnings in accordance with terms of the respective contract with the GIC provider. Transamerica, Prudential, and Voya calculate a rate of return each quarter called the "crediting rate", which helps smooth participants' earnings over time. The Montana Fixed Fund's structure incorporates a money market-like liquidity strategy and calculates member investments and earnings based on a Net Asset Value (NAV).

The PERS-DCRP and deferred compensation plans' stable value investments are synthetic guaranteed investment contracts (GIC) that are fully benefit responsive, measured at contract value, and do not participate in fair value changes.

The third-party insurers set a fixed quarterly rate of return based on the investment manager's portfolio market value performance, yield, and duration in accordance with the terms of the respective contracts with the GIC providers.

All money invested in the Montana Fixed Fund of the PERS-DCRP and deferred compensation plan are held in a Pooled Trust. The Pooled Trust qualifies as a group trust under sections 401(a), including section 401(a)(24) and 501(a), of the Internal Revenue Code (IRC) of 1986, as amended. The Pooled Trust assets are

invested by PIMCO and are held under a custodial agreement with State Street. The Pooled Trust assets are invested by PIMCO based on an investment guideline schedule as agreed upon in the Pooled Trust Contract and approved by the PERB, PIMCO, and any GIC. PIMCO is responsible for setting the investment risk policies for the Pooled Trust. Credit Risk is risk that the issuer of a fixed income security may default in making timely principal and interest payments. With the exception of the U.S. Government securities, the Montana Fixed Fund fixed income instruments have credit risk as measured by major credit rating services. Obligations of the U.S. Government or obligations explicitly guaranteed by the U.S. Government are not considered to have credit risk and do not require disclosure of credit quality. The total investments credit quality rating for Montana Fixed Fund is AA. For Interest Rate Risk as of June 30, 2018, in accordance with GASB Statement No. 40, PIMCO has selected the effective duration method to disclose interest rate risk. The total effective duration for Montana Fixed Funds fixed income investments, as of June 30, 2018, is 3.82 years. Foreign Currency Risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. The Montana Fixed Fund may include securities subject to foreign currency risk.

Variable Investments for the PERS- DCRP and deferred compensation plan are held and managed in a selection of retail and institutional mutual funds, which cover all standard asset classes and categories. The selection of offered mutual funds is designed to provide participants with the ability to diversify investments and meet their individual investment goals and strategies. With advice from an independent investment analyst and assistance from the

statutorily-created Employee Investment Advisory Council (EIAC), the PERB conducts annual reviews of the offered mutual funds. The goal of the reviews is to ensure that the offered mutual funds meet standards established in the Investment Policy Statements adopted by the PERB. Each investment alternative is compared to its peers and an appropriate benchmark. Concentration of Credit Risk is not addressed in the investment policy statements and investments in mutual funds are not required to be disclosed.

Life Insurance Investment Option

Deferred compensation plan participants previously had the option to direct a portion of their deferrals to a term life insurance policy provided through Allianz Life Insurance. The ability to invest in life insurance is allowed under the IRC and was offered to plan participants prior to life insurance being offered as a standard component of health insurance benefit packages. This investment option has been discontinued; however, plan participants who had previously elected this option may continue.

Available investment options in the PERS-DCRP and deferred compensation plan are listed on pages 87 and 90, respectively. A current listing may also be obtained by contacting MPERA.

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) is presented in the following table for the defined benefit investments and on page 57 for the defined contribution investments.

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PERB Defined Benefit Investments Measured at Fair Value

	June 30, 2018	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable (Level 3)
Investments by fair value level				
Total Investments by fair value level ¹				
Investments measured at the net asset value (NAV)				
CAPP Investment Pool ²	\$ 7,276,579,615			
Short Term Investment Pool (STIP)	148,050,296			
Commingled Equity Securities ³	4,110,614			
Total investments measured at the NAV	7,428,740,525			
Total investments measured at fair value	\$ 7,428,740,525			

¹ All PERB investments are measured at net asset value (NAV) and not within the fair value level hierarchy.

² CAPP Investment Pool replaces five investment pools that have been previously reported prior to fiscal year 2017.

³ The DC Disability OPEB trust fund is invested by the manager Blackrock in commingled equity index funds measured at NAV.

PERB Defined Benefit Investments Measured at Net Asset Value (NAV)

	June 30, 2018			
	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
CAPP Investment Pool ¹	\$ 7,276,579,615		Monthly	30 days
Short Term Investment Pool (STIP)	148,050,296		Daily	1 day
Commingled Equity Securities ²	4,110,614		Daily	1 day
Total investments measured at the NAV	\$ 7,428,740,525			

¹ CAPP Investment Pool replaces five investment pools that have been previously reported prior to fiscal year 2017.

² The DC Disability OPEB trust fund is invested by the manager Blackrock in commingled equity index funds measured at NAV.

PERB Defined Contribution and Deferred Compensation Investments

	Fair Value Measurements Using			
	June 30, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable (Level 3)
Investments by fair value level				
Total Investments by fair value level ¹				
Investments measured at the net asset value (NAV)				
Montana Fixed Fund (Stable Value Pool) ²	\$ 241,326,556			
Variable Pooled Investments ³	485,902,899			
Short Term Investment Pool ⁴	1,194,139			
Allianz Life Insurance Investment ⁵	12,316			
Total investments measured at the NAV	<u>\$ 728,435,910</u>			
Total investments measured at fair value	<u>\$ 728,435,910</u>			

¹ All investments are pooled and measured at net asset value (NAV) and not within the fair value level hierarchy.

² The Montana Fixed Fund is a stable value option that invests in cash, other liquid investments, and synthetic Guaranteed Investment Contract (GICs) that are fully benefit-responsive and is reported at contract value.

³ The Variable Pooled Investments are all mutual funds measured at Net Asset Value (NAV).

⁴ Short Term Investment Pool (STIP) is an external investment pool managed and administered through Montana Board of Investments (BOI) and fair values are determined using the Net Asset Value (NAV) per share for the investment.

⁵ Term life insurance policy investment option provided through Allianz Life Insurance. This option was offered to deferred compensation plan participants prior to life insurance being offered as a standard component of health insurance benefit packages. This investment option has been discontinued; however plan participants who had previously elected this option may continue.

**PERB Defined Contribution and Deferred Compensation
Investments Measured at Net Asset Value**

	June 30, 2018			
	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Montana Fixed Fund (Stable Value Pool) ¹	\$ 241,326,556		Daily	None
Variable Pooled Investments ²	485,902,899		Daily	None
Short Term Investment Pool ³	1,194,139		Daily	1 day
Allianz Life Insurance Investment ⁴	12,316		Daily	None
Total investments measured at the NAV	<u>\$ 728,435,910</u>			

¹ The Montana Fixed Fund is a stable value option that invests in cash, other liquid investments, and synthetic Guaranteed Investment Contract (GICs) that are fully benefit-responsive and are reported at contract value.

² The Variable Pooled Investments are all mutual funds measured at Net Asset Value (NAV).

³ Short Term Investment Pool (STIP) is an external investment pool managed and administered through Montana Board of Investments (BOI).

⁴ Term life insurance policy investment option provided through Allianz Life Insurance. This option was offered to deferred compensation plan participants prior to life insurance being offered as a standard component of health insurance benefit packages. This investment option has been discontinued; however plan participants who had previously elected this option may continue.

The fair values are determined using the Net Asset Value (NAV) per share for the investment.

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7. PRIOR PERIOD ADJUSTMENTS

Prior period adjustments relate to corrections of errors and changes in accounting policy from prior periods. The Plans had a prior period adjustment recorded for the fiscal year ended June 30, 2018. The adjustment was recorded for the initial recognition of a Total OPEB Liability that was recorded in accordance with GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions. Statement 75 required recording and reporting of several OPEB amounts including: Total OPEB Liability, OPEB Expense, and Deferred Inflows and Outflows of resources related to OPEB plans. The prior period adjustment reflects the recording of the portion of the State of Montana's Total OPEB Liability that was allocated to the Plans. Due to the GASB 75 implementation the State of Montana's Total OPEB Liability was significantly reduced from the previous OPEB liability measurement. This reduction in the Total OPEB Liability created an increase to the PERB's Net Position in the amount of \$690,398.

8. SIGNIFICANT ACCOUNTING CHANGES

Significant accounting policies are specific accounting principles and methods used and considered to be the most appropriate to use in current circumstances in order to fairly present the financial statements. As of June 30, 2018, the PERB has changed the recording of realized gains in investments in the basic financial statements from *Interest to Net Appreciation (Depreciation) in Fair Value of Investments*. The change in recording the realized gains of \$17,458,505 has caused a significant accounting change in both of these line items on the basic financial Statement of Changes in Fiduciary Net Position.

B. Litigation

Each of the plans administered by the PERB may be involved in various claims and legal actions arising in the ordinary course of business. In the opinion of management and legal counsel, the disposition of those matters should not have a material, adverse effect on any plan's financial position as a whole. Management and legal counsel also believe the possibility that the plaintiff in Tadman will prevail is remote as the predominant claim in the Complaint was based on reporting mandated in a Private Letter Ruling PERB obtained from the Internal Revenue Service. However, plaintiff continues to try to expand the complaint to include additional issues and individuals so the ultimate outcome is not predictable at this time.

Tadman, et al. v. State of Montana. A retired member of the Sheriffs' Retirement System filed a class action against the State of Montana on October 6, 2015, alleging the inappropriate payment of state and federal income tax on certain line-of-duty disability benefits. Plaintiff is represented by Lawrence A. Anderson, an attorney in Great Falls, Montana. The State was served with the Complaint on November 25, 2015, and is represented by Eric Biehl and Hanna Warhank from Church, Harris, Johnson & Williams PC, in Great Falls, Montana and MPERA legal counsel. The State responded and filed an amended answer to the complaint before filing a motion and brief to change venue and/or to dismiss the matter for lack of subject matter jurisdiction. Following a hearing on June 1, 2017, the State's motions were denied. Discovery requests and responses have been served by both parties. Plaintiff's motion for class certification was filed October 31, 2017. As of August 2018, the motion for class certification remains undecided. A third set

of discovery requests to the State prompted plaintiff to request a continuation of the scheduled hearing and to request additional briefing on the class certification issues. An order is expected in late fall 2018.

C. Plan Membership, Descriptions And Contribution Information

The plans are established and amended statutorily by the Legislature. In all defined benefit plans (except VFCA), if a member leaves covered employment before

retirement, the member contributions plus accrued interest (accumulated contributions) may be refunded to the member. If a member returns to service and repays the withdrawn accumulated contributions plus the interest the accumulated contributions would have earned had they remained on deposit, service credit is restored. Membership in each plan as of June 30, 2018 is detailed in the following chart.

Plan Membership as of Fiscal Year End June 30, 2018										
Type of Plan for Reporting Purposes as of Fiscal Year End June 30, 2018	Single-Employer Defined Benefit		Multi-Employer Defined Benefit						Multi-Employer Defined Contribution	
Plan Designation	JRS	HPORS ¹	PERS-DBRP	SRS	GWPORS	MPORS ¹	FURS	VFCA	PERS-DCRP	457
Classification of Member										
Active	55	233	28,646	1,429	1,010	787	691	2,029	2,690	4,904
Inactive: entitled to, but not yet receiving benefits or a refund:										
Vested	3	14	3,793	129	123	78	41	815	559	4,484
Non-Vested	1	23	17,973	539	382	153	66		724	
Inactive members and beneficiaries currently receiving benefits:										
Service Retirements	64	319	21,901	629	298	748	623	1,469	97	
Disability Retirements	1	7	158	27	3	32	9	1	8	
Survivor benefits	5	12	497	25	11	32	20	4	2	
Total Membership	129	608	72,968	2,778	1,827	1,830	1,450	4,318	4,080	9,388

¹ Includes DROP in the Active count.

² The PERS-DBRP Inactive Non-Vested count includes dormant accounts that were previously not counted.

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Public Employees' Retirement System-DBRP (PERS-DBRP)

Plan Description: The PERS-Defined Benefit Retirement Plan (DBRP) is a multiple-employer, cost-sharing plan established July 1, 1945, and governed by Title 19, chapters 2 & 3, Montana Code Annotated (MCA). This plan covers the State, local governments, certain employees of the Montana University System and school districts.

All new members are initially members of the PERS-DBRP and have a 12-month window during which they may choose to remain in the PERS-DBRP or join the PERS-DCRP by filing an irrevocable election. Members may not be members of both the defined benefit and

defined contribution retirement plans. All new members from the universities also have a third option to join the university system's Montana University System Retirement Program (MUS-RP).

The PERS-DBRP provides retirement, disability, and death benefits to plan members and their beneficiaries. Benefits are established by state law and can only be amended by the Legislature. Benefits are based on eligibility, years of service, and highest average compensation. Member rights are vested after five years of service. A brief summary of eligibility and benefits follows.

PERS-DBRP Summary of benefits

Member's highest average compensation (HAC)

- Hired prior to July 1, 2011 - highest average compensation during any consecutive 36 months;
- Hired on or after July 1, 2011 - highest average compensation during any consecutive 60 months;
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as part of a member's highest average compensation.

Eligibility for benefit

Service retirement:

Hired prior to July 1, 2011: Age 60, 5 years of membership service;
Age 65, regardless of membership service; or
Any age, 30 years of membership service.

Hired on or after July 1, 2011: Age 65, 5 years of membership service;
Age 70, regardless of membership service.

Early retirement, actuarially reduced:

Hired prior to July 1, 2011: Age 50, 5 years of membership service; or
Any age, 25 years of membership service.

Hired on or after July 1, 2011: Age 55, 5 years of membership service.

Vesting 5 years of membership service

PERS-DBRP Summary of benefits (continued)**Monthly benefit formula****Members hired prior to July 1, 2011:**

- Less than 25 years of membership service: 1.785% of HAC per year of service credit;
- 25 years of membership service or more: 2% of HAC per year of service credit.

Members hired on or after July 1, 2011:

- Less than 10 years of membership service: 1.5% of HAC per year of service credit;
- 10 years or more, but less than 30 years of membership service: 1.785% of HAC per year of service credit;
- 30 years or more of membership service: 2% of HAC per year of service credit.

Second retirement (requires returning to PERS-covered employment):

Retire **before** January 1, 2016 and accumulate **less than 2 years** additional service credit **or** retire **on or after** January 1, 2016 and accumulate **less than 5 years** additional service credit:

- A refund of member's contributions plus regular interest;
- No service credit for second employment;
- Start the same benefit amount the month following termination; and
- GABA starts again in the January immediately following the second retirement.

Retire before January 1, 2016 and accumulate at least 2 years of additional service credit:

- A recalculated retirement benefit based on provisions in effect after the initial retirement; and
- GABA starts on the recalculated benefit in the January after receiving the new benefit for 12 months.

Retire on or after January 1, 2016 and accumulate 5 or more years of service credit:

- The same retirement as prior to the return to service;
- A second retirement benefit for years following return to service based on laws in effect upon the rehire date; and
- GABA starts on both benefits in the January after receiving the original and the new benefit for 12 months.

Guaranteed Annual Benefit Adjustment (GABA)

After the member has completed 12 full months of retirement, the member's benefit increases by the applicable percentage (provided below) each January, inclusive of all other adjustments to the member's benefit.

- 3.0% for members hired prior to July 1, 2007;
- 1.5% for members hired between July 1, 2007 and June 30, 2013;
- Members hired on or after July 1, 2013:
 - (a) 1.5% for each year if PERS is funded at or above 90%;
 - (b) 1.5% is reduced by 0.1% for each 2% PERS is funded below 90%; and,
 - (c) 0% whenever the amortization period for PERS is 40 years or more.

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PERS-DBRP PARTICIPATING EMPLOYERS		
Employers	June 30, 2018	June 30, 2017
State Agencies	34	34
Counties	55	55
Cities and Towns	98	98
Colleges and Universities	5	5
School Districts	235	231
High Schools	5	5
Other Agencies	112	111
Total	544	539

PERS-DBRP Active Membership by Employer Type		
Employer Type	June 30, 2018	June 30, 2017
State Agencies	10,059	10,933
Counties	5,514	5,482
Cities	3,550	3,437
Universities	2,647	2,742
High Schools	74	79
School Districts	5,630	5,581
Other Agencies	1,172	1,141
Total	28,646	29,395

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member	7.90%
State & University Employer	8.57%
Local Government Employer	8.47%
School District Employer	8.20%
State for Local Governments	0.10%
State for School Districts	0.37%

Member contributions are deducted from each member's salary and remitted by participating employers. An individual account is established for each member's contributions and interest allocations until a request for retirement or refund is processed.

The 7.9% member contributions will be decreased to 6.9% on January 1 following actuary valuation results that show the

amortization period has dropped below 25 years and would remain below 25 years following the reduction of both the additional employer and additional member contribution rates. There will be no reduction to the member contributions on January 1, 2019 due to the amortization period being 38 years at June 30, 2018.

The employee education program is funded by 0.04% of the employer's contributions.

Employer contributions temporarily increased 1.0%, effective July 1, 2013. Further, employer contributions increase an additional 0.1% a year over 10 years beginning July 1, 2014, through 2024. The employer additional contributions, including the 0.27% added in 2007 and 2009, terminate on January 1 following actuary valuation results that show the amortization period has dropped below 25 years and would remain below 25 years following the reduction of both the additional employer and member contribution rates. Based on the June 30, 2018 actuarial valuation, the additional contributions will not be terminated on January 1, 2019. (Reference Schedule of Contribution Rates on page 92).

Employer contributions are required to be paid on working retiree compensation. Member contributions are not required for working retirees.

PERS-DBRP receives a supplemental state appropriation from the general fund of the State of Montana. The total amount received for fiscal year 2018 was \$33.6 million. These are recorded as *State Appropriations* on the financial statements.

During the 2017 Legislative Session House Bill (HB) 648 was passed. Effective July 1, 2017, revenue from coal severance taxes and interest income from the coal severance tax permanent fund previously statutorily appropriated to the

PERS defined benefit trust fund was replaced with the State statutory appropriation.

Plan Membership Elections: MPERA has included in the financial statements \$2,068,870 in *Transfers to DCRP* and \$198,062 in *Transfers to MUS-RP*. These transfers reflect the DCRP and MUS-RP contributions of participants that filed elections at or near the June 30 cutoff date. The contributions were transferred in early fiscal year 2019.

Additional Service Purchase Due to a Reduction in Force: Section 19-2-706, MCA allows state and university system employees who are eligible for a service retirement and whose positions have been eliminated due to a reduction in force, to have their employer pay a portion of the total cost of purchasing up to three years of “1-for-5” additional service. The employer has up to ten years to complete payment for the service purchases and is charged the actuarially required rate of return as established by the PERB on the unpaid balance. The employees participating under section 19-2-706, MCA increased from 245 in fiscal year 2017 to 254 in fiscal year 2018. The contributions received (including interest) during fiscal year 2018 totaled \$261,836. These are recorded in the *Accounts Receivable* on the financial statements. The outstanding balance at June 30, 2018, totaled \$15,952. This is recorded as *Notes Receivable* on the financial statements.

Public Employees’ Retirement System-DBRP Education Fund: Education is provided to all members of the PERS regardless of plan choice as governed by section 19-3-112, MCA. The education must be presented with impartial and balanced information about plan choices, investments and retirement planning.

The education program consists of ongoing transfer education for new members and

investment/retirement planning education for all active members.

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for PERS-DBRP.

The discount rate as of June 30, 2018 is 7.65% which is the assumed long-term expected rate of return on PERS-DBRP investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the changes in discount rate are as follows.

As of June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 8,798,484,550	\$ 7,867,135,877	\$ 7,102,350,197
Fiduciary Net Position	5,779,994,008	5,779,994,008	5,779,994,008
Net Pension Liability	\$ 3,018,490,542	\$ 2,087,141,869	\$ 1,322,356,189
Fiduciary Net Position as a % of the TPL	65.69%	73.47%	81.38%

During the measurement year there were no changes in benefits.

At June 30, 2018, the PERS-DBRP total pension liability (TPL) was \$7.9 billion. The Plan’s fiduciary net position was \$5.8 billion leaving a net pension liability of \$2.1 billion. The Plan fiduciary net position as a percentage of the total pension liability was 73.47% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than

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30 years. As of June 30, 2018, the statutory contribution rates are not sufficient to amortize the unfunded actuarial liability within 30 years. As of June 30, 2018, the PERS-DBRP

amortizes in 38 years. The funded ratio is 73.81%.

Public Employees' Retirement System-DCRP Disability OPEB (DCRP Disability OPEB)

Plan Description: The DCRP Disability OPEB is considered a cost-sharing multiple-employer plan that provides an other post-employment defined benefit for the PERS-DCRP members.

All new PERS members are initially members of the PERS-DBRP and have a 12-month window during which they may choose to remain in the PERS-DBRP or join the PERS-DCRP by filing an irrevocable election. Members may not be members of both the defined benefit and defined contribution

retirement plans. The PERS-DCRP provides disability benefits to eligible members who elect the PERS-DCRP.

The DCRP Disability OPEB Trust Fund was established on July 1, 2002, and is governed by section 19-3-2141, MCA. Benefits of this long-term disability plan are established by state law and can only be amended by the Legislature. This benefit is based on eligibility, years of service, and compensation. Member rights are vested after five years of service. A brief summary of eligibility and benefits follows.

PERS-DCRP Disability OPEB Summary of benefits

Member's highest average compensation (HAC)

- Hired prior to July 1, 2011 - HAC during the highest 36 consecutive months.
- Hired on or after July 1, 2011 - HAC during the highest 60 consecutive months.

Eligibility for benefit

- Any age with 5 years of membership service.

Vesting 5 years of membership service

Monthly benefit formula

Members hired prior to July 1, 2011:

- Less than 25 years of membership service: 1.785% of HAC per year of service credit;
- 25 years of membership service or more: 2% of HAC per year of service credit.
- Benefit is payable to age 65 for disabilities occurring prior to age 60, or up to five years for disabilities occurring after age 60.

Members hired on or after July 1, 2011:

- Less than 10 years of membership service: 1.5% of HAC per year of service credit
- 10 years or more, but less than 30 years of membership service: 1.785% of HAC per year of service credit;

PERS-DCRP Disability OPEB Summary of benefits (continued)

Members hired on or after July 1, 2011 (continued):

- 30 years or more of membership service: 2% of HAC per year of service credit.
- Benefit is payable to age 70 for disabilities occurring prior to age 65, or up to five years for disabilities occurring after age 65.

Members cannot receive distributions from their individual defined contribution account while receiving payments from the DCRP Disability OPEB Trust Fund. Participants may choose to receive a distribution from their individual account instead of applying for or receiving a disability benefit.

PERS-DCRP PARTICIPATING EMPLOYERS		
<u>Employers</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
State Agencies	32	32
Counties	53	53
Cities and Towns	58	55
Universities	5	5
School Districts	117	107
High Schools	4	4
Other Agencies	47	44
Total	316	300

PERS-DCRP Active Membership by Employer Type		
<u>Employer Type</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
State Agencies	1,296	1,254
Counties	416	383
Cities	320	289
Universities	143	138
High Schools	5	5
School Districts	301	274
Other Agencies	209	198
Total	2,690	2,541

Contributions: Under section 19-3-2117, MCA the employers are the only contributors to the DCRP Disability OPEB. The employer contribution rate is 0.30% of a DCRP member’s compensation, which is allocated to the long-term disability plan trust fund to provide disability benefits to eligible DCRP members. (Reference Schedule of Contribution Rates on page 92).

As of June 30, 2018, there are eight members receiving a benefit from the disability plan, five more than as of June 30, 2017.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the most recent actuarial valuation, the statutory contribution rates are sufficient to amortize the unfunded actuarial liability. The DCRP Disability OPEB assets gained 7.24% on an annualized market value basis during the year ended June 30, 2018. This return was above the assumed rate of return of 3.50%, resulting in an investment gain of about \$492,589. The actuarial value of assets is set equal to the market value of assets. The DCRP Disability OPEB unfunded actuarial liability was a gain of \$0.10 million and the funded ratio was 102.32%. Compared to the June 30, 2017 actuarial valuation, the Plan’s unfunded liability was \$0.51 million, and the funded ratio was 87.14%.

GASB Statement No. 74 Reporting will not be implemented at this time due to the liability being immaterial to the plan as a whole.

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Judges' Retirement System (JRS)

Plan Description: The JRS is a single-employer defined benefit plan established in 1967, and governed by Title 19, chapters 2 & 5 of the MCA. This system provides benefits for all Montana judges of the district courts, justices of the Supreme Court, the Chief Water Judge and the Associate Water Judge. Benefits are established by state law and can only be

amended by the Legislature. The JRS provides retirement, disability, and death benefits to plan members and their beneficiaries. Benefits are based on eligibility, years of service, and compensation. Member rights are vested after five years of service. A brief summary of eligibility and benefits follows.

JRS Summary of benefits

Member's current salary or highest average compensation (HAC)

- Hired prior to July 1, 1997 and non-GABA - monthly compensation at time of retirement.
- Hired on or after July 1, 1997 or electing GABA - HAC during any consecutive 36 months.
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as part of a members' highest average compensation.

Eligibility for benefit

- Age 60, 5 years of membership service;
- Any age with 5 years of membership service - involuntary termination, actuarially reduced.

Vesting 5 years of membership service

Monthly benefit formula

3-1/3% of current salary (non-GABA) or HAC (GABA) per year of service credit for the first 15 years of service credit, plus 1.785% per year for each year after 15 years.

Guaranteed Annual benefit Adjustment (GABA)

Hired on or after July 1, 1997, or those electing GABA - after the member has completed 12 full months of retirement, the member's benefit increases by a maximum of 3.0% each January, inclusive of all other adjustments to the member's benefit.

Minimum benefit adjustment (non-GABA)

If hired prior to July 1, 1997 and member did not elect GABA - current salary of an active member in same position is used in the calculation of the monthly benefit each time the Legislature increases salaries for active judges.

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member	7.00%
Employer	25.81%

Member contributions are deducted from each member’s salary and remitted by the participating employer. An individual account is established for each member’s contributions and interest allocations until a retirement or refund request is processed.

As a result of the November 2017 Special Legislative Session, Senate Bill 1 was passed temporarily suspending employer contributions beginning the first full pay period of January 2018. This temporary suspension terminates immediately after the last full pay period of June 2019 with employer contributions returning to 25.81% at this time. (Reference Schedule of Contribution Rates on page 92).

JRS PARTICIPATING EMPLOYERS		
Employer	June 30, 2018	June 30, 2017
State Agency - Supreme Court	1	1
Total	1	1

JRS Active Membership by Employee Type		
Employee Type	June 30, 2018	June 30, 2017
GABA	52	52
Non-GABA	3	4
Total	55	56

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for JRS.

The discount rate as of June 30, 2018 is 7.65% which is the assumed long-term expected rate

Highway Patrol Officers’ Retirement System (HPORS)

Plan Description: The HPORS is a single-employer, defined benefit plan established July 1, 1945, and governed by Title 19, chapters 2

of return on JRS investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of NPA to changes in the discount rate are as follows.

As of June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 66,107,090	\$ 60,192,186	\$ 55,086,754
Fiduciary Net Position	102,650,688	102,650,688	102,650,688
Net Pension Asset	\$ (36,543,598)	\$ (42,458,502)	\$ (47,563,934)
Fiduciary Net Position as a % of the TPL	155.28%	170.54%	186.34%

During the measurement year there were no changes in benefits.

At June 30, 2018, the JRS total pension liability (TPL) was \$60.2 million. The Plan’s fiduciary net position was \$102.7 million leaving a net pension asset of \$42.5 million. The Plan fiduciary net position as a percentage of the total pension liability was 170.54% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the JRS amortizes in 0 years, meaning it is fully funded. The funded ratio is 161.29%.

& 6 of the MCA. This system provides retirement benefits to all members of the Montana Highway Patrol, including

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supervisory personnel. Benefits are established by state law and can only be amended by the Legislature. The HPORS provides retirement, disability, and death benefits to plan members and their statutory beneficiaries. Benefits are based on eligibility, years of service, and

highest average compensation. Member rights for death and disability are vested immediately. All other rights are vested after five or ten years of service. A brief summary of eligibility and benefits follows.

HPORS Summary of benefits

Member's highest average compensation (HAC)

- Highest average compensation during any consecutive 36 months.
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as part of a member's highest average compensation.

Eligibility for benefit

- 20 years of membership service, regardless of age.

Early Retirement

- Hired prior to July 1, 2013 - 5 years of membership service, actuarially reduced from age 60.
- Hired on or after July 1, 2013 - 10 years of membership service, actuarially reduced from age 60.

Vesting

- Hired prior to July 1, 2013 - 5 years of membership service
- Hired on or after July 1, 2013 - 10 years of membership service

Monthly benefit formula

- Retire prior to July 1, 2013 - 2.5% of HAC per year of service credit.
- Retire on or after July 1, 2013 - 2.6% of HAC per year of service credit.

Second Retirement

Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.

- If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member:
 - is not awarded service credit for the period of reemployment;
 - is refunded the accumulated contributions associated with the period of reemployment;
 - starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a Guaranteed Annual Benefit Adjustment (GABA) in January immediately following second retirement.

HPORS Summary of benefits (continued)

- If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:
 - is awarded service credit for the period of reemployment;
 - starting the first month following termination of service, receives:
 - * the same retirement benefit previously paid to the member; and
 - * a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the member's rehire date; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:
 - * on the initial retirement benefit in January immediately following second retirement, and
 - * on the second retirement benefit starting in January after receiving that benefit for at least 12 months.
- A member who returns to covered service is not eligible for a disability benefit.

Guaranteed Annual Benefit Adjustment (GABA)

- Hired on or after July 1, 1997, or those electing GABA - after the member has completed 12 full months of retirement, the member's benefit increases by a maximum of 3.0% each January, inclusive of all other adjustments to the member's benefit.
- Hired on or after July 1, 2013 - after the member has completed 36 full months of retirement, the member's benefit increases by a maximum of 1.5% each January, inclusive of all other adjustments to the member's benefit.

Minimum monthly benefit (non-GABA)

If hired prior to July 1, 1997 and member did not elect GABA - monthly benefits are increased each July when they fall below a statutorily guaranteed minimum. Any annual increase is limited to 5.0% over the current benefit and the benefit may not exceed 60% of the current base salary of a probationary officer.

HPORS PARTICIPATING EMPLOYERS		
<u>Employer</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
State Agency - Department of Justice	1	1
Total	1	1

HPORS Active Membership by Employee Type		
<u>Employee Type</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
GABA	233	238
Non-GABA	0	0
Total	233	238

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member:	
Hired prior to 7/1/1997 and not electing GABA	13.00%
Hired after 6/30/1997 or electing GABA	13.05%
Employer	28.15%
State (General Fund)	10.18%

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Member contributions are deducted from each member's salary and remitted by the participating employer. An individual account is established for each member's contributions and interest allocations until a retirement or refund request is processed. (Reference Schedule of Contribution Rates on page 92).

Additional Service Purchase Due to a Reduction in Force: Section 19-2-706, MCA allows state and university system employees who are eligible for a service retirement and whose positions have been eliminated to have their employer pay a portion of the total cost of purchasing up to three years of "1-for-5" additional service. The employer has up to ten years to complete payment for the service purchases and is charged the actuarially required rate of return as established by the PERB on the unpaid balance. No employees have taken advantage of this provision to date.

Supplemental Benefit for Retirees: Section 19-6-709, MCA provides eligible Montana highway patrol officers retired prior to July 1, 1991, or their survivors, an annual supplemental lump-sum payment distributed each September. This lump-sum payment is funded by a statutory appropriation requested by the PERB from the general fund. Factors impacting eligibility include the number of years the recipient has received a service retirement benefit or disability benefit, the recipient's age, and whether the recipient is employed in a position covered by a retirement system under Title 19.

Deferred Retirement Option Program (DROP): Eligible members of HPORS can participate in the DROP by filing a one-time irrevocable election with the PERB. The DROP is governed by Title 19, chapter 6, part 10. A member must have completed at least twenty years of membership service to be eligible. The member may elect to participate in the DROP

for a minimum of one month and a maximum of 60 months and may participate in the DROP only once. A participant remains a member of the HPORS, but will not receive membership service or service credit in the system for the duration of the member's DROP period. During participation in the DROP, all mandatory contributions continue to the retirement system, except the member contribution which goes to the member's DROP account. A monthly benefit is calculated based on salary and years of service to date as of the beginning of the DROP period. The monthly benefit is paid into the member's DROP account until the end of the DROP period. At the end of the DROP period, the participant may receive the balance of the DROP account in a lump-sum payment or in a direct rollover to another eligible plan, as allowed by the IRS. If the participant continues employment after the DROP period ends, they will again accrue membership service and service credit. The DROP account cannot be distributed until the employment is formally terminated. As of June 30, 2018, there were 13 DROP participants. The balance of the DROP accounts is \$1,173,217.

HPORS DROP Participation	
	<u>June 30, 2018</u>
Participants Beginning of Year	10
Participants Added	5
Completed DROP	2
Participants End of Year	13
DROP Distributions	\$ 231,957

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for HPORS.

The discount rate as of June 30, 2018 is 7.65%, which is the assumed long-term expected rate of return on HPORS investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the changes in the discount rate are as follows.

As of June 30, 2018	1% Decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 259,521,549	\$ 227,580,553	\$ 201,774,314
Fiduciary Net Position	149,198,868	149,198,868	149,198,868
Net Pension Liability	\$ 110,322,681	\$ 78,381,685	\$ 52,575,446
Fiduciary Net Position as a % of the TPL	57.49%	65.56%	73.94%

During the measurement year there were no changes to benefits.

Sheriffs' Retirement System (SRS)

Plan Description: The SRS is a multiple-employer, cost-sharing defined benefit plan established July 1, 1974, and governed by Title 19, chapters 2 & 7, MCA. This plan provides retirement benefits to all Department of Justice criminal and gambling investigators hired after July 1, 1993, all detention officers hired after July 1, 2005, and to all Montana sheriffs. Benefits are established by state law and can

At June 30, 2018, the HPORS total pension liability (TPL) was \$227.6 million. The Plan's fiduciary net position was \$149.2 million leaving a net pension liability of \$78.4 million. The Plan fiduciary net position as a percentage of the total pension liability was 65.56% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the statutory contribution rates are not sufficient to amortize the unfunded actuarial liability. As of June 30, 2018, the HPORS amortizes in 40 years. The funded ratio is 64.03%.

only be amended by the Legislature. The SRS provides retirement, disability, and death benefits to plan members and their beneficiaries. Benefits are based on eligibility, years of service, and highest average compensation. Member rights are vested after five years of service. A brief summary of eligibility and benefits follows.

SRS Summary of benefits

Member's highest average compensation (HAC)

- Hired prior to July 1, 2011 - highest average compensation during any consecutive 36 months;
- Hired on or after July 1, 2011 - highest average compensation during any consecutive 60 months.
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as a part of a member's highest average compensation.

Eligibility for benefit

- 20 years of membership service, regardless of age.

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SRS Summary of benefits (continued)

Early Retirement

- Age 50, 5 years of membership service, actuarially reduced.

Vesting 5 years of membership service

Monthly benefit formula

- 2.5% of HAC per year of service credit.

Second Retirement

Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.

- If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member:
 - is not awarded service credit for the period of reemployment;
 - is refunded the accumulated contributions associated with the period of reemployment;
 - starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a Guaranteed Annual Benefit Adjustment (GABA) in January immediately following second retirement.
- If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:
 - is awarded service credit for the period of reemployment;
 - starting the first month following termination of service, receives:
 - * the same retirement benefit previously paid to the member; and
 - * a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the members' rehire date; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:
 - * on the initial retirement benefit in January immediately following second retirement, and
 - * on the second retirement benefit starting in January after receiving that benefit for at least 12 months.
- A member who returns to covered service is not eligible for a disability benefit.

Guaranteed Annual Benefit Adjustment (GABA)

After the member has completed 12 full months of retirement, the member's benefit increases by the applicable percentage (provided below) each January, inclusive of all other adjustments to the member's benefit.

- 3.0% for members hired prior to July 1, 2007;
- 1.5% for members hired on or after July 1, 2007

SRS PARTICIPATING EMPLOYERS		
Employers	June 30, 2018	June 30, 2017
State Agencies - Department of Justice	1	1
Counties	56	56
Total	57	57

SRS Active Membership by Employer Type		
Employer Type	June 30, 2018	June 30, 2017
Dept of Justice	55	55
Counties	1,374	1,360
Total	1,429	1,415

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member	10.495%
Employer	13.115%

Member contributions are deducted from each member’s salary and remitted by participating employers. An individual account is established for each member’s contributions and interest allocations until a retirement or refund request is processed. (Reference Schedule of Contribution Rates on page 92).

Employer contributions are required to be paid on working retiree compensation. Member contributions are not required for working retirees.

During the 2017 Legislative Session, House Bill 383 was passed temporarily increasing both the employee and employer contributions. Effective July 1, 2017, the employee contributions increased 1.25%, from 9.245% to 10.495%. Effective July 1, 2017, the employer had an additional contribution increase of 3%, from 0.58% to 3.58%, for a total employer contribution rate of 13.115%. The employee contributions will return to 9.245% and the employer contributions will return to 9.535%

when reducing the employee contribution and terminating the additional employer contributions will not cause the amortization period to exceed 25 years.

Additional Service Purchase Due to a Reduction in Force: Section 19-2-706, MCA allows state employees who are eligible for a service retirement and whose positions have been eliminated to have their employer pay a portion of the total cost of purchasing up to three years of “1-for-5” additional service. The employer has up to ten years to complete payment for the service purchase and is charged the actuarial rate of return as established by the PERB on the unpaid balance. Three employees have taken advantage of this provision to date. All purchases are paid in full.

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for SRS.

The discount rate as of June 30, 2018 is 7.65%, which is the assumed long-term expected rate of return on SRS investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the changes in the discount rate is as follows.

As of June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 495,682,939	\$ 434,052,092	\$ 383,581,646
Fiduciary Net Position	358,880,360	358,880,360	358,880,360
Net Pension Liability	\$ 136,802,579	\$ 75,171,732	\$ 24,701,286
Fiduciary Net Position as a % of the TPL	72.40%	82.68%	93.56%

During the measurement year there were no changes in benefits.

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At June 30, 2018, the SRS total pension liability (TPL) was \$434.1 million. The Plan's fiduciary net position was \$358.9 million leaving a net pension liability of \$75.2 million. The Plan fiduciary net position as a percentage of the total pension liability was 82.68% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is

sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the statutory contribution rates are sufficient to amortize the unfunded actuarial liability. As of June 30, 2018, the SRS amortizes in 21 years. The funded ratio is 81.04%.

Game Wardens' and Peace Officers' Retirement System (GWPORS)

Plan Description: The GWPORS is a multiple-employer, cost-sharing defined benefit plan established in 1963 and governed by Title 19, chapters 2 & 8, MCA. This system provides retirement benefits to all persons employed as a game warden, warden supervisory personnel, or state peace officer. Benefits are established by state law and can only be amended by the Legislature. The

GWPORS provides retirement, disability, and death benefits to plan members and their beneficiaries. Benefits are based on eligibility, years of service, and highest average compensation. Member rights are vested after five years of service. A brief summary of eligibility and benefits follows.

GWPORS Summary of benefits

Member's highest average compensation (HAC)

- Hired prior to July 1, 2011 - highest average compensation during any consecutive 36 months;
- Hired on or after July 1, 2011 - highest average compensation during any consecutive 60 months.
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as a part of a member's highest average compensation.

Eligibility for benefit

- Age 50, 20 years of membership service.

Early Retirement (reduced benefit)

- Age 55, vested members who terminate employment prior to 20 years of membership service.

Vesting 5 years of membership service.

Monthly benefit formula

- 2.5% of HAC per year of service credit.

GWPORS Summary of benefits (continued)

Second Retirement

Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.

- If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member:
 - is not awarded service credit for the period of reemployment;
 - is refunded the accumulated contributions associated with the period of reemployment;
 - starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a Guaranteed Annual Benefit Adjustment (GABA) in January immediately following second retirement.
- If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:
 - is awarded service credit for the period of reemployment;
 - starting the first month following termination of service, receives:
 - * the same retirement benefit previously paid to the member; and
 - * a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the members' rehire date; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:
 - * on the initial retirement benefit in January immediately following second retirement, and
 - * on the second retirement benefit starting in January after receiving that benefit for at least 12 months.
- A member who returns to covered service is not eligible for a disability benefit.

Guaranteed Annual benefit Adjustment (GABA)

After the member has completed 12 full months of retirement, the member's benefit increases by the applicable percentage (provided below) each January, inclusive of all other adjustments to the member's benefit.

- 3.0% for members hired prior to July 1, 2007;
- 1.5% for members hired on or after July 1, 2007

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Member contributions are deducted from each member's salary and remitted by participating employers. An individual account is established for each member's contributions and interest allocations until a retirement or refund request is processed. (Reference Schedule of Contribution Rates on page 92).

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member	10.56%
Employer	9.00%

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GWPORS PARTICIPATING EMPLOYERS		
Employers	June 30, 2018	June 30, 2017
State Agencies	4	4
Colleges and Universities	3	3
Total	7	7

GWPORS Active Membership by Employer Type		
Employer	June 30, 2018	June 30, 2017
Dept of Corrections	725	739
Dept FW&P	113	105
Dept of Livestock	41	42
Dept of Transportation	85	81
Universities	46	45
Total	1,010	1,012

Additional Service Purchase Due to a Reduction in Force: Section 19-2-706, MCA allows state and university system employees who are eligible for a service retirement and whose positions have been eliminated to have their employer pay a portion of the total cost of purchasing up to three years of “1-for-5” additional service. The employer has up to ten years to complete payment for the service purchases and is charged the actuarially required rate of return as established by the PERB on the unpaid balance. No employees have taken advantage of this provision to date.

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for GWPORS.

The discount rate as of June 30, 2018 is 7.65%, which is the assumed long-term expected rate of return on GWPORS investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the change in the discount rate is as follows.

As of June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 270,230,544	\$ 234,469,658	\$ 205,320,023
Fiduciary Net Position	193,522,528	193,522,528	193,522,528
Net Pension Liability	\$ 76,708,016	\$ 40,947,130	\$ 11,797,495
Fiduciary Net Position as a % of the TPL	71.61%	82.54%	94.25%

During the measurement year there were no changes in benefits.

At June 30, 2018, the GWPORS total pension liability was \$234.5 million. The Plan’s fiduciary net position was \$193.5 million leaving a net pension liability of \$40.9 million. The Plan fiduciary net position as a percentage of the total pension liability was 82.54% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the statutory contribution rates are not sufficient to amortize the unfunded actuarial liability. The GWPORS amortizes in 72 years. The funded ratio is 82.95%.

Municipal Police Officers' Retirement System (MPORS)

Plan Description: The MPORS is a multiple-employer, cost-sharing defined benefit plan established in 1974 and is governed by Title 19, chapters 2 & 9 of the MCA. This plan covers all municipal police officers employed by first- and second-class cities and other cities that adopt the plan. Benefits are established by state law and can only be amended by the Legislature. The

MPORS provides retirement, disability, and death benefits to plan members and their statutory beneficiaries. Benefits are based on eligibility, years of service, and compensation. Member rights for death and disability are vested immediately. All other rights are vested after five years of service. A brief summary of eligibility and benefits follows.

MPORS Summary of benefits

Member's final average compensation (FAC)

- Hired prior to July 1, 1977 - average monthly compensation of final year of service;
- Hired on or after July 1, 1977 - final average compensation (FAC) for last consecutive 36 months.
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as a part of a member's final average compensation.

Eligibility for benefit

- 20 years of membership service, regardless of age.

Second Retirement

- Age 50, re-employed in a MPORS position

Early Retirement

- Age 50, 5 years of membership service.

Vesting 5 years of membership service

Monthly benefit formula

- 2.5% of FAC per year of service credit.

Second retirement benefit formula

Re-calculated using specific criteria for members who return to covered employment prior to July 1, 2017:

- Less than 20 years of membership service, upon re-employment, repay benefits and subsequent retirement is based on total MPORS service.
- More than 20 years of membership service, upon re-employment, receives initial benefit and a new retirement benefit based on additional service credit and FAC after re-employment.

FINANCIAL SECTION

MPORS Summary of benefits continued:

Second Retirement

Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.

- If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member:
 - is not awarded service credit for the period of reemployment;
 - is refunded the accumulated contributions associated with the period of reemployment;
 - starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a Guaranteed Annual Benefit Adjustment (GABA) in January immediately following second retirement.
- If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:
 - is awarded service credit for the period of reemployment;
 - starting the first month following termination of service, receives:
 - * the same retirement benefit previously paid to the member; and
 - * a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the members' rehire date; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:
 - * on the initial retirement benefit in January immediately following second retirement, and
 - * on the second retirement benefit starting in January after receiving that benefit for at least 12 months.
- A member who returns to covered service is not eligible for a disability benefit.

Guaranteed Annual Benefit Adjustment (GABA)

Hired on or after July 1, 1997, or those electing GABA - after the member has completed 12 full months of retirement, the member's benefit increases by a maximum of 3.0% each January, inclusive of all other adjustments to the member's benefit.

Minimum benefit adjustment (non-GABA)

If hired before July 1, 1997 and member did not elect GABA - the monthly retirement, disability or survivor's benefit should not be less than ½ the compensation of a newly confirmed officer in the city where the member was last employed.

MPORS Active Membership by Employee Type		
Employee Type	June 30, 2018	June 30, 2017
GABA	783	770
Non-GABA	4	5
Total	787	775

MPORS PARTICIPATING EMPLOYERS		
Employers	June 30, 2018	June 30, 2017
Cities	33	33
Total	33	33

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Member contribution rates are dependent upon date of hire as a police officer. Contributions are deducted from each member's salary and remitted by participating employers. An individual account is established for each member's contributions and interest allocations until a retirement or refund request is processed.

The State contributions are requested at the beginning of the fiscal year based on the previous fiscal year compensation and are due no later than November 1. (Reference Schedule of Contribution Rates on page 92).

Contribution Rates as a Percent of Salary	
<i>Fiscal year ended June 30, 2018</i>	
Member:	
Hired after 6/30/1975 and prior to 7/1/1979 and not electing GABA	7.00%
Hired after 6/30/1979 and prior to 7/1/1997 and not electing GABA	8.50%
Hired after 6/30/1997 or members electing GABA	9.00%
Employer	14.41%
State (General Fund)	29.37%

Deferred Retirement Option Plan (DROP): Eligible members of MPORS can participate in the DROP by filing a one-time irrevocable election with the PERB. The DROP is governed by Title 19, chapter 9, part 12, MCA. A member must have completed at least twenty years of membership service to be eligible. They may elect to participate in the DROP for a minimum of one month up to a maximum of 60 months and may participate in the DROP only once. A participant remains a member of the MPORS, but will not receive membership service or service credit in the system for the duration of the member's DROP period. During participation in the DROP, all mandatory contributions continue to the

retirement system. A monthly benefit is calculated based on salary and years of service as of the beginning of the DROP period. The monthly benefit is paid into the member's DROP account until the end of the DROP period. At the end of the DROP period, the participant may receive the balance of the DROP account in a lump-sum payment or in a direct rollover to another eligible plan, as allowed by the IRS. If the participant continues employment after the DROP period ends, they will again accrue membership service and service credit. The DROP account cannot be distributed until employment is formally terminated. As of June 30, 2018, there were 62 DROP participants. Since program inception, a total of 160 members have participated in the DROP. The balance of the DROP accounts is \$9.8 million.

MPORS DROP Participation		
	June 30, 2018	June 30, 2017
Participants Beginning of Year	61	61
Participants Added	12	6
Completed DROP	11	6
Participants End of Year	62	61
DROP Distributions	\$ 2,061,444	\$ 928,523

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for MPORS.

The discount rate as of June 30, 2018 is 7.65%, which is the assumed long-term expected rate of return on MPORS investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the change in the discount rate is as follows.

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As of June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 678,395,940	\$ 589,571,910	\$ 518,536,361
Fiduciary Net Position	418,314,296	418,314,296	418,314,296
Net Pension Liability	\$ 260,081,644	\$ 171,257,614	\$ 100,222,065
Fiduciary Net Position as a % of the TPL	61.66%	70.95%	80.67%

During the measurement year there were no changes in benefit.

At June 30, 2018, the MPORS total pension liability was \$589.6 million. The Plan's fiduciary net position was \$418.3 million leaving a net pension liability of \$171.3 million. The Plan fiduciary net position as a

percentage of the total pension liability was 70.95% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the statutory contribution rates are sufficient to amortize the unfunded actuarial liability. As of June 30, 2018, the MPORS amortizes in 20 years. The funded ratio is 67.69%.

Firefighters' Unified Retirement System (FURS)

Plan Description: The FURS is a multiple-employer, cost-sharing defined benefit plan established in 1981, and governed by Title 19, chapters 2 & 13, MCA. This system provides retirement benefits to firefighters employed by first- and second-class cities or by other cities and rural fire district departments that adopt the plan; and to firefighters hired by the Montana Air National Guard (MANG) on or after October 1, 2001. Benefits are established by

state law and can only be amended by the Legislature. The FURS provides retirement, disability, and death benefits to plan members and their beneficiaries. Benefits are based on eligibility, years of service, and compensation. Member rights for death and disability are vested immediately. All other member rights are vested after five years of service. A brief summary of eligibility and benefits follows.

FURS Summary of benefits

Member's compensation

- Hired prior to July 1, 1981 and not electing GABA - highest monthly compensation (HMC);
- Hired on or after July 1, 1981 and those electing GABA - highest average compensation (HAC) during any consecutive 36 months.
- Hired on or after July 1, 2013 - 110% annual cap on compensation considered as a part of a member's highest average compensation.

Eligibility for benefit

- 20 years of membership service, regardless of age.

Early Retirement

- Age 50, 5 years of membership service.

Vesting 5 years of membership service

FURS Summary of benefits (continued)

Monthly benefit formula

- 1) Members hired prior to July 1, 1981 and not electing GABA are entitled to the greater of:
 - 2.5% of HMC per year of service; OR
 - i) if less than 20 years of service -
 - 2% of HMC for each year of service;
 - ii) if more than 20 years of service -
 - 50% of the member's HMC plus 2% of the member's HMC for each year of service over 20 years
- 2) Members hired on or after July 1, 1981 and those electing GABA receive 2.5% of HAC per year of service.

Second Retirement

Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.

- If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member:
 - is not awarded service credit for the period of reemployment;
 - is refunded the accumulated contributions associated with the period of reemployment;
 - starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a Guaranteed Annual Benefit Adjustment (GABA) in January immediately following second retirement.
- If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:
 - is awarded service credit for the period of reemployment;
 - starting the first month following termination of service, receives:
 - * the same retirement benefit previously paid to the member; and
 - * a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the members' rehire date; and
 - does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:
 - * on the initial retirement benefit in January immediately following second retirement, and
 - * on the second retirement benefit starting in January after receiving that benefit for at least 12 months.
- A member who returns to covered service is not eligible for a disability benefit.

Guaranteed Annual Benefit Adjustment (GABA)

Hired on or after July 1, 1997, or those electing GABA - after the member has completed 12 full months of retirement, the member's benefit increases by a maximum of 3.0% each January, inclusive of all other adjustments to the member's benefit.

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FURS Summary of benefits (continued)

Minimum benefit adjustment (non-GABA)

If hired before July 1, 1997 and member did not elect GABA, the monthly retirement, disability or survivor's benefit should not be less than ½ the compensation of a newly confirmed firefighter employed by the city that last employed the member (provided the member has at least ten years of membership service).

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature. Contributions are deducted from each member's salary and remitted by participating employers. An individual account is established for each member's contributions and interest allocations until a retirement or refund request is processed.

State contributions are requested at the beginning of each fiscal year based on previous fiscal year salary and are due no later than November 1. (Reference Schedule of Contribution Rates on page 92).

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member:	
Hired prior to 7/1/97 and not electing GABA	9.50%
Hired after 6/30/1997 or electing GABA	10.70%
Employer	14.36%
State (General Fund)	32.61%

Effective July 1, 2013, employer and state contributions are required to be paid on working retiree compensation. Member contributions are not required for working retirees.

FURS PARTICIPATING EMPLOYERS		
Employers	June 30, 2018	June 30, 2017
State Agencies - Department of Military Affairs	1	1
Cities	15	15
Rural Fire Districts	11	11
Total	27	27

FURS Active Membership by Employee Type		
Employee Type	June 30, 2018	June 30, 2017
GABA	688	675
Non-GABA	3	3
Total	691	678

Additional Service Purchase Due to a Reduction in Force: Section 19-2-706, MCA allows state and university system employees who are eligible for a service retirement and whose positions have been eliminated to have their employer pay a portion of the total cost of purchasing up to three years of "1-for-5" additional service. The employer has up to ten years to complete payment for the service purchase and is charged the actuarially required rate of return as established by the PERB on the unpaid balance. No employees have taken advantage of this provision to date.

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for FURS.

The discount rate as of June 30, 2018 is 7.65%, which is the assumed long-term expected rate of return on FURS investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the changes in the discount rate are as follows.

As of June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 631,332,152	\$ 549,105,969	\$ 482,871,236
Fiduciary Net Position	433,934,505	433,934,505	433,934,505
Net Pension Liability	\$ 197,397,647	\$ 115,171,464	\$ 48,936,731
Fiduciary Net Position as a % of the TPL	68.73%	79.03%	89.87%

During the measurement year there were no changes in benefits.

At June 30, 2018, the FURS total pension liability was \$549.1 million. The Plan’s fiduciary net position was \$433.9 million leaving a net pension liability of \$115.2 million. The Plan fiduciary net position as a

percentage of the total pension liability was 79.03% at June 30, 2018.

Actuarial Status: The statutory funding rate is tested in the valuation to determine if it is sufficient to cover the Normal Cost Rate plus an amortization payment of the Unfunded Actuarial Liability, if any, over no more than 30 years. As of June 30, 2018, the statutory contribution rates are sufficient to amortize the unfunded actuarial liability. As of June 30, 2018, the FURS amortizes in 10 years. The funded ratio is 78.27%.

Volunteer Firefighters’ Compensation Act (VFCA)

Plan Description: The VFCA is a multiple-employer, cost-sharing defined benefit plan. This compensation plan was established in 1965 and is governed by Title 19, chapter 17, MCA. All members are unpaid volunteers and the State of Montana is the only contributor to the plan. Benefits are established by state law and can only be amended by the Legislature. The VFCA provides pension, disability, and survivorship benefits for all eligible volunteer firefighters who are members of qualified volunteer fire companies in unincorporated areas, towns or villages and includes volunteer fire departments, fire districts, and fire service areas under the laws of the State of Montana. Benefits are based on eligibility and years of service. Member rights are vested after ten years of credited service. VFCA also provides

limited benefits for death or injuries incurred in the line of duty.

A member who chooses to retire and draw a pension benefit may return to service with a volunteer fire department without loss of benefits. However, a returning retired member may not be considered an active member accruing credit for service.

VFCA is a qualified Length of Service Award Plan (LOSAP) under 457(e)(11)(B) of the Internal Revenue Service tax code. This is only for tax reporting purposes. This does not change any requirements of the program.

A brief summary of eligibility and benefits follows.

VFCA Summary of Benefits

Eligibility for benefit

- Age 55, 20 years of credited service;
- Age 60, 10 years of credited service.

Vesting 10 years of credited service

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VFCA Summary of benefits (continued)

Monthly benefit formula (Effective January 1, 2016)

- \$8.75 per year of credited service up to 20 years;
- \$7.50 per year of credited service after 20 years

As of January 1, 2016, retirees may receive a benefit per month equal to \$8.75 for each year of credited service, for up to 20 years of credited service. All retirees who continued to be an active member beyond 20 years, the benefit must be increased by \$7.50 a month for each year of credited service up to 30 years (maximum benefit \$250).

Additional benefit

Effective July 1, 2011, members who retire on or after July 1, 2011 and have greater than 30 years of credited service will receive \$7.50 per month for each additional year of credited service over 30 years if the pension trust fund is actuarially sound, amortizing any unfunded liabilities in 20 years or less. This determination will be made annually and a member's benefit will be capped at \$250 a month (30 years of credited service) if the amortization period grows to greater than 20 years.

Contributions: The State is the only contributor to the VFCA. Contributions are 5% of fire insurance premium taxes collected on certain fire risks. The State Auditor makes annual payments from the general fund to the Volunteer Firefighters' Compensation Act fund. (Reference Schedule of Contribution Rates on page 92).

Group Insurance Payments: Supplemental payments are available to qualified volunteer fire companies that provide additional group medical insurance for their members in case of death or injury incurred while in the line of duty. The payment is made to the volunteer fire companies and is equal to \$75 per year for each mobile firefighting unit owned by the volunteer fire company, up to a maximum of two units.

GASB Statement No. 67 Reporting: The membership data, method and assumptions used in calculations of the actuarially determined contributions, and plan provisions are the same as were described in the June 30, 2017 Actuarial Valuation Report for VFCA.

The discount rate as of June 30, 2018 is 7.65%, which is the assumed long-term expected rate of return on VFCA investments. Projections of the fiduciary net position have indicated that it is expected to be sufficient to make projected benefit payments for current members.

Changes in the discount rate affect the measurement of the TPL. At June 30, 2018, the sensitivity of the NPL to the changes of the discount rate are as follows.

At June 30, 2018	1% decrease 6.65%	Discount Rate 7.65%	1% Increase 8.65%
Total Pension Liability	\$ 50,937,112	\$ 46,396,146	\$ 42,550,403
Fiduciary Net Position	38,729,625	38,729,625	38,729,625
Net Pension Liability	\$ 12,207,487	\$ 7,666,521	\$ 3,820,778
Fiduciary Net Position as a % of the TPL	76.03%	83.48%	91.02%

During the measurement year there were no changes in benefits.

At June 30, 2018, the VFCA total pension liability (TPL) was \$46.4 million. The Plan's fiduciary net position was \$38.7 million leaving a net pension liability of \$7.7 million. The Plan fiduciary net position as a percentage of the total pension liability was 83.48% at June 30, 2018.

Actuarial Status: The actuarial contribution decreased to \$823,290 at the June 30, 2018 valuation from \$915,642 at the June 30, 2017 valuation. The actuarial contribution is determined as the normal cost, administrative

expense, and a 20-year open amortization of the unfunded actuarial liability. As of June 30, 2018, the VFCA amortizes in 5 years. The funded ratio is 82.76%.

Public Employees' Retirement System-DCRP (PERS-DCRP)

Plan Description: The PERS-Defined Contribution Retirement Plan (DCRP) is a multiple-employer plan established July 1, 2002 and governed by Title 19, chapters 2 & 3, MCA. This plan is available to eligible employees of the State, Montana University System, local governments, and school districts. All new PERS members are initially members of the PERS-DBRP and have a 12-month window during which they may choose to transfer to the PERS-DCRP or remain in the

PERS-DBRP by filing an irrevocable election. If an election is not filed, the member remains in the PERS-DBRP. Members may not be members of both the defined contribution and defined benefit retirement plans. The PERS-DCRP provides retirement, disability, and death benefits to plan members and their beneficiaries.

A brief summary of eligibility and benefits follows.

PERS-DCRP Summary of benefits

Eligibility for benefits

- Termination of Service

Vesting

- Immediate for participant's contributions and attributable income;
- 5 years of membership service for the employer's contributions to individual accounts and attributable income.

Benefit

- Depends upon eligibility and individual account balance;
- Various payout options are available, including: taxable lump sums, periodic payments per participant direction and IRS-permitted rollovers.

Contributions: Member and employer contribution rates are established by state law and may be amended only by the Legislature.

Member contributions are deducted from each member's salary and remitted by participating employers. The entire amount of the member's contribution is credited to the individual account and maintained by the record keeper.

The 7.9% member contributions will be decreased to 6.9% on January 1 following actuary valuation results for the PERS-DBRP that show the amortization period has dropped below 25 years and would remain below 25 years following the reduction of both the additional employer and additional member contribution rates. There is no reduction to the member contributions on January 1, 2019.

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(Reference Schedule of Contribution Rates on page 92).

The total employer rate of 8.57% is allocated as follows: 8.23% to the member's retirement account, 0.04% to the defined contribution education fund, 0.3% to the long term disability plan.

PERS employer contributions temporarily increased 1.0%, effective July 1, 2013.

Beginning July 1, 2014, employer contributions increase an additional 0.1% a year over 10 years, through 2024. The employer additional contributions, including the 0.27% added in 2007 and 2009, terminate on January 1 following actuary valuation results that show the amortization period of the PERS-DBRP has dropped below 25 years and would remain below 25 years following the reduction of both the additional employer and member contribution rates. Based on the June 30, 2018 actuarial valuation, the additional contributions will not be terminated on January 1, 2019.

Contribution Rates as a % of Covered Payroll	
<i>Fiscal year ended June 30, 2018</i>	
Member	7.90%
State & University Employer	8.57%
Local Government Employer	8.47%
School District Employer	8.20%
State for Local Governments	0.10%
State for School Districts	0.37%

PERS-DCRP PARTICIPATING EMPLOYERS		
<u>Employers</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
State Agencies	32	32
Counties	53	53
Cities and Towns	58	55
Universities	5	5
School Districts	117	107
High Schools	4	4
Other Agencies	47	44
Total	316	300

PERS-DCRP Active Membership by Employer Type		
<u>Employer Type</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
State Agencies	1,296	1,254
Counties	416	383
Cities	320	289
Universities	143	138
High Schools	5	5
School Districts	301	274
Other Agencies	209	198
Total	2,690	2,541

Plan Membership Elections: The financial statements will reflect employer and employee contribution transfers of DCRP participants that filed elections at or near the June 30 cutoff date. The contributions will not be moved until early fiscal year 2019. At fiscal year end June 30, 2018, there were ongoing transfers of \$393.4 thousand.

DCRP Education Fund: The DCRP Education Fund (DCEd), as governed by section 19-3-112, MCA, was established to provide funding for the required education programs for members who have joined the PERS-DCRP. The DCEd was funded by 0.04% of the employers' contributions in fiscal year 2018.

DCRP Disability Fund: The DCRP Disability Fund (DC Disability), as governed by section 19-3-2117, MCA, provides disability benefits to eligible members who elect the PERS-DCRP. The DCRP Disability Fund received 0.3% of the employers' contribution in fiscal year 2018. The DC Disability OPEB is reported on the financial statements under the column heading *PERS-DCRP Disability OPEB*.

Participants of the PERS-DCRP direct their contributions and their portion of employer's contributions among the offered investment options. Participants may invest in any or all of the offered options and transfer between options on a daily basis, if desired. The

investment options offered are selected by the PERB in compliance with the PERS-DCRP Investment Policy Statement, the advice of an independent investment consultant, and assistance from the statutorily-created Employee Investment Advisory Council.

The offered investment options fall into two primary types: (1) the variable investment options and (2) the fixed investment option.

Variable investments: The variable investment options include a variety of Large, Mid and Small Cap mutual funds, as well as a fixed income bond fund and Target Date Retirement Funds. Options range from conservative to aggressive. The mutual funds cover all standard asset classes and categories. The investment options as of June 30, 2018 are as follows.

PERS-DCRP Investment Options

International Stock Funds

American Funds New Perspective R6
Oakmark International I
Vanguard Total International Stock
Index Adm
Oppenheimer Developing Markets Y

Small Company Stock Funds

Vanguard Small Cap Growth Index Instl
Vanguard Small Cap Index Signal Instl
PGIM QMA Small-Cap Value Z

Mid-Sized Company Stock Funds

Janus Henderson Enterprise - N
MFS Mid-Cap Value
Vanguard Mid Cap Index - Adm

Large Company Stock Funds

Alger Capital Appreciation Z
Black Rock Equity Index - Collective F
Vanguard Equity Income - Adm
JP Morgan US Equity R5

Balanced Funds

Vanguard Balanced Index - I

Bond Funds

PGIM Total Return Bond R6
Neuberger Berman High Income Bond - 1
Vanguard Total Bond Market Index - Adm

Target Date Funds

T. Rowe Price Retirement - Balanced
and 2005 through 2055

Fixed Investment Options

Montana Fixed Fund

Fixed Investment: Montana Fixed Fund.

The Montana Fixed Fund is a stable value investment option, administered through outside vendors: investment manager, Pacific Investment Management Company LLC (PIMCO); custodial bank, State Street Bank and Trust Company (State Street); and third-party synthetic Guaranteed Interest Contract (GIC) providers, Transamerica Life Insurance Company (Transamerica), Prudential Insurance Company of America (Prudential), and Voya Retirement Insurance & Annuity Company (Voya). When participants invest in the Montana Fixed Fund option, they are guaranteed a fixed rate of return, which may be adjusted in accordance with the terms of the respective GIC provider contracts. The Montana Fixed Fund employs a synthetic stable value strategy where the investment manager, PIMCO, manages a diversified bond portfolio and third party insurers, Transamerica, Prudential, and Voya, guarantee the participants' principal investments and earnings in accordance with the respective contracts with the GIC providers. The third party insurers set a fixed quarterly rate of return based on the investment manager's portfolio market value performance, yield, and duration in accordance with the terms of the respective contracts with the GIC providers.

FINANCIAL SECTION

All money invested in the Montana Fixed Fund of the PERS-DCRP and Deferred Compensation Plan are held in a Pooled Trust. The Pooled Trust qualifies as a group trust under sections 401(a), including section 401(a)(24) and 501(a), of the IRC of 1986, as amended. Under the Pooled Trust agreement, the third party GIC providers provide a guarantee of principal and set a fixed quarterly crediting rate. The Pooled Trust assets are invested by PIMCO and are held under a custodial agreement with State Street. The Pooled Trust assets are invested by PIMCO based on an investment guideline schedule as agreed upon in the Pooled Trust Contract and approved by the PERB, PIMCO, and the GIC providers.

Administrative expenses and revenues are accounted for within the plan. Expenses for the DCRP can generally be classified as 1) administrative, including miscellaneous or 2) investment management. Following is a summary of revenues and expenses.

Administrative funding: The PERB's administrative fee is a basis point (or percent) fee charged on participants' account balances. On a quarterly basis, the recordkeeper, Empower™ Retirement, withholds the fee from each plan participant's account. Empower™ Retirement withholds a portion of the fee collected from the participant to pay their recordkeeping fee and submits the remainder to the PERB. The PERB records this as *Miscellaneous Revenue* in the financial statements.

Deferred Compensation Plan (457)

Plan Description: The Deferred Compensation (457) Plan is a voluntary supplemental retirement savings plan established in 1974. The Deferred Compensation Plan is governed by Title 19, chapter 50, MCA, in accordance with Internal

Recordkeeping fees: The recordkeeper, Empower™ Retirement, charges a set administrative fee to the PERB for all plan participants. These amounts are recorded as *Miscellaneous Expense* in the financial statements.

Montana Fixed Fund fees: The Montana Fixed Fund's crediting rate is declared net of expenses. Fees on the fund are charged by each of the five providers, PIMCO, State Street, Transamerica, Prudential, and Voya. The fees are defined under each contract for specific services. The fees charged by PIMCO and State Street for the externally managed fixed investments are classified as *Investment Expense*. The fees charged by Transamerica, Prudential and Voya are classified as *Miscellaneous Expense*.

Mutual funds/variable investments fees: The variable investments have investment management fees and some may have additional administrative fees. These fees are not presented in the financial statements. Mutual fund earnings are declared net of expenses, both investment management and administrative expenses, in accordance with the Securities and Exchange Commission and other regulatory authorities. Current reporting standards for mutual fund companies do not require costs be made available in the detailed cost reports.

Revenue Code (IRC) §457. This plan is available to all employees of the State, Montana University System, and contracting political subdivisions.

Assets of the Deferred Compensation Plan are required to be held in trusts, custodial accounts or insurance company contracts for the exclusive benefit of participants and their beneficiaries. Empower™ Retirement is the recordkeeper for the plan. Participants elect to defer a portion of their salary, within IRC limits. The deferred salary is not available to

employees until separation from service, retirement, death, or upon an unforeseeable emergency while still employed, provided IRS-specified criteria are met.

A brief summary of eligibility and benefits follows.

Deferred Compensation Plan Summary

Contribution

- Voluntary, pre-tax deferral or designated Roth contribution

Eligibility for benefit

- Not available to participant until separation from service, retirement, death, or upon an unforeseeable emergency while still employed, provided IRS-specified criteria are met.

Vesting

- Participants are fully vested in their accounts immediately.

Benefit

- Lump sum or periodic benefit payment, at the option of the participant. Based on individual account balances and plan provisions. IRS permitted rollovers are also possible.

DEFERRED COMPENSATION PARTICIPATING EMPLOYERS		
<u>Employers</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
State of Montana*	1	1
Counties	4	4
Colleges and Universities	5	5
School Districts	15	13
Cities	14	10
Other Agencies	<u>15</u>	<u>13</u>
Total	54	46

*The State of Montana includes 34 agencies; however, due to the nature of the reporting for the 457 plan we are unable to specifically determine which agencies have participating employees.

Contributions: The Deferred Compensation Plan is a voluntary retirement plan designed to supplement retirement savings. Participants designate the amount to contribute within IRC limitations.

Plan participants direct their deferred salary among the offered investment options. The investment options offered are selected by the

PERB in compliance with the Deferred Compensation Plan's Investment Policy Statement, the advice of an independent investment analyst, and the statutorily-created Employee Investment Advisory Council. Participants may invest in any or all of the offered options and transfer between options on a daily basis, if desired.

FINANCIAL SECTION

The offered investment options fall into two primary types: (1) the variable investment options and (2) the fixed investment option.

Variable investments: The variable investment options include a variety of Large, Mid and Small Cap mutual funds, as well as a fixed income bond fund and Target Date Retirement funds. Options range from aggressive to conservative. The mutual funds cover all standard asset classes and categories. The investment options as of June 30, 2018 are as follows.

Deferred Compensation (457) Plan Investment Options

International Stock Funds

Vanguard Total Intl Stock Index - Adm
Artisan International Inv
Franklin Mutual Global Discovery Z
Dodge & Cox International Stock
American Funds New Perspective R6
Oppenheimer Developing Markets Y

Small Company Stock Funds

Vanguard Small Cap Growth Index Instl
Vanguard Small Cap Index Instl
Neuberger Berman Genesis-Trust

Mid Cap Company Stock Funds

Janus Henderson Enterprise - N
Vanguard Mid Cap Index Adm
MFS Mid Cap Value R6

Large Cap Stock Funds

Vanguard Equity Income Adm
Fidelity Contrafund
Vanguard Institutional Index I
Parnassus Core Equity Inst

Balanced Funds

Vanguard Balanced Index I

Bond Funds

Vanguard Total Bond Market Index - Adm
Neuberger Berman High Income Bond Inv

PGIM Total Return Bond R6

Target Date Funds

T. Rowe Price Retirement - Balanced
and 2005 through 2055

Fixed Investment Options

Montana Fixed Fund

In addition to the investments listed, plan participants previously had the option to direct a portion of their deferrals to a term life insurance policy provided through Allianz Life Insurance. The ability to invest in life insurance is allowed under the IRC and was offered to plan participants prior to life insurance being offered as a standard component of health insurance benefit packages. This investment option has been discontinued; however, plan participants who had previously elected this option may continue.

Fixed Investment: Montana Fixed Fund.

The Montana Fixed Fund is a stable value investment option, administered through outside vendors: investment manager, Pacific Investment Management Company LLC (PIMCO); custodial bank, State Street Bank and Trust Company (State Street); and third-party synthetic Guaranteed Interest Contract (GIC) providers, Transamerica Life Insurance Company (Transamerica), Prudential Insurance Company of America (Prudential), and Voya Retirement Insurance & Annuity Company (Voya). When participants invest in the Montana Fixed Fund option, they are guaranteed a fixed rate of return, which may be adjusted in accordance with the terms of the respective GIC provider. The Montana Fixed Fund employs a synthetic stable value strategy where the investment manager, PIMCO, manages a diversified bond portfolio and third party insurers, Transamerica, Prudential, and Voya, guarantee the participants' principal investments and earnings in accordance with the respective contract with the GIC provider.

The third party insurers set a fixed quarterly rate of return based on the investment manager's portfolio market value performance, yield, and duration in accordance with the terms of the respective contract with the GIC provider.

All money invested in the Montana Fixed Fund of the PERS-DCRP and Deferred Compensation Plan are held in a Pooled Trust. The Pooled Trust qualifies as a group trust under sections 401(a), including section 401(a) (24) and 501(a), of the IRC of 1986, as amended. Under the Pooled Trust agreement, the third party GIC providers provide a guarantee of principal and set a fixed quarterly crediting rate. The Pooled Trust assets are invested by PIMCO and are held under a custodial agreement with State Street. The Pooled Trust assets are invested by PIMCO based on an investment guideline schedule as agreed upon in the Pooled Trust Contract and approved by the PERB, PIMCO, and the GIC providers.

Administrative expenses and revenues are accounted for within the plan. Expenses for the Deferred Compensation Plan can generally be classified as 1) administrative, including miscellaneous or 2) investment management.

Following is a summary of all revenues and expenses.

Administrative funding: The PERB's administrative fee is a basis point (or percent) fee based on account balances. On a quarterly basis, the recordkeeper, Empower™ Retirement, withholds the fee from each plan participant's account. Empower™ Retirement withholds a portion of the fee collected from the participants to pay their recordkeeping fee and submits the remainder to the PERB. The PERB records this as *Miscellaneous Revenue* in the financial statements.

Recordkeeping fees: The recordkeeper, Empower™ Retirement, charges a set administrative fee to the PERB for all plan participants. These amounts are recorded as *Miscellaneous Expense* in the financial statements.

Montana Fixed Fund fees: The Montana Fixed Fund's crediting rate is declared net of expenses. Fees on the fund are charged by each of the five providers, PIMCO, State Street, Transamerica, Prudential, and Voya. The fees are defined under each contract for specific services. The fees charged by PIMCO and State Street for the externally managed fixed investments are classified as *Investment Expense*. The fees charged by Transamerica, Prudential, and Voya are classified as *Miscellaneous Expense*.

Mutual fund/variable investments fee: The variable investments have investment management fees and some may have additional administrative fees. These fees are not presented on the financial statements. Mutual fund earnings are declared net of both investment management and administrative expenses, in accordance with the Securities Exchange Commission and other regulatory authorities. Current reporting standards for mutual fund companies do not require costs be made available in the detailed cost reports.

FINANCIAL SECTION

FY 2018 Schedule of Contribution Rates			
System	Member	Employer	State
PERS-DBRP¹	7.9% [19-3-315(1)(a), MCA]	8.57% State & University 8.47% Local Governments 8.2% School Districts (K-12) [19-3-316, MCA]	0.1% of Local Government payroll – paid from the General Fund 0.37% School Districts (K-12) payroll – paid from the General Fund [19-3-319, MCA]
PERS-DCRP¹	7.9% [19-3-315(1)(a), MCA]	8.57% State & University 8.47% Local Governments 8.2% School Districts (K-12) [19-3-316, MCA]	0.1% of Local government payroll – paid from the General Fund 0.37% School Districts (K-12) payroll – paid from the General Fund [19-3-319, MCA]
PERS-DCRP Disability OPEB		0.3% - an allocation of the DCRP employer contribution [19-3-2117, MCA]	
JRS²	7.0% [19-5-402, MCA]	25.81% [19-5-404, MCA]	
HPORS	13.0% - hired prior to 7/01/97 & not electing GABA 13.05% - hired after 6/30/97 & members electing GABA [19-6-402, MCA]	28.15% [19-6-404(1), MCA]	10.18% of salaries – paid from the General Fund [19-6-404(2), MCA]
SRS	10.495% [19-7-403, MCA]	13.115% [19-7-404, MCA]	
GWPORS	10.56% [19-8-502, MCA]	9.0% [19-8-504, MCA]	
MPORS	7.0% - hired after 6/30/75 & prior to 7/1/79 & not electing GABA [19-9-710(1)(a), MCA] 8.5% - hired after 6/30/79 and prior to 7/1/97 & not electing GABA [19-9-710(1)(b), MCA] 9.0% - hired after 6/30/97 & members electing GABA [19-9-710(1)(c), MCA & 19-9-710(2), MCA]	14.41% [19-9-703, MCA]	29.37% of salaries – paid from the General Fund [19-9-702, MCA]
FURS	9.5% - hired prior to 7/1/97 & not electing GABA [19-13-601(2)(a), MCA] 10.7% - hired after 06/30/97 & members electing GABA [19-13-601(2)(b), MCA]	14.36% [19-13-605, MCA]	32.61% of salaries – paid from the General Fund [19-13-604, MCA]
VFCA			5.0% of fire insurance premium tax, paid from the General Fund [19-17-301, MCA]

¹The employer and/or member contribution rates increase on July 1, 2018 for PERS-DBRS and PERS-DCRP.

²The employer contributions have been temporarily suspended for JRS beginning the first full pay period of January 2018 until after the last full pay period of June 2019, when the employer contributions will return to 25.18%.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Changes in Multiple-Employer Plans Net Pension Liability / (Asset)

as of June 30, 2018

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
PERS-DBRP					
Total pension liability					
Service cost (Beginning of year)	\$ 132,567,233	\$ 144,475,909	\$ 132,620,813	\$ 138,049,956	\$ 137,452,701
Interest (includes interest on service cost)	552,036,737	507,380,846	486,830,869	476,777,225	456,406,491
Changes of benefit terms					
Differences between expected and actual experience	170,344,495	55,782,342	12,254,313	(11,276,266)	
Changes of assumptions		354,960,213			
Benefit payments ²	(395,338,673)	(366,354,719)	(344,103,875)	(333,401,463)	(307,741,308)
Refunds of Contributions ³	(12,619,498)	(12,252,007)	(10,379,388)		
Net change in total pension liability	\$ 446,990,294	\$ 683,992,584	\$ 277,222,732	\$ 270,149,452	\$ 286,117,884
Total pension liability-beginning	7,420,145,583	6,736,152,999	6,458,930,267	6,188,780,815	5,902,662,931
Total pension liability-ending (a)	\$ 7,867,135,877	\$ 7,420,145,583	\$ 6,736,152,999	\$ 6,458,930,267	\$ 6,188,780,815
Plan fiduciary net position					
Contributions - employer ^{4,9}	\$ 106,650,985	\$ 103,537,059	\$ 102,327,838	\$ 100,175,856	\$ 95,820,397
Contributions - non-employer	34,659,174	28,757,463	30,800,371	34,466,719	34,561,721
Contributions - member ⁵	102,075,271	100,768,139	97,342,719	95,424,031	92,160,048
Net investment income ⁶	478,690,356	591,434,954	101,199,856	225,106,692	732,253,062
Benefit payments ²	(395,338,673)	(366,354,719)	(344,103,875)	(333,401,463)	(307,741,308)
Administrative expense	(4,168,771)	(4,472,084)	(3,858,330)	(3,483,531)	(3,522,346)
Refunds of Contributions ³	(12,619,498)	(12,252,007)	(10,379,388)		
Other ⁷	(2,474,018)	(1,706,733)	(1,580,302)		
Net change in plan fiduciary net position	\$ 307,474,826	\$ 439,712,072	\$ (28,251,111)	\$ 118,288,304	\$ 643,531,574
Plan fiduciary net position - beginning	5,472,519,182	5,032,807,110	5,061,058,221	4,942,769,917	4,299,238,343
Beginning of Year Adjustment					
Plan fiduciary net position - ending (b)^{6,9}	\$ 5,779,994,008	\$ 5,472,519,182	\$ 5,032,807,110	\$ 5,061,058,221	\$ 4,942,769,917
Net pension liability / (asset) - ending (a-b)	\$ 2,087,141,869	\$ 1,947,626,401	\$ 1,703,345,889	\$ 1,397,872,046	\$ 1,246,010,898
SRS					
Total pension liability					
Service cost (Beginning of year)	\$ 11,484,473	\$ 19,186,527	\$ 18,802,901	\$ 12,574,185	\$ 15,117,708
Interest (includes interest on service cost)	30,388,560	27,621,242	22,900,429	25,664,435	23,976,049
Changes of benefit terms		(1,494,604)			
Differences between expected and actual experience	4,714,268	(170,781)	749,213	(194,994)	
Changes of assumptions ⁸		(94,881,687)	56,788,521	43,058,238	(49,542,278)
Benefit payments ²	(18,052,544)	(16,700,117)	(15,476,437)	(15,280,070)	(13,943,335)
Refunds of Contributions ³	(1,490,014)	(1,383,061)	(1,028,890)		
Net change in total pension liability	\$ 27,044,743	\$ (67,822,481)	\$ 82,735,737	\$ 65,821,794	\$ (24,391,856)
Total pension liability-beginning	407,007,349	474,829,830	392,094,093	326,272,299	350,664,155
Total pension liability-ending (a)	\$ 434,052,092	\$ 407,007,349	\$ 474,829,830	\$ 392,094,093	\$ 326,272,299
Plan fiduciary net position					
Contributions - employer ⁴	\$ 10,366,141	\$ 7,562,105	\$ 7,316,674	\$ 6,902,448	\$ 6,689,311
Contributions - non-employer					
Contributions - member ⁵	8,469,282	7,188,857	6,982,217	6,623,175	6,447,179
Net investment income ⁶	29,157,838	35,511,246	6,063,591	13,041,786	41,789,437
Benefit payments ²	(18,052,544)	(16,700,117)	(15,476,437)	(15,280,070)	(13,943,335)
Administrative expense	(432,091)	(387,378)	(322,584)	(247,405)	(203,493)
Refunds of Contributions ³	(1,490,014)	(1,383,061)	(1,028,890)		
Other ⁷	(48,421)	(33,489)	(77,778)		
Net change in plan fiduciary net position	\$ 27,970,191	\$ 31,758,163	\$ 3,456,793	\$ 11,039,934	\$ 40,779,099
Plan fiduciary net position - beginning	330,910,169	299,152,006	295,695,213	284,655,279	243,876,180
Plan fiduciary net position - ending (b)⁶	\$ 358,880,360	\$ 330,910,169	\$ 299,152,006	\$ 295,695,213	\$ 284,655,279
Net pension liability / (asset) - ending (a-b)	\$ 75,171,732	\$ 76,097,180	\$ 175,677,824	\$ 96,398,880	\$ 41,617,020

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² For fiscal year 2016 forward, Benefit Payments are only benefit payments. In fiscal years 2014 and 2015 the benefit payments include refunds of contribution and transfers.

³ For fiscal year 2016 forward, the Refunds of Contributions includes Refunds and Distributions, Refunds to other plans and Transfers.

⁴ The Contributions - employer consists of the Employer, Membership Fees, Reduction in Force Program, and Miscellaneous Revenue.

⁵ The Contributions - member consists of the Plan Member and Interest Reserve Buyback.

⁶ The fiscal year 2017 Net Investment Income and Plan Fiduciary Net Position - ending are different in this schedule from what is presented in the financial statements due to late entries from Board of Investments.

⁷ Other consists of the expense for Other Post Employment Benefits (OPEB). For PERS it also includes Refunds to other plans, and Transfers to DCRP and MUS-RP.

⁸ The Changes in assumptions for SRS is the adjustment in the discount rate from 7.75% to 6.68% at June 30, 2015 and to 5.93% at June 30, 2016.

⁹ The PERS-DBRP amounts will not tie to the financial statements due to the exclusion of the PERS-DB Education (DB Ed) amount on this schedule.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Changes in Multiple-Employer Plans Net Pension Liability / (Asset)

as of June 30, 2018

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
GWPORS					
Total pension liability					
Service cost (Beginning of year)	\$ 8,097,630	\$ 8,624,297	\$ 8,403,076	\$ 8,008,155	\$ 7,849,828
Interest (includes interest on service cost)	16,018,113	14,268,596	12,910,129	12,398,209	11,258,354
Changes of benefit terms					
Differences between expected and actual experience	4,780,923	3,742,704	2,705,238	730,818	
Changes of assumptions		5,877,594			
Benefit payments	(6,522,921)	(5,809,910)	(5,068,318)	(5,351,847)	(5,229,489)
Refunds of Contributions	(1,105,281)	(1,035,917)	(1,065,541)		
Net change in total pension liability	\$ 21,268,464	\$ 25,667,364	\$ 17,884,584	\$ 15,785,335	\$ 13,878,693
Total pension liability / (asset) - beginning	213,201,194	187,533,830	169,649,246	153,863,911	139,985,218
Total pension liability / (asset) - ending (a)	\$ 234,469,658	\$ 213,201,194	\$ 187,533,830	\$ 169,649,246	\$ 153,863,911
Plan fiduciary net position					
Contributions - employer ⁴	\$ 4,613,066	\$ 4,463,631	\$ 4,278,385	\$ 4,088,117	\$ 3,762,217
Contributions - non-employer					
Contributions - member ⁵	5,512,148	5,278,141	5,035,648	4,924,265	4,461,889
Net investment income ⁶	15,573,117	18,589,670	3,166,704	6,434,871	20,069,398
Benefit payments ²	(6,522,921)	(5,809,910)	(5,068,318)	(5,351,847)	(5,229,489)
Administrative expense	(369,184)	(328,699)	(269,496)	(200,745)	(161,663)
Refunds of Contributions ³	(1,105,281)	(1,035,917)	(1,065,541)		
Other ⁷	(19,293)	(549)	(30,640)		
Net change in plan fiduciary net position	\$ 17,681,652	\$ 21,156,367	\$ 6,046,742	\$ 9,894,661	\$ 22,902,352
Plan fiduciary net position - beginning	175,840,876	154,684,509	148,637,767	138,743,106	115,840,754
Plan fiduciary net position - ending (b)	\$ 193,522,528	\$ 175,840,876	\$ 154,684,509	\$ 148,637,767	\$ 138,743,106
Net pension liability / (asset) - ending (a-b)	\$ 40,947,130	\$ 37,360,318	\$ 32,849,321	\$ 21,011,479	\$ 15,120,805
MPORS					
Total pension liability					
Service cost (Beginning of year)	\$ 12,248,910	\$ 12,267,430	\$ 12,022,841	\$ 12,083,166	\$ 11,794,994
Interest (includes interest on service cost)	41,949,138	39,632,065	37,887,975	36,830,426	35,011,854
Changes of benefit terms					
Differences between expected and actual experience	640,064	(5,057,920)	(3,546,948)	(2,014,310)	
Changes of assumptions		16,011,685			
Benefit payments ²	(24,566,646)	(23,474,602)	(21,960,690)	(22,743,995)	(20,527,874)
Refunds of Contributions ³	(2,675,247)	(1,043,487)	(1,240,208)		
Net change in total pension liability	\$ 27,596,219	\$ 38,335,171	\$ 23,162,970	\$ 24,155,287	\$ 26,278,974
Total pension liability / (asset) - beginning	561,975,691	523,640,520	500,477,550	476,322,263	450,043,289
Total pension liability / (asset) - ending (a)	\$ 589,571,910	\$ 561,975,691	\$ 523,640,520	\$ 500,477,550	\$ 476,322,263
Plan fiduciary net position					
Contributions - employer ⁴	\$ 7,757,950	\$ 7,091,246	\$ 6,927,587	\$ 6,629,915	\$ 6,459,488
Contributions - non-employer	15,840,158	13,960,572	13,751,561	13,432,838	13,048,938
Contributions - member ⁵	5,046,352	4,465,630	4,384,573	4,291,826	4,133,021
Net investment income ⁶	33,237,702	39,775,778	7,112,851	14,471,898	45,230,427
Benefit payments ²	(24,566,646)	(23,474,602)	(21,960,690)	(22,743,995)	(20,527,874)
Administrative expense	(350,328)	(339,344)	(273,951)	(212,017)	(166,807)
Refunds of Contributions ³	(2,675,247)	(1,043,487)	(1,240,208)		
Other ⁷	(37,861)	(491)	(131,634)		
Net change in plan fiduciary net position	\$ 34,252,080	\$ 40,435,302	\$ 8,570,089	\$ 15,870,465	\$ 48,177,193
Plan fiduciary net position - beginning	384,062,216	343,626,914	335,056,825	319,186,360	271,009,167
Plan fiduciary net position - ending (b)⁶	\$ 418,314,296	\$ 384,062,216	\$ 343,626,914	\$ 335,056,825	\$ 319,186,360
Net pension liability / (asset) - ending (a-b)	\$ 171,257,614	\$ 177,913,475	\$ 180,013,606	\$ 165,420,725	\$ 157,135,903

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² For fiscal year 2016, Benefit Payments are only benefit payments. In fiscal years 2014 and 2015, the benefit payments include refunds of contributions and transfers.

³ For fiscal year 2016, the Refunds of Contributions includes Refunds and Distributions, Refunds to other plans and transfers.

⁴ The Contributions - employer consists of the Employer, Membership Fees, Reduction in Force Program, and Miscellaneous Revenue.

⁵ The Contributions - member consists of the Plan Member and Interest Reserve Buyback.

⁶ The fiscal year 2017 Net Investment Income and Plan Fiduciary Net Position - ending are different in this schedule from what is presented in the FY17 financial statements due to late entries from Board of Investments.

⁷ Other consists of the expense for Other Post Employment Benefits (OPEB)

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Changes in Multiple-Employer Plans Net Pension Liability / (Asset)

as of June 30, 2018

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
FURS					
Total pension liability					
Service cost (Beginning of year)	\$ 11,819,193	\$ 12,162,734	\$ 11,519,465	\$ 11,066,391	\$ 10,608,895
Interest (includes interest on service cost)	37,983,963	35,230,726	33,514,243	32,580,262	30,847,306
Changes of benefit terms					
Differences between expected and actual experience	14,798,655	893,628	(1,162,342)	(159,885)	
Changes of assumptions		16,915,553			
Benefit payments ²	(23,863,193)	(22,335,636)	(20,896,200)	(19,747,008)	(19,052,130)
Refunds of Contributions ³	(173,278)	(168,422)	(46,128)		
Net change in total pension liability	\$ 40,565,340	\$ 42,698,583	\$ 22,929,038	\$ 23,739,760	\$ 22,404,071
Total pension liability / (asset) - beginning	508,540,629	465,842,046	442,913,008	419,173,248	396,769,177
Total pension liability / (asset) - ending (a)	\$ 549,105,969	\$ 508,540,629	\$ 465,842,046	\$ 442,913,008	\$ 419,173,248
Plan fiduciary net position					
Contributions - employer ⁴	\$ 7,053,165	\$ 6,499,776	\$ 6,163,464	\$ 6,100,252	\$ 6,006,863
Contributions - non-employer	16,127,433	14,438,412	13,969,719	13,572,990	12,767,624
Contributions - member ⁵	5,314,833	4,925,425	4,751,806	4,710,082	4,697,333
Net investment income ⁶	34,284,721	40,838,569	7,311,946	14,640,156	45,464,858
Benefit payments ²	(23,863,193)	(22,335,636)	(20,896,200)	(19,747,008)	(19,052,130)
Administrative expense	(329,234)	(320,213)	(259,560)	(197,110)	(153,622)
Refunds of Contributions ³	(173,278)	(168,422)	(46,128)		
Other ⁷	13,978	(485)	(2,424)		
Net change in plan fiduciary net position	\$ 38,428,425	\$ 43,877,426	\$ 10,992,623	\$ 19,079,362	\$ 49,730,926
Plan fiduciary net position - beginning	395,506,080	351,628,654	340,636,031	321,556,669	271,825,743
Plan fiduciary net position - ending (b) ⁶	\$ 433,934,505	\$ 395,506,080	\$ 351,628,654	\$ 340,636,031	\$ 321,556,669
Net pension liability / (asset) - ending (a-b)	\$ 115,171,464	\$ 113,034,549	\$ 114,213,392	\$ 102,276,977	\$ 97,616,579
VFCA					
Total pension liability					
Service cost (Beginning of year)	\$ 92,294	\$ 267,843	\$ 282,498	\$ 221,969	\$ 237,639
Interest (includes interest on service cost)	3,461,285	3,336,579	3,355,483	2,851,618	2,843,095
Changes of benefit terms				6,173,245	
Differences between expected and actual experience	(930,963)	(791,792)	(1,141,179)	(618,854)	
Changes of assumptions		2,281,533			
Benefit payments ²	(2,944,046)	(2,858,443)	(2,623,011)	(2,379,353)	(2,294,676)
Refunds of Contributions ³					
Net change in total pension liability	\$ (321,430)	\$ 2,235,720	\$ (126,209)	\$ 6,248,625	\$ 786,058
Total pension liability / (asset) - beginning	46,717,576	44,481,856	44,608,065	38,359,440	37,573,382
Total pension liability / (asset) - ending (a)	\$ 46,396,146	\$ 46,717,576	\$ 44,481,856	\$ 44,608,065	\$ 38,359,440
Plan fiduciary net position					
Contributions - employer ⁴					
Contributions - non-employer	\$ 2,212,113	\$ 2,064,561	\$ 2,036,297	\$ 1,913,482	\$ 1,818,237
Contributions - member ⁵					
Net investment income ⁶	3,126,746	3,836,835	622,331	1,479,954	4,815,491
Benefit payments ²	(2,944,046)	(2,858,443)	(2,623,011)	(2,379,353)	(2,294,676)
Administrative expense	(293,142)	(288,897)	(241,726)	(180,466)	(136,079)
Refunds of Contributions ³					
Other ⁷	(2,478)	(6,897)	(14,436)		
Net change in plan fiduciary net position	\$ 2,099,193	\$ 2,747,159	\$ (220,545)	\$ 833,617	\$ 4,202,973
Plan fiduciary net position - beginning	36,630,432	33,883,273	34,103,818	33,270,201	29,067,228
Plan fiduciary net position - ending (b) ⁶	\$ 38,729,625	\$ 36,630,432	\$ 33,883,273	\$ 34,103,818	\$ 33,270,201
Net pension liability / (asset) - ending (a-b)	\$ 7,666,521	\$ 10,087,144	\$ 10,598,583	\$ 10,504,247	\$ 5,089,239

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² For fiscal year 2016, Benefit Payments are only benefit payments. In fiscal years 2014 and 2015, the benefit payments include refunds of contribution and transfers.

³ For fiscal year 2016, the Refunds of Contributions includes Refunds and Distributions, Refunds to other plans and Transfers. Refunds are not applicable to VFCA.

⁴ The Contributions - employer consists of the Employer, Membership Fees, Reduction in Force Program, and Miscellaneous Revenue.

⁵ The Contributions - member consists of the Plan Member and Interest Reserve Buyback.

⁶ The fiscal year 2017 Net Investment Income and Plan Fiduciary Net Position - ending are different in this schedule from what is presented in the FY17 financial statements due to late entries from Board of Investments.

⁷ Other consists of the expense for Other Post Employment Benefits (OPEB).

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Changes in Single-Employer Plans Net Pension Liability / (Asset)

as of June 30, 2018

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
JRS					
Total pension liability					
Service Cost - Beginning of year	\$ 1,664,039	\$ 1,628,290	\$ 1,578,705	\$ 1,652,926	\$ 1,593,854
Interest (includes interest on service cost)	4,502,928	4,043,662	3,986,420	3,933,947	3,824,389
Changes of benefit terms					
Differences between expected and actual experience	(2,900,423)	862,189	(1,341,333)	(1,032,091)	
Changes of assumptions		3,864,700			
Benefit payments ²	(3,872,322)	(3,554,335)	(3,416,023)	(3,040,988)	(3,022,512)
Net change in total pension liability	\$ (605,778)	\$ 6,844,506	\$ 807,769	\$ 1,513,794	\$ 2,395,731
Total pension liability / (asset) - beginning	60,797,964	53,953,458	53,145,689	51,631,895	49,236,164
Total pension liability / (asset) - ending (a)	\$ 60,192,186	\$ 60,797,964	\$ 53,953,458	\$ 53,145,689	\$ 51,631,895
Plan fiduciary net position					
Contributions - employer ³	\$ 1,084,880	\$ 1,800,105	\$ 1,807,493	\$ 1,683,990	\$ 1,651,483
Contributions - non-employer					
Contributions - member ⁵	575,050	488,208	729,180	534,091	481,461
Net investment income ⁸	8,467,204	10,368,402	1,778,748	3,842,387	12,420,597
Benefit payments ²	(3,872,322)	(3,554,335)	(3,416,023)	(3,040,988)	(3,022,512)
Administrative expense	(264,496)	(253,789)	(197,445)	(135,815)	(100,567)
Other ³	6,737	(674)	(2,742)		
Net change in plan fiduciary net position	\$ 5,997,053	\$ 8,847,917	\$ 699,211	\$ 2,883,665	\$ 11,430,462
Plan fiduciary net position - beginning	96,653,635	87,805,718	87,106,507	84,222,842	72,792,380
Plan fiduciary net position - ending (b) ⁸	\$ 102,650,688	\$ 96,653,635	\$ 87,805,718	\$ 87,106,507	\$ 84,222,842
Net pension liability / (asset) - ending (a-b)	\$ (42,458,502)	\$ (35,855,671)	\$ (33,852,260)	\$ (33,960,818)	\$ (32,590,947)
HPORS					
Total pension liability					
Service Cost - Beginning of year	\$ 3,643,015	\$ 3,664,857	\$ 3,798,553	\$ 3,598,464	\$ 3,464,399
Interest (includes interest on service cost)	16,293,615	15,121,088	14,545,022	14,112,116	13,517,924
Changes of benefit terms ⁴				1,855,618	
Differences between expected and actual experience	589,270	2,773,680	18,339	267,336	
Changes of assumptions		7,892,479			
Benefit payments ²	(11,545,732)	(11,036,794)	(10,482,414)	(10,000,856)	(9,443,007)
Refund of Contributions ⁵	(321,840)	(244,597)	(93,811)		
Net change in total pension liability	\$ 8,658,328	\$ 18,170,713	\$ 7,785,689	\$ 9,832,678	\$ 7,539,316
Total pension liability / (asset) - beginning	218,922,225	200,751,512	192,965,823	183,133,145	175,593,829
Total pension liability / (asset) - ending (a)	\$ 227,580,553	\$ 218,922,225	\$ 200,751,512	\$ 192,965,823	\$ 183,133,145
Plan fiduciary net position					
Contributions - employer ⁶	\$ 5,858,493	\$ 5,782,258	\$ 5,915,644	\$ 5,839,336	\$ 5,735,507
Contributions - non-employer ⁶	250,150	262,884	242,749		
Contributions - member ⁷	2,386,526	1,949,795	1,917,487	1,624,327	1,458,042
Net investment income ⁸	12,282,824	15,098,813	2,605,256	5,738,373	18,678,284
Benefit payments ²	(11,545,732)	(11,036,794)	(10,482,414)	(10,000,856)	(9,443,007)
Administrative expense	(256,309)	(248,124)	(197,034)	(144,253)	(109,140)
Refund of Contributions ⁵	(321,840)	(244,597)	(93,811)		
Other ³	8,067	(466)	(2,276)		
Net change in plan fiduciary net position	\$ 8,662,179	\$ 11,563,769	\$ (94,399)	\$ 3,056,927	\$ 16,319,686
Plan fiduciary net position - beginning	140,536,689	128,972,920	129,067,319	126,010,392	109,690,706
Plan fiduciary net position - ending (b) ⁸	\$ 149,198,868	\$ 140,536,689	\$ 128,972,920	\$ 129,067,319	\$ 126,010,392
Net pension liability / (asset) - ending (a-b)	\$ 78,381,685	\$ 78,385,536	\$ 71,778,592	\$ 63,898,504	\$ 57,122,753

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² For fiscal year 2016, Benefit Payments are only benefit payments. In fiscal years 2014 and 2015, the benefit payments include refunds of contributions and transfers.

³ Other consists of the expense for Other Post Employment Benefits (OPEB).

⁴ For fiscal year 2015, the HPORS Changes of benefit terms was the addition of the DROP.

⁵ For fiscal year 2016, the Refunds of Contributions includes refunds of member contributions.

⁶ The fiscal year 2014 and 2015, HPORS employer and non-employer contribution differences are due to considering all non-employer contributions as employer.

⁷ The HPORS Contributions - member consists of Plan Member and Interest Reserve Buyback on the financial statements.

⁸ The fiscal year 2017 Net Investment Income and Plan Fiduciary Net Position - ending are different in this schedule from what is presented in the financial statements due to late entries from Board of Investments

⁹ For fiscal year 2018 the JRS employer contributions decreased due to Senate Bill 1 temporarily suspending employer contributions.

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FINANCIAL SECTION

Public Employees' Retirement Board
A Component Unit of the State of Montana
Required Supplementary Information
Schedule of Net Pension Liability / (Asset) for Multiple-Employer Plans
as of June 30, 2018
 Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
PERS-DBRP					
Total Pension Liability	\$ 7,867,135,877	\$ 7,420,145,583	\$ 6,736,152,999	\$ 6,458,930,267	\$ 6,188,780,815
Plan Fiduciary Net Position ^{2,4}	5,779,994,008	5,472,519,182	5,032,807,110	5,061,058,221	4,942,769,917
Multiple-Employers' Net Pension Liability / (Asset)	<u>\$ 2,087,141,869</u>	<u>\$ 1,947,626,401</u>	<u>\$ 1,703,345,889</u>	<u>\$ 1,397,872,046</u>	<u>\$ 1,246,010,898</u>
Plan fiduciary net position as a percentage of the total pension liability	73.47%	73.75%	74.71%	78.36%	79.87%
Covered Payroll ³	\$ 1,230,105,350	\$ 1,232,066,537	\$ 1,185,646,179	\$ 1,154,866,605	\$ 1,120,266,025
Net pension liability / (asset) as a percentage of covered payroll ²	169.67%	158.08%	143.66%	121.04%	111.22%
SRS					
Total Pension Liability	\$ 434,052,092	\$ 407,007,349	\$ 474,829,830	\$ 392,094,093	\$ 326,272,299
Plan Fiduciary Net Position ²	358,880,360	330,910,169	299,152,006	295,695,213	284,655,279
Multiple-Employers' Net Pension Liability / (Asset)	<u>\$ 75,171,732</u>	<u>\$ 76,097,180</u>	<u>\$ 175,677,824</u>	<u>\$ 96,398,880</u>	<u>\$ 41,617,020</u>
Plan fiduciary net position as a percentage of the total pension liability	82.68%	81.30%	63.00%	75.41%	87.24%
Covered Payroll	\$ 77,587,294	\$ 74,581,258	\$ 70,593,304	\$ 68,045,517	\$ 64,672,635
Net pension liability / (asset) as a percentage of covered payroll	96.89%	102.03%	248.86%	141.67%	64.35%
GWPORS					
Total Pension Liability	\$ 234,469,658	\$ 213,201,194	\$ 187,533,830	\$ 169,649,246	\$ 153,863,911
Plan Fiduciary Net Position ²	193,522,528	175,840,876	154,684,509	148,637,767	138,743,106
Multiple-Employers' Net Pension Liability / (Asset)	<u>\$ 40,947,130</u>	<u>\$ 37,360,318</u>	<u>\$ 32,849,321</u>	<u>\$ 21,011,479</u>	<u>\$ 15,120,805</u>
Plan fiduciary net position as a percentage of the total pension liability	82.54%	82.48%	82.48%	87.61%	90.17%
Covered Payroll	\$ 50,823,150	\$ 49,381,004	\$ 47,108,310	\$ 44,884,739	\$ 41,636,566
Net pension liability / (asset) as a percentage of covered payroll	80.57%	75.66%	69.73%	46.81%	36.32%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² The fiscal year 2017 Plan Fiduciary Net Position is different in this schedule from what was presented in the FY17 Statement of Fiduciary Net Position due to late entries from Board of Investments.

³ The fiscal year 2014 covered payroll for PERS-DBRP has been re-stated due to the transfer of compensation from the PERS-DBRP to the PERS-DCRP. This also affected the dollar amount of the Actuarially Determined Contribution because it was determined as a percent of payroll.

⁴ The PERS-DBRP amounts will not tie to the financial statements due to the exclusion of the PERS-DB Education (DB Ed) amount on this schedule.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Required Supplementary Information
Schedule of Net Pension Liability / (Asset) for Multiple-Employer Plans
as of June 30, 2018
 Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
MPORS					
Total Pension Liability	\$ 589,571,910	\$ 561,975,691	\$ 523,640,520	\$ 500,477,550	\$ 476,322,263
Plan Fiduciary Net Position ²	418,314,296	384,062,216	343,626,914	335,056,825	319,186,360
Multiple-Employers' Net Pension Liability / (Asset)	\$ 171,257,614	\$ 177,913,475	\$ 180,013,606	\$ 165,420,725	\$ 157,135,903
Plan fiduciary net position as a percentage of the total pension liability	70.95%	68.34%	65.62%	66.95%	67.01%
Covered Payroll	\$ 52,035,958	\$ 48,603,580	\$ 47,233,801	\$ 45,736,127	\$ 44,426,617
Net pension liability / (asset) as a percentage of covered payroll	329.11%	366.05%	381.11%	361.69%	353.70%
FURS					
Total Pension Liability	\$ 549,105,969	\$ 508,540,629	\$ 465,842,046	\$ 442,913,008	\$ 419,173,248
Plan Fiduciary Net Position ²	433,934,505	395,506,080	351,628,654	340,636,031	321,556,669
Multiple-Employers' Net Pension Liability / (Asset)	\$ 115,171,464	\$ 113,034,549	\$ 114,213,392	\$ 102,276,977	\$ 97,616,579
Plan fiduciary net position as a percentage of the total pension liability	79.03%	77.77%	75.48%	76.91%	76.71%
Covered Payroll	\$ 47,934,517	\$ 45,208,091	\$ 43,118,925	\$ 41,627,233	\$ 39,891,869
Net pension liability / (asset) as a percentage of covered payroll	240.27%	250.03%	264.88%	245.70%	244.70%
VFCA					
Total Pension Liability	\$ 46,396,146	\$ 46,717,576	\$ 44,481,856	\$ 44,608,065	\$ 38,359,440
Plan Fiduciary Net Position ²	38,729,625	36,630,432	33,883,273	34,103,818	33,270,201
Multiple-Employers' Net Pension Liability / (Asset)	\$ 7,666,521	\$ 10,087,144	\$ 10,598,583	\$ 10,504,247	\$ 5,089,239
Plan fiduciary net position as a percentage of the total pension liability	83.48%	78.41%	76.17%	76.45%	86.73%
Covered Payroll	N/A	N/A	N/A	N/A	N/A
Net pension liability / (asset) as a percentage of covered payroll	N/A	N/A	N/A	N/A	N/A

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² The fiscal year 2017 Plan Fiduciary Net Position is different in this schedule from what was presented in the FY17 Statement of Fiduciary Net Position due to late entries from Board of Investments.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Net Pension Liability / (Asset) for Single-Employer Plans

as of June 30, 2018

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
JRS					
Total Pension Liability	\$ 60,192,186	\$ 60,797,964	\$ 53,953,458	\$ 53,145,689	\$ 51,631,895
Plan Fiduciary Net Position ²	102,650,688	96,653,635	87,805,718	87,106,507	84,222,842
Single-Employers' Net Pension Liability / (Asset)	<u>\$ (42,458,502)</u>	<u>\$ (35,855,671)</u>	<u>\$ (33,852,260)</u>	<u>\$ (33,960,818)</u>	<u>\$ (32,590,947)</u>
Plan fiduciary net position as a percentage of the total pension liability	170.54%	158.98%	162.74%	163.90%	163.12%
Covered Payroll	\$ 7,290,904	\$ 6,974,470	\$ 6,920,367	\$ 6,524,569	\$ 6,354,763
Net pension liability / (asset) as a percentage of covered payroll	-582.35%	-514.10%	-489.17%	-520.51%	-512.86%
HPORS					
Total Pension Liability	\$ 227,580,553	\$ 218,922,225	\$ 200,751,512	\$ 192,965,823	\$ 183,133,145
Plan Fiduciary Net Position ²	149,198,868	140,536,689	128,972,920	129,067,319	126,010,392
Single-Employers' Net Pension Liability / (Asset)	<u>\$ 78,381,685</u>	<u>\$ 78,385,536</u>	<u>\$ 71,778,592</u>	<u>\$ 63,898,504</u>	<u>\$ 57,122,753</u>
Plan fiduciary net position as a percentage of the total pension liability	65.56%	64.19%	64.25%	66.89%	68.81%
Covered Payroll	\$ 15,251,339	\$ 14,778,975	\$ 15,275,964	\$ 14,549,378	\$ 14,149,269
Net pension liability / (asset) as a percentage of covered payroll	513.93%	530.39%	469.88%	439.18%	403.72%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² The fiscal year 2017 Plan Fiduciary Net Position is different in this schedule from what was presented in the FY17 Statement of Fiduciary Net Position due to late entries from Board of Investments.

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FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Notes to the Required Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations for funding purposes at the dates indicated. Additional information as of latest actuarial valuation follows:

	PERS-DBRP	JRS	HPORS
Valuation date	June 30, 2018	June 30, 2018	June 30, 2018
Actuarial cost method	Entry Age	Entry Age	Entry Age
Amortization method	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open
Remaining amortization period in years:			
Unfunded Liability ¹	38		40
Unfunded Credit ²		0	
Asset valuation method	4-Year smoothed market	4-Year smoothed market	4-Year smoothed market
Actuarial assumptions:			
Investment rate of return compounded annually (net of investment expense)	7.65%	7.65%	7.65%
Projected salary increases			
General Wage Growth*	3.50%	3.50%	3.50%
Merit	0% - 4.8%	None	0% - 6.3%
*Includes inflation at	2.75%	2.75%	2.75%
Administrative Expenses as a Percentage of Payroll ³	0.26%	0.17%	0.27%
Benefit Adjustments			
GABA	3% if hired prior to July 1, 2007; or 1.5% if hired between July 1, 2007 and June 30, 2013; or 9% to 1.5% if hired on or after July 1, 2013; after 1 year	3% after 1 yr	3% after 2 year or 1.5% after 3 years if hired on or after July 1, 2013
Non-GABA	N/A	Biennial increase to salary of active member in like position	2% per yr service, not to exceed 5%, for probationary officer's base pay

¹ The unfunded actuarial liability in the PERS, HPORS and GWPORS do not amortize in 30 years.

² Assets are larger than the past service liability – creating an unfunded credit; the credit is amortized over future costs.

³ The administrative expenses are recognized by an additional amount added to the normal cost contribution rate for the System. This amount varies from year to year based on the prior year's actual administrative expenses.

FINANCIAL SECTION

SRS	GWPORS	MPORS	FURS	VFCA
June 30, 2018	June 30, 2018	June 30, 2018	June 30, 2018	June 30, 2018
Entry Age	Entry Age	Entry Age	Entry Age	Entry Age
Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level percentage of payroll, open	Level percent of inflation, open
21	72	20	10	5
				Based on Current Revenue
4-Year smoothed market	4-Year smoothed market	4-Year smoothed market	4-Year smoothed market	4-Year smoothed market
7.65%	7.65%	7.65%	7.65%	7.65%
3.50%	3.50%	3.50%	3.50%	N/A
0% - 6.3%	0% - 6.3%	0% - 6.6%	0% - 6.3%	N/A
2.75%	2.75%	2.75%	2.75%	N/A
0.23%	0.23%	0.23%	0.25%	\$70,586
3% or 1.5% for new hires on or after July 1, 2007, after 1 year	3% or 1.5% for new hires on or after July 1, 2007, after 1 year	3% after 1 yr	3% after 1 yr	N/A
N/A	N/A	50% newly confirmed officer	50% newly confirmed officer	N/A

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Employer and Non-Employer (State) Contributions for Cost-Sharing Multiple-Employer Plans

as of June 30, 2018

(in thousands)

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
PERS-DBRP					
Actuarially Determined Contribution	\$ 141,310	\$ 132,295	\$ 133,128	\$ 131,424	\$ 137,681
Contributions in Relation to the Actuarially Determined Contribution					
Employer Contributions ^{2, 4}	106,651	103,537	102,328	100,176	95,820
Non-Employer Contributions (State)	34,659	28,758	30,800	34,467	34,562
Total Contributions	\$ 141,310	\$ 132,295	\$ 133,128	\$ 134,643	\$ 130,382
Contribution Deficiency / (Excess)	\$ 0	\$ 0	\$ 0	\$ (3,219)	\$ 7,299
Covered Payroll ³	\$ 1,230,105	\$ 1,232,067	\$ 1,185,646	\$ 1,154,867	\$ 1,120,266
Contributions as a Percentage of Covered Payroll ³	11.49%	10.74%	11.23%	11.66%	11.64%
SRS					
Actuarially Determined Contribution	\$ 10,366	\$ 10,095	\$ 8,640	\$ 9,737	\$ 9,779
Contributions in Relation to the Actuarially Determined Contribution					
Employer Contributions ²	10,366	7,562	7,317	6,902	6,689
Non-Employer Contributions (State)					
Total Contributions	\$ 10,366	\$ 7,562	\$ 7,317	\$ 6,902	\$ 6,689
Contribution Deficiency / (Excess)	\$ 0	\$ 2,533	\$ 1,323	\$ 2,835	\$ 3,090
Covered Payroll	\$ 77,587	\$ 74,581	\$ 70,593	\$ 68,046	\$ 64,673
Contributions as a Percentage of Covered Payroll	13.36%	10.14%	10.36%	10.14%	10.34%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² Employer consists of the Employer, Membership Fees, Reduction in Force Program and Miscellaneous Revenue.

³ The fiscal year 2014 covered payroll of PERS-DBRP has been re-stated due to the transfer of compensation from the PERS-DBRP to the PERS-DCRP. This also affected the dollar amount of the Actuarially Determined Contribution (ADC) because it was determined as a percentage of payroll.

⁴ The PERS-DBRP amounts will not tie to the financial statements due to the exclusion of the PERS-DB Education (DB Ed) amount on this schedule.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Employer and Non-Employer (State) Contributions

for Cost-Sharing Multiple-Employer Plans

as of June 30, 2018

(in thousands)

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
GWPORS					
Actuarially Determined Contribution	\$ 5,213	\$ 5,495	\$ 4,707	\$ 5,256	\$ 4,976
Contributions in Relation to the Actuarially Determined Contribution					
Employer Contributions ²	4,613	4,464	4,278	4,088	3,762
Non-Employer Contributions (State)					
Total Contributions	\$ 4,613	\$ 4,464	\$ 4,278	\$ 4,088	\$ 3,762
Contribution Deficiency / (Excess)	\$ 600	\$ 1,031	\$ 429	\$ 1,168	\$ 1,214
Covered Payroll	\$ 50,823	\$ 49,381	\$ 47,108	\$ 44,885	\$ 41,637
Contributions as a Percentage of Covered Payroll	9.08%	9.04%	9.08%	9.11%	9.04%
MPORS					
Actuarially Determined Contribution	\$ 23,598	\$ 21,052	\$ 20,679	\$ 17,229	\$ 17,922
Contributions in Relation to the Actuarially Determined Contribution					
Employer Contributions ²	7,758	7,091	6,928	6,630	6,459
Non-Employer Contributions (State)	15,840	13,961	13,751	13,433	13,049
Total Contributions	\$ 23,598	\$ 21,052	\$ 20,679	\$ 20,063	\$ 19,508
Contribution Deficiency / (Excess)	\$ 0	\$ 0	\$ 0	\$ (2,834)	\$ (1,586)
Covered Payroll	\$ 52,036	\$ 48,604	\$ 47,234	\$ 45,736	\$ 44,427
Contributions as a Percentage of Covered Payroll	45.35%	43.31%	43.78%	43.87%	43.91%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² Employer consists of the Employer, Membership Fees, Reduction in Force Program and Miscellaneous Revenue.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Employer and Non-Employer (State) Contributions for Cost-Sharing Multiple-Employer Plans

as of June 30, 2018

(in thousands)

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
FURS					
Actuarially Determined Contribution	\$ 23,181	\$ 20,938	\$ 20,133	\$ 13,279	\$ 13,699
Contributions in Relation to the Actuarially Determined Contribution					
Employer Contributions ²	7,053	6,500	6,163	6,100	6,007
Non-Employer Contributions (State)	16,128	14,438	13,970	13,573	12,767
Total Contributions	\$ 23,181	\$ 20,938	\$ 20,133	\$ 19,673	\$ 18,774
Contribution Deficiency / (Excess)	\$ 0	\$ 0	\$ 0	\$ (6,394)	\$ (5,075)
Covered Payroll	\$ 47,935	\$ 45,208	\$ 43,119	\$ 41,627	\$ 39,892
Contributions as a Percentage of Covered Payroll	48.36%	46.32%	46.69%	47.26%	47.06%
VFCA					
Actuarially Determined Contribution	\$ 2,212	\$ 2,065	\$ 2,037	\$ 890	\$ 1,116
Contributions in Relation to the Actuarially Determined Contribution					
Employer Contributions			2,036	1,913	1,818
Non-Employer Contributions (State)	2,212	2,065			
Total Contributions	\$ 2,212	\$ 2,065	\$ 2,036	\$ 1,913	\$ 1,818
Contribution Deficiency / (Excess)	\$ 0	\$ 0	\$ 1	\$ (1,023)	\$ (702)
Covered Payroll	N/A	N/A	N/A	N/A	N/A
Contributions as a Percentage of Covered Payroll	N/A	N/A	N/A	N/A	N/A

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² Employer consists of the Employer, Membership Fees, Reduction in Force Program and Miscellaneous Revenue.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Notes to the Required Supplementary Information

The information presented in the GASB Statement No. 67 required supplementary schedules was determined as part of the actuarial valuations for accounting purposes at the dates indicated.

Valuation date: June 30, 2017

Key Methods and Assumptions Used to Determine the Actuarially Determined Contribution (ADC) for fiscal year end 2018:

Timing	ADC are determined on the valuation date payable in the fiscal year beginning immediately following the valuation date
Actuarial cost method	Entry age Normal
Amortization method	Level percentage of payroll, open
Remaining amortization period	30 years
Asset valuation method	4-year smoothed market
Wage Inflation	3.50%
Inflation	2.75%
Salary increases	3.50%, including inflation
Investment rate of return	7.65%, net of pension plan investment expense, including inflation
Mortality (Healthy)	RP 2000 Combined Employee and Annuitant Mortality Table Projected to 2020 using Scale BB, set back one year for males.
Mortality (Disabled)	RP-2000 Combined Employee and Annuitant Mortality Table with no projections.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Employer Contributions

for Single-Employer Plans

as of June 30, 2018

(in thousands)

Last 10 Fiscal Years¹

Fiscal Year	2018	2017	2016	2015	2014
JRS²					
Actuarially Determined Contribution					
Contributions in Relation to the Actuarially Determined Contribution:					
Employer Contributions ³	\$ 1,085	\$ 1,800	\$ 1,807	\$ 1,684	\$ 1,651
Total Contributions	\$ 1,085	\$ 1,800	\$ 1,807	\$ 1,684	\$ 1,651
Contribution Deficiency / (Excess)	\$ (1,085)	\$ (1,800)	\$ (1,807)	\$ (1,684)	\$ (1,651)
Covered Payroll	\$ 7,291	\$ 6,974	\$ 6,920	\$ 6,525	\$ 6,355
Contributions as a Percentage of Covered Payroll	14.88%	25.81%	26.11%	25.81%	25.98%
HPORS²					
Actuarially Determined Contribution	\$ 6,530	\$ 6,045	\$ 6,158	\$ 5,706	\$ 6,121
Contributions in Relation to the Actuarially Determined Contribution:					
Employer Contributions ^{3, 4}	6,109	6,045	6,158	5,839	5,736
Total Contributions	\$ 6,109	\$ 6,045	\$ 6,158	\$ 5,839	\$ 5,736
	\$ 421	\$ 0	\$ 0	\$ (133)	\$ 385
Covered Payroll	\$ 15,251	\$ 14,779	\$ 15,276	\$ 14,549	\$ 14,149
Contributions as a Percentage of Covered Payroll	40.05%	40.90%	40.31%	40.13%	40.54%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² Notes to Schedule

Valuation date: June 30, 2017

Key Methods and Assumptions Used to Determine the Actuarially Determined Contribution (ADC) for fiscal year end 2018:

Timing	ADC is determined on the actuarial valuation date payable in the fiscal year beginning immediately following the valuation date
Actuarial cost method	Entry age Normal
Amortization method	Level percentage of payroll, open
Remaining amortization period	30 years
Asset valuation method	4-year smoothed market
Wage Inflation	3.50%
Inflation	2.75%
Salary increases	3.50%, including inflation
Investment rate of return	7.65%, net of pension plan investment expense, including inflation
Mortality (Healthy)	RP-2000 Combined Employee and Annuitant Mortality Tables Projected to 2020 using Scale BB, set back one year for males
Mortality (Disabled)	RP-2000 Combined Employee and Annuitant Mortality Table

³ Employer consists of the Employer, Membership Fees, Reduction in Force Program and Miscellaneous Revenue.

⁴ For fiscal year 2014, the HPORS contributions for the supplemental benefit payment were classified as a non-employer contribution. It has been determined that the supplemental contribution should be classified as an employer contribution.

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FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Investment Returns for Multiple-Employer Plans

as of June 30, 2018

Last 10 Fiscal Years¹

	Year Ended June 30	PERS-DBRP	SRS	GWPORS
Annual money-weighted rate of return, net investment expense	2018	8.88%	8.83%	8.82%
	2017	11.94%	11.96%	11.97%
	2016	2.04%	2.05%	2.09%
	2015	4.60%	4.59%	4.59%
	2014	17.18%	17.15%	17.12%

	Year Ended June 30	MPORS	FURS	VFCA
Annual money-weighted rate of return, net investment expense	2018	8.86%	8.85%	8.97%
	2017	11.92%	11.93%	11.89%
	2016	2.18%	2.19%	1.85%
	2015	4.66%	4.66%	4.63%
	2014	17.16%	17.15%	17.23%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Required Supplementary Information
Schedule of Investment Returns for Single-Employer Plans
as of June 30, 2018
Last 10 Fiscal Years¹

	Year Ended June 30	JRS	HPORS
Annual money-weighted rate of return, net investment expense	2018	8.87%	8.89%
	2017	11.96%	11.92%
	2016	2.03%	2.02%
	2015	4.60%	4.61%
	2014	17.17%	17.19%

¹ This Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Required Supplementary Information

Schedule of Total OPEB (Healthcare) Liability and Related Ratios, Last Ten Fiscal Years¹

Fiscal Year	2018
Total OPEB Liability	
Service cost	\$ 27,891
Interest	29,728
Changes of benefit terms	
Difference between expected and actual experience	(69,725)
Changes of assumptions or other inputs	(4,363)
Benefit payments	25,170
Net change in total OPEB liability	\$ 8,701
Total OPEB liability - Beginning	76,094
Total OPEB liability - Ending	\$ 84,795
Proportionate Share of Total OPEB Liability	0.16805%
Covered employee payroll	\$ 3,703,606
Total OPEB liability as a percentage of covered employee payroll	2.29%

¹ Schedules are intended to present information for 10 years. Additional years will be displayed as they become available.

In accordance with GASB Statement No. 75, the above information is presented to reflect the funding progress of the Healthcare OPEB Plan for MPERA as a State of Montana employer and is determined by the State of Montana. No assets are accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement No. 75.

Factors that significantly affect trends in the amounts reported:

Changes of benefit terms, the medical plan coverage moved from Cigna to Allegiance as of January 1, 2016, the State implemented reference-based pricing hospital contracts effective July 1, 2016, the pharmacy plan moved from URx to Navitus as of January 1, 2017, and the State implemented an employer group waiver program for Medicare retirees effective January 1, 2017.

At June 30, 2018, the most recent actuarial valuation available was performed by the State of Montana as of January 1, 2017 for the calendar year ending December 31, 2017. This actuarial valuation is performed every two years with the next valuation to be performed as of January 1, 2019 for the calendar year ending December 31, 2019. The State of Montana finances claims on a pay-as-you-go basis and does not advance fund the OPEB liability. This is the OPEB obligation for MPERA as a State of Montana employer and is determined by the State of Montana.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Notes to Required Supplementary Information for OPEB (Healthcare)

Actuarial valuation date	December 31, 2017
Actuarial measurement date ¹	March 31, 2018
Actuarial cost method	Entry age normal funding method
Amortization method	Open basis
Remaining amortization period	20 years
Asset valuation method	Not applicable because no assets meeting the definition of plan assets under GASB 75
<i>Actuarial assumptions:</i>	
Discount rate	3.89%
Projected payroll increases	4.00%
Participation:	
Future retirees	55.00%
Future eligible spouses	60.00%
Marital status at retirement	70.00%

¹ Update procedures were used to roll forward the total OPEB liability to the measurement date.

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Administrative Expenses

Year Ended June 30, 2018

	Defined Benefit Plans	PERS-DBRP Education Fund	Defined Contribution PERS-DCRP	Deferred Compensation (457) Plan
Personal Services	\$ 1,858,750	\$ 467,876	\$ 275,281	\$ 143,350
Board Members' Per Diem	2,408		224	168
Employee Benefits	636,063	187,569	90,045	44,672
Total Personal Services	2,497,221	655,445	365,550	188,190
Other Services				
Consulting and Professional Services	2,274,767		223,757	241,913
Legal Fees and Court Costs	57,385		245	240
Audit Fees	103,506		9,628	7,221
Medical Services	6,691		279	
Records Storage	4,996		465	349
Computer Processing	186,941	699	10,916	4,116
Printing and Photocopy Charges	17,311	1,447	815	2,943
Warrant Writing Services	50,898			3,551
Other	284,322	7,600	28,938	15,361
Total Other Services	2,986,817	9,746	275,043	275,694
Communications				
Recruitment Costs				
Postage and Mailing	59,562	976	1,315	11,432
Telephone	44,920	10,596	5,749	3,284
Total Communications	104,482	11,572	7,064	14,716
Other Expenses				
Supplies and Materials	78,002	15,251	9,463	6,072
Travel	16,171	5,193	4,080	3,114
Rent	208,374	53,622	27,351	15,300
Repairs and Maintenance	329	87	44	24
Compensated Absences	(61,606)	(5,350)	(1,981)	3
OPEB Expenses	35,642	11,672	5,101	2,506
Miscellaneous	635,798	34,219	62,572	59,575
Total Other Expenses	912,710	114,694	106,630	86,594
Total Administrative Expenses	\$ 6,501,230	\$ 791,457	\$ 754,287	\$ 565,194

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Investment Expenses

Year Ended June 30, 2018

Plan	Investment Manager	Fees
PERS-DBRP	Board of Investments	\$ 35,238,061
PERS-DCRP DISABILITY OPEB	Board of Investments	15,654
JRS	Board of Investments	624,393
HPORS	Board of Investments	903,088
SRS	Board of Investments	2,159,057
GWPORS	Board of Investments	1,156,845
MPORS	Board of Investments	2,450,041
FURS	Board of Investments	2,531,506
VFCA	Board of Investments	227,347
DC	PIMCO	29,723
	State Street Bank	2,307
	Transamerica	10,038
	Prudential	10,058
	Voya	10,564
457	PIMCO	456,922
	State Street Bank	35,489
	Transamerica	154,373
	Prudential	154,675
	Voya	162,460
Total Investment Expense		\$ 46,332,601

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Professional/Consultant Fees

Year Ended June 30, 2018

Individual or Firm	Nature of Service	Amount Paid
Consultant Fees		
Agamenon & Frank Court Reporting	Court Reporting Services	\$ 150
Cavanaugh Macdonald Consulting	Actuarial Audit	258,510
Cheryl Romsa	Court Reporting Services	192
CMS Communication and Management	HR Consulting	8,193
Conduent	Mutual Funds Performance Review	96,000
Department of Administration	Risk Data Management Services	2,097
Government Finance Officers Assoc.	CAFR Review	1,095
Ice Miller	Tax Consultants	25,269
Lexis Nexis	Risk Data Management Services	360
Pension Benefit Information, LLC	Death Validation Services	3,500
Public Pension Coordinating Council	Pension Standards Award	100
Sagitec Solutions, LLC	Pension Systems Design	2,344,824
Stephen T Schmitz	Litigation Services	147
Consultant Fees Subtotal		2,740,437
Other Professional Fees		
Dean Gregg, PHD	Medical Consultant	325
Department of Justice	Legal Services	11,861
Legislative Audit Division	Independent Auditors	120,355
Timothy D. Schofield, MD PLLC	Medical Consultant	5,480
Other Professional Fees Subtotal		138,021
Total Professional/Consultant Fees		\$ 2,878,458

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FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Detail of Fiduciary Net Position (PERS-DBRP and PERS-DBEd)

as of June 30, 2018

	PERS-DBRP	PERS-DBEd	TOTAL
Assets			
Cash and Short-term Investments	\$ 151,567,601	\$ 2,656,650	\$ 154,224,251
Securities Lending Collateral	36,792,892		36,792,892
Receivables			
Interest	209,546	4,446	213,992
Accounts Receivables	4,382,659	15,480	4,398,139
Due from Other Funds	672,567		672,567
Due from Primary Government			
Notes Receivable	15,952		15,952
<i>Total Receivables</i>	5,280,724	19,926	5,300,650
Investments, at fair value			
CAPP Participant Pool	5,652,705,617		5,652,705,617
<i>Total Investments</i>	5,652,705,617		5,652,705,617
Capital Assets			
Property and Equipment, at cost, net of Accumulated Depreciation	23,288	1,416	24,704
Intangible Assets at cost, net of amortization expense	1,398,370		1,398,370
<i>Total Capital Assets</i>	1,421,658	1,416	1,423,074
Total Assets	5,847,768,492	2,677,992	5,850,446,484
Deferred Outflow of Resources	2,032	666	2,698
Liabilities			
Securities Lending Liability	36,792,892		36,792,892
Accounts Payable	30,211,302	35,116	30,246,418
Unearned Revenue	352,570	120	352,690
Due to Other Funds			
Compensated Absences	315,865	44,811	360,676
OPEB Implicit Rate Subsidy LT	55,444	18,157	73,601
Total Liabilities	67,728,073	98,204	67,826,277
Deferred Inflow of Resources	48,443	15,864	64,307
Net Position Restricted for Pension Benefits	\$ 5,779,994,008	\$ 2,564,590	\$ 5,782,558,598

Public Employees' Retirement Board

A Component Unit of the State of Montana

**Detail of Changes in Fiduciary Net Position (PERS-DBRP and PERS-DBEd)
for the Fiscal Year Ended June 30, 2018**

	PERS-DBRP	PERS-DBEd	TOTAL
Additions			
Contributions			
Employer	\$ 106,121,985	\$ 491,096	\$ 106,613,081
Plan Member	101,993,235		101,993,235
Interest Reserve Buyback	82,036		82,036
Retirement Incentive Program	2,068		2,068
Miscellaneous Revenue	526,932		526,932
State Contributions	1,024,328		1,024,328
State Appropriations	33,634,846		33,634,846
<i>Total Contributions</i>	243,385,430	491,096	243,876,526
Investment Income			
Net Appreciation (Depreciation) in Fair Value of Investments	511,205,902	(286)	511,205,616
Interest	2,056,228	40,727	2,096,955
Dividends			
Investment Expense	(35,238,061)		(35,238,061)
<i>Net Investment Income</i>	478,024,069	40,441	478,064,510
Securities Lending Income			
Securities Lending Income	1,108,711		1,108,711
Securities Lending Rebate and Fees	(442,424)		(442,424)
<i>Net Securities Lending Income</i>	666,287		666,287
Total Net Investment Income	478,690,356	40,441	478,730,797
Total Additions	722,075,786	531,537	722,607,323
Deductions			
Benefits	395,338,673		395,338,673
Refunds/Distributions	12,619,498		12,619,498
Refunds to Other Plans	725,998		725,998
Transfers to MUS-RP	198,062		198,062
Transfers to DCRP	2,068,870		2,068,870
OPEB Expenses	37,675	12,338	50,013
Administrative Expenses	4,168,771	779,119	4,947,890
Total Deductions	415,157,547	791,457	415,949,004
Net Increase (Decrease)	306,918,239	(259,920)	306,658,319
Net Position Restricted for Pension Benefits			
Beginning of Year	5,472,598,205	2,774,146	5,475,372,351
Prior Year Adjustments	477,564	50,364	527,928
End of Year	\$ 5,779,994,008	\$ 2,564,590	\$ 5,782,558,598

FINANCIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Detail of Fiduciary Net Position (PERS-DCRP, PERS-DCEd) as of June 30, 2018

	PERS-DCRP	PERS-DCEd	TOTAL
Assets			
Cash and Short-term Investments	\$ 1,828,014	\$ 178,929	\$ 2,006,943
Securities Lending Collateral			
Receivables			
Interest	1,795	295	2,090
Accounts Receivables	300,050	3,887	303,937
Due from Other Funds			
<i>Total Receivables</i>	301,845	4,182	306,027
Investments, at fair value			
Defined Contributions Fixed Investments	14,995,719		14,995,719
Defined Contributions Variable Investments	210,638,214		210,638,214
<i>Total Investments</i>	225,633,933		225,633,933
Property and Equipment, at cost, net of Accumulated Depreciation (Note A2)	2,831	202	3,033
Intangible Assets at cost, net of amortization expense	334,082		334,082
<i>Total Capital Assets</i>	336,913	202	337,115
Total Assets	228,100,705	183,313	228,284,018
Deferred Outflow of Resources	204	71	275
Liabilities			
Securities Lending Liability			
Accounts Payable	426,224	3,784	430,008
Unearned Revenue	2,056	58	2,114
Compensated Absences	49,069	5,537	54,606
OPEB Implicit Rate Subsidy LT	5,554	1,953	7,507
<i>Total Liabilities</i>	482,903	11,332	494,235
Deferred Inflow of Resources	4,853	1,706	6,559
Net Position Restricted for Pension Benefits	\$ 227,613,153	\$ 170,346	\$ 227,783,499

Public Employees' Retirement Board

A Component Unit of the State of Montana

Detail of Changes in Fiduciary Net Position (PERS-DCRP, PERS-DCEd)

for the Fiscal Year Ended June 30, 2018

	PERS-DCRP	PERS-DCEd	TOTAL
Additions			
Contributions			
Employer	\$ 11,888,727	\$ 64,100	\$ 11,952,827
Plan Member	12,447,453		12,447,453
Miscellaneous Revenue	108,127		108,127
Nonvested Member Forfeitures	746,144		746,144
<i>Total Contributions</i>	25,190,451	64,100	25,254,551
Investment Income			
Net Appreciation (Depreciation) in Fair Value of Investments	12,784,049		12,784,049
Interest	6,878,013	2,694	6,880,707
Investment Expense	(62,690)		(62,690)
<i>Net Investment Income</i>	19,599,372	2,694	19,602,066
Securities Lending Income			
Securities Lending Income			
Securities Lending Rebate and Fees			
<i>Net Securities Lending Income</i>			
Total Net Investment Income	19,599,372	2,694	19,602,066
Total Additions	44,789,823	66,794	44,856,617
Deductions			
Distributions	9,746,223		9,746,223
OPEB Expenses	3,774	1,327	5,101
Administrative Expenses	665,872	83,314	749,186
Miscellaneous Expenses	266,540		266,540
Total Deductions	10,682,409	84,641	10,767,050
Net Increase (Decrease)	34,107,414	(17,847)	34,089,567
Net Position Restricted for Pension Benefits			
Beginning of Year	193,449,652	182,919	193,632,571
Prior Year Adjustments	56,087	5,274	61,361
End of Year	\$ 227,613,153	\$ 170,346	\$ 227,783,499

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The great horned owl is among the world's most adaptable owls in terms of habitat. They do not migrate, preferring to maintain a territory and will defend it from other great horned owls with hooting contests.

photo courtesy of Janice Miller

**MONTANA
BOARD OF INVESTMENTS**

Department of Commerce

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P.O. Box 200126
Helena, MT 59620-0126Phone: 406/444-0001
Facsimile: 406/449-6579
Website: www.investmentmt.com**Annual Report Investment Letter**
For the fiscal year ended 6/30/2018

The fiscal year 2018 time-weighted return of 8.84% represented the ninth consecutive year of positive returns for PERS. The annualized five-year and ten-year plan time-weighted returns were 8.79% and 6.76% respectively. Similar returns are noted for all other MPERA systems. Relative to a public fund peer universe as reported by our investment consultant, the ten-year return ranked in the top eight percent.

The asset allocation ranges approved by the Board of Investments provide a balance for considering the longer-term investment assumptions, providing the liquidity to fund the regular net cash needed to pay benefits and expenses, as well as maintaining the flexibility to manage risk in response to the economic and capital market cycles.

The equity-oriented asset classes generally had strong returns over the year. The impact that each asset class has on the plan return is determined by the combination of each asset class net return and the percentage allocation to each asset class as a percent of plan assets. Domestic Equity had a strong return of 14.8% and as the largest asset class within the pension, contributed the most to the plan return. Private Equity was the second largest contributor to the plan return while being the strongest performing asset class with a return of 15.6%. The International Equity and Real Estate asset class experienced returns of 8.1% and 7.6% respectively. The Fixed Income asset classes overall had a minimal impact on the plan returns.

Instead of the plan having direct exposure to all the asset classes, it invests directly in the Consolidated Asset Pension Pool (CAPP) and the Short-Term Investment Pool (STIP). All the asset classes are consolidated into CAPP.

The asset allocation changes during the fiscal year were minimal. Overall, the asset allocation mix continues to be heavily weighted towards the equity oriented asset classes that provide a greater opportunity to achieve returns consistent with the long-term actuarial investment assumption. The remaining asset classes contribute to the overall diversification and liquidity needs of the plans.

The consensus view of the market is that U.S. and global growth will remain low. Over shorter time periods, investment performance is expected to remain volatile. The Board of Investments will continue to manage the assets with belief that consistent execution of the investment process will have a significant influence on achieving the pension's objectives.

Respectfully submitted,

/s/ Joseph M. Cullen

Joseph M. Cullen CFA, CAIA, FRM
Chief Investment Officer
Montana Board of Investments

Public Employees' Retirement Board *A Component Unit of the State of Montana* **Report on Investment Activity**

Introduction

The Montana Constitution and various Montana statutes govern the investment activity of the retirement funds administered by the Public Employees' Retirement Board (PERB). The "prudent expert principle" contained in the Montana Constitution and Montana statute requires the fiduciaries of the funds, including the Montana Board of Investments (BOI), to discharge their duties in the same manner that a prudent expert acting in a fiduciary capacity with the same resources, familiar with like matters, and under the same circumstances, exercises in the conduct of an enterprise of a similar character with similar objectives.

The prudent expert principle permits diversification of the holdings of the fund to minimize the risk of loss and maximize the rate of return. The opportunity to diversify among various asset classes enables a fund to reduce volatility and increase returns.

The BOI prepares and provides information related to the defined benefit plan investments for the PERB. The Montana Public Employee Retirement Administration (MPERA), staff of the PERB, is responsible for the presentation of the report of investment activity.

Investment Goals and Objectives

The basic goals influencing the investment activity for the PERB are two-fold. The first is to realize compounded rates of return sufficient to fund benefits as provided for in statute. The second is to provide services at the lowest possible cost to employers and members. The basic investment objective of BOI is the achievement of a total rate of return greater than the assumed actuarial return over the long term.

In addition, BOI seeks to outperform the appropriate market benchmarks for each asset class year to year and provide returns comparable to those attained by similar public fund peers.

To calculate the PERB's defined benefit plan investment returns, State Street Bank, BOI's custodial bank and an independent third party, uses the time-weighted total rate of return method.

Risk Tolerance

In view of the long time horizon of the pension plans, subject to the need for sufficient liquidity to pay benefits, all funds have an above-average ability to assume risk.

Investment Management and Results

The funds of each defined benefit system are invested by BOI as part of the unified investment program. The portfolio is broadly diversified between the various asset classes including, but not limited to, stocks, bonds, real estate, and private equity. A complete list of portfolio information is available through BOI. State Street Bank compiles the rates of return for the investments. The total rates of return for fiscal year 2018 are reported by the BOI for each defined benefit fund. The following tables are a summary of the information received from the BOI.

TOTAL RATES OF ANNUALIZED RETURN BY ASSET CLASS

3-Month Period ending June 30, 2018

Asset Class	<u>INDEX</u>	<u>PERS-DBRP</u>	<u>JRS</u>	<u>HPORS</u>	<u>SRS</u>
Cash Equivalents (STIP)		0.49%	0.49%	0.49%	0.49%
Libor 1 Month	0.45%				
Other		1.62%	1.62%	1.62%	1.62%
CAPP Custom Benchmark ¹		2.64%	2.64%	2.64%	2.64%
Total Plan		1.60%	1.60%	1.60%	1.60%
Index Composite²		2.59%	2.60%	2.59%	2.59%

	<u>INDEX</u>	<u>GWPORS</u>	<u>MPORS</u>	<u>FURS</u>	<u>VFCA</u>
Cash Equivalents (STIP)		0.49%	0.49%	0.49%	0.49%
Libor 1 Month	0.45%				
Other		1.62%	1.62%	1.62%	1.62%
CAPP Custom Benchmark ¹		2.64%	2.64%	2.64%	2.64%
Total Plan		1.60%	1.60%	1.60%	1.60%
Index Composite²		2.59%	2.59%	2.59%	2.59%

¹ From inception to present:

The portfolio weighted average of MSCI US IMI Gross, MSCI ACWI ex US IMI Net, MSCI AC World Commodity Prod Net, BBG Barclays US Intermediate TIPS, BBG BARC Tys Int, BBG BARC US Corp Int Inv GRD Idx, BBG BARC US MBS Idx, BBG BARC US HY - 2% Issr Cap, MSCI US REIT INDEX GROSS, MSCI USA Small Cap Gross, BBG BARC US Agg, LIBOR 1 Month

² From inception to 3/31/2017:

The portfolio weighted average of S&P 1500 Super Composite, MSCI ACWI ex US IMI Net, S&P 1500 + 4% Qtr Lag, LIBOR 1 Month, BBG BARC US Agg, and NCREIF ODCE 1 Qtr Lag (Net)

From 4/1/2017 to present:

Equity and Cash Equivalents weighted average of CAPP Custom Benchmark and LIBOR 1 Month (Daily)

The rates of return are provided by State Street Bank, the BOI's custodial bank for the plans. Performance calculations were prepared using time-weighted rates of return and are reported net of all management fees and expenses, unless otherwise indicated.

INVESTMENT SECTION

TOTAL RATES OF ANNUALIZED RETURN BY ASSET CLASS

12-Month Period ending June 30, 2018

Asset Class	<u>INDEX</u>	<u>PERS-DBRP</u>	<u>JRS</u>	<u>HPORS</u>	<u>SRS</u>
Cash Equivalents (STIP)		1.49%	1.49%	1.49%	1.49%
Libor 1 Month	1.54%				
Total Plan		8.84%	8.84%	8.86%	8.83%
Index Composite¹		9.18%	9.19%	9.18%	9.17%

	<u>INDEX</u>	<u>GWORS</u>	<u>MPORS</u>	<u>FURS</u>	<u>VFCA</u>
Cash Equivalents (STIP)		1.49%	1.49%	1.49%	1.49%
Libor 1 Month	1.54%				
Total Plan		8.85%	8.83%	8.83%	8.84%
Index Composite¹		9.18%	9.16%	9.16%	9.19%

¹ From inception to 3/31/2017:

The portfolio weighted average of S&P 1500 Super Composite, MSCI ACWI ex US IMI Net, S&P 1500 + 4% Qtr Lag, LIBOR 1 Month, BBG BARC US Agg, and NCREIF ODCE 1 Qtr Lag (Net)

From 4/1/2017 to present:

Equity and Cash Equivalents weighted average of CAPP Custom Benchmark and LIBOR 1 Month (Daily)

The rates of return are provided by State Street Bank, the BOI's custodial bank for the plans. Performance calculations were prepared using time-weighted rates of return and are reported net of all management fees and expenses, unless otherwise indicated.

INVESTMENT SECTION

TOTAL RATES OF ANNUALIZED RETURN BY ASSET CLASS

Three-Year Period ending June 30, 2018

Asset Class	<u>INDEX</u>	<u>PERS-DBRP</u>	<u>JRS</u>	<u>HPORS</u>	<u>SRS</u>
Cash Equivalents (STIP)		0.91%	0.91%	0.91%	0.91%
Libor 1 Month	0.89%				
Total Plan		7.54%	7.55%	7.54%	7.54%
Index Composite¹		7.92%	7.93%	7.92%	7.92%

Asset Class	<u>INDEX</u>	<u>GWORS</u>	<u>MPORS</u>	<u>FURS</u>	<u>VFCA</u>
Cash Equivalents (STIP)		0.91%	0.91%	0.91%	0.91%
Libor 1 Month	0.89%				
Total Plan		7.55%	7.53%	7.54%	7.48%
Index Composite¹		7.94%	7.91%	7.92%	7.91%

¹ From inception to 3/31/2017:

The portfolio weighted average of S&P 1500 Super Composite, MSCI ACWI ex US IMI Net, S&P 1500 + 4% Qtr Lag, LIBOR 1 Month, BBG BARC US Agg, and NCREIF ODCE 1 Qtr Lag (Net)

From 4/1/2017 to present:

Equity and Cash Equivalents weighted average of CAPP Custom Benchmark and LIBOR 1 Month (Daily)

The rates of return are provided by State Street Bank, the BOI's custodial bank for the plans. Performance calculations were prepared using time-weighted rates of return and are reported net of all management fees and expenses, unless otherwise indicated.

INVESTMENT SECTION

TOTAL RATES OF ANNUALIZED RETURN BY ASSET CLASS

Five-Year Period ending June 30, 2018

Asset Class	<u>INDEX</u>	<u>PERS-DBRP</u>	<u>JRS</u>	<u>HPORS</u>	<u>SRS</u>
Cash Equivalents (STIP)		0.59%	0.59%	0.59%	0.59%
Libor 1 Month	0.60%				
Total Plan		8.79%	8.79%	8.79%	8.79%
Index Composite¹		9.32%	9.33%	9.33%	9.32%

	<u>INDEX</u>	<u>GWORS</u>	<u>MPORS</u>	<u>FURS</u>	<u>VFCA</u>
Cash Equivalents (STIP)		0.59%	0.59%	0.59%	0.59%
Libor 1 Month	0.60%				
Total Plan		8.79%	8.79%	8.79%	8.78%
Index Composite¹		9.32%	9.32%	9.32%	9.33%

¹ From inception to 3/31/2017:

The portfolio weighted average of S&P 1500 Super Composite, MSCI ACWI ex US IMI Net, S&P 1500 + 4% Qtr Lag, LIBOR 1 Month, BBG BARC US Agg, and NCREIF ODCE 1 Qtr Lag (Net)

From 4/1/2017 to present:

Equity and Cash Equivalents weighted average of CAPP Custom Benchmark and LIBOR 1 Month (Daily)

The rates of return are provided by State Street Bank, the BOI's custodial bank for the plans. Performance calculations were prepared using time-weighted rates of return and are reported net of all management fees and expenses, unless otherwise indicated.

TOTAL RATES OF ANNUALIZED RETURN BY ASSET CLASS

Ten-Year Period ending June 30, 2018

Asset Class	<u>INDEX</u>	<u>PERS-DBRP</u>	<u>JRS</u>	<u>HPORS</u>	<u>SRS</u>
Cash Equivalents (STIP)		0.58%	0.58%	0.58%	0.58%
Libor 1 Month	0.53%				
Total Plan		6.76%	6.77%	6.76%	6.75%
Index Composite¹		0.00%	0.00%	0.00%	0.00%

Asset Class	<u>INDEX</u>	<u>GWPORS</u>	<u>MPORS</u>	<u>FURS</u>	<u>VFCA</u>
Cash Equivalents (STIP)		0.58%	0.58%	0.58%	0.58%
Libor 1 Month	0.53%				
Total Plan		6.75%	6.74%	6.76%	6.75%
Index Composite¹		0.00%	0.00%	0.00%	0.00%

¹ From inception to 3/31/2017:

The portfolio weighted average of S&P 1500 Super Composite, MSCI ACWI ex US IMI Net, S&P 1500 + 4% Qtr Lag, LIBOR 1 Month, BBG BARC US Agg, and NCREIF ODCE 1 Qtr Lag (Net)

From 4/1/2017 to present:

Equity and Cash Equivalents weighted average of CAPP Custom Benchmark and LIBOR 1 Month (Daily)

The rates of return are provided by State Street Bank, the BOI's custodial bank for the plans. Performance calculations were prepared using time-weighted rates of return and are reported net of all management fees and expenses, unless otherwise indicated.

Asset Allocation

Asset allocation is the main determinant of investment returns, and will therefore impact the BOI's success in meeting long-term investment objectives. The asset allocation table on the next page represents a diversified mix of asset classes designed to meet the long-term return needs of the plans while balancing this objective with risk and liquidity considerations. The actual asset mix as of fiscal year end 2018 is listed in the table on the next page, along with the approved allocation ranges for the short term investment pool (STIP) and the 12 underlying asset classes of the CAPP.

INVESTMENT SECTION

Fiscal Year 2018 ASSET ALLOCATION					
	Allocation Range	Actual Investment		Allocation Range	Actual Investment
PERS-DBRP			GWPORS		
STIP	1% to 6%	1.93%	STIP	1% to 6%	1.82%
Domestic Equity	24% to 38%	35.36%	Domestic Equity	24% to 38%	35.41%
International Equities	12% to 24%	17.55%	International Equities	12% to 24%	17.57%
Private Equity	9% to 15%	10.86%	Private Equity	9% to 15%	10.87%
Natural Resources	0% to 6%	2.33%	Natural Resources	0% to 6%	2.33%
Real Estate	4% to 12%	7.01%	Real Estate	4% to 12%	7.02%
TIPS	0% to 4%	3.34%	TIPS	0% to 4%	3.34%
Broad Fixed Income	0% to 3%	1.26%	Broad Fixed Income	0% to 3%	1.26%
US Treasury/Agency Fixed Income	5% to 14%	8.25%	US Treasury/Agency Fixed Income	5% to 14%	8.26%
Investment Grade Credit	2% to 6%	3.42%	Investment Grade Credit	2% to 6%	3.43%
Agency Mortgage-Backed Securities	2% to 8%	3.99%	Agency Mortgage-Backed Securities	2% to 8%	3.99%
High Yield	1% to 5%	2.76%	High Yield	1% to 5%	2.76%
Diversified Strategies	0% to 0%	0.23%	Diversified Strategies	0% to 0%	0.23%
Cash Equivalents (CAPP STIP)	1% to 6%	1.71%	Cash Equivalents (CAPP STIP)	1% to 6%	1.71%
JRS			MPORS		
STIP	1% to 6%	1.83%	STIP	1% to 6%	1.92%
Domestic Equity	24% to 38%	35.40%	Domestic Equity	24% to 38%	35.37%
International Equities	12% to 24%	17.56%	International Equities	12% to 24%	17.55%
Private Equity	9% to 15%	10.87%	Private Equity	9% to 15%	10.86%
Natural Resources	0% to 6%	2.33%	Natural Resources	0% to 6%	2.33%
Real Estate	4% to 12%	7.03%	Real Estate	4% to 12%	7.01%
TIPS	0% to 4%	3.34%	TIPS	0% to 4%	3.34%
Broad Fixed Income	0% to 3%	1.26%	Broad Fixed Income	0% to 3%	1.26%
US Treasury/Agency Fixed Income	5% to 14%	8.26%	US Treasury/Agency Fixed Income	5% to 14%	8.25%
Investment Grade Credit	2% to 6%	3.43%	Investment Grade Credit	2% to 6%	3.42%
Agency Mortgage-Backed Securities	2% to 8%	3.99%	Agency Mortgage-Backed Securities	2% to 8%	3.99%
High Yield	1% to 5%	2.76%	High Yield	1% to 5%	2.76%
Diversified Strategies	0% to 0%	0.23%	Diversified Strategies	0% to 0%	0.23%
Cash Equivalents (CAPP STIP)	1% to 6%	1.71%	Cash Equivalents (CAPP STIP)	1% to 6%	1.71%
HPORS			FURS		
STIP	1% to 6%	1.75%	STIP	1% to 6%	1.95%
Domestic Equity	24% to 38%	35.44%	Domestic Equity	24% to 38%	35.36%
International Equities	12% to 24%	17.58%	International Equities	12% to 24%	17.54%
Private Equity	9% to 15%	10.88%	Private Equity	9% to 15%	10.86%
Natural Resources	0% to 6%	2.33%	Natural Resources	0% to 6%	2.33%
Real Estate	4% to 12%	7.02%	Real Estate	4% to 12%	7.01%
TIPS	0% to 4%	3.35%	TIPS	0% to 4%	3.34%
Broad Fixed Income	0% to 3%	1.26%	Broad Fixed Income	0% to 3%	1.26%
US Treasury/Agency Fixed Income	5% to 14%	8.26%	US Treasury/Agency Fixed Income	5% to 14%	8.24%
Investment Grade Credit	2% to 6%	3.43%	Investment Grade Credit	2% to 6%	3.42%
Agency Mortgage-Backed Securities	2% to 8%	4.00%	Agency Mortgage-Backed Securities	2% to 8%	3.99%
High Yield	1% to 5%	2.76%	High Yield	1% to 5%	2.76%
Diversified Strategies	0% to 0%	0.23%	Diversified Strategies	0% to 0%	0.23%
Cash Equivalents (CAPP STIP)	1% to 6%	1.71%	Cash Equivalents (CAPP STIP)	1% to 6%	1.71%
SRS			VFCA		
STIP	1% to 6%	1.90%	STIP	1% to 6%	7.33%
Domestic Equity	24% to 38%	35.38%	Domestic Equity	24% to 38%	33.42%
International Equities	12% to 24%	17.55%	International Equities	12% to 24%	16.58%
Private Equity	9% to 15%	10.86%	Private Equity	9% to 15%	10.26%
Natural Resources	0% to 6%	2.33%	Natural Resources	0% to 6%	2.20%
Real Estate	4% to 12%	7.01%	Real Estate	4% to 12%	6.62%
TIPS	0% to 4%	3.34%	TIPS	0% to 4%	3.16%
Broad Fixed Income	0% to 3%	1.26%	Broad Fixed Income	0% to 3%	1.19%
US Treasury/Agency Fixed Income	5% to 14%	8.25%	US Treasury/Agency Fixed Income	5% to 14%	7.78%
Investment Grade Credit	2% to 6%	3.43%	Investment Grade Credit	2% to 6%	3.24%
Agency Mortgage-Backed Securities	2% to 8%	3.99%	Agency Mortgage-Backed Securities	2% to 8%	3.77%
High Yield	1% to 5%	2.76%	High Yield	1% to 5%	2.61%
Diversified Strategies	0% to 0%	0.23%	Diversified Strategies	0% to 0%	0.21%
Cash Equivalents (CAPP STIP)	1% to 6%	1.71%	Cash Equivalents (CAPP STIP)	1% to 6%	1.62%

INVESTMENT SECTION

PERS-DCRP Disability OPEB

Pursuant to MPERA and BOI's plan to provide diversification of PERS-DCRP Disability OPEB assets, the assets were further diversified into longer term asset classes during the fiscal year ending June 30, 2016. In prior fiscal years, the assets had been solely invested in the STIP.

Investment Fees and Commissions

Throughout the fiscal year, the investment expense for certain investments are netted against the investment earnings. At year end, investment earnings are "grossed up" to report the investment expense for the external manager, custodial bank fees and the BOI administrative cost. This process was implemented July 1, 1995, in compliance with GASB Statement No. 25.

Fiscal 2018 BOI Administrative Expense, Fees, and Commissions									
	<u>PERS</u>	<u>JRS</u>	<u>HPORS</u>	<u>SRS</u>	<u>GWPORS</u>	<u>MPORS</u>	<u>FURS</u>	<u>VFCA</u>	<u>TOTAL</u>
CAPP	\$35,046,001	\$ 621,177	\$ 898,111	\$ 2,146,823	\$ 1,150,506	\$ 2,436,667	\$ 2,517,486	\$ 226,194	\$ 45,042,965
STIP	192,060	3,216	4,976	12,235	6,339	13,375	14,020	1,153	247,374
Totals	\$35,238,061	\$ 624,393	\$ 903,087	\$ 2,159,058	\$ 1,156,845	\$ 2,450,042	\$ 2,531,506	\$ 227,347	\$ 45,290,339

As of June 30, 2018, the Board of Investments (BOI) has not charged any fees and commissions on the PERS-DCRP Disability OPEB Plan investment in the Commingled Equity Securities.

INVESTMENT SECTION

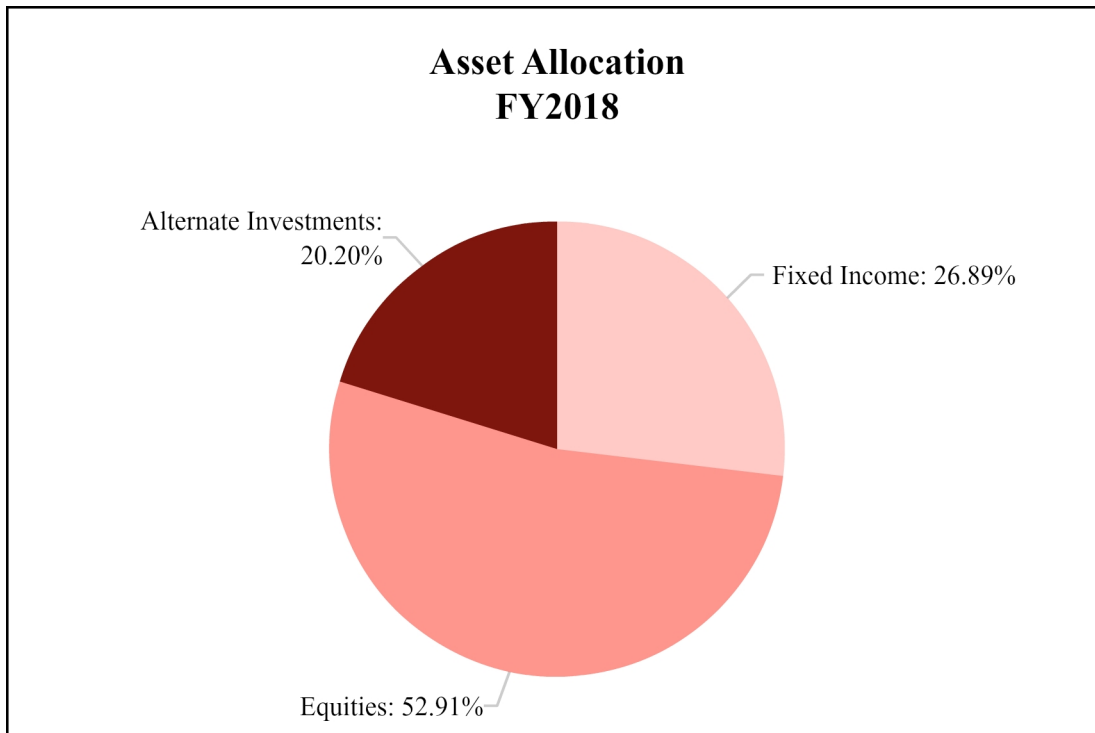
PERS-DBRP

Asset Mix (fair value)

as of June 30, 2018 and 2017

(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 111,655	1.93%	\$ 130,510	2.39%	\$ (18,855)	(14.45)%
TIPS	192,522	3.34%	165,022	3.02%	27,500	16.66 %
Broad Fixed Income	72,760	1.26%	123,691	2.27%	(50,931)	(41.18)%
US Treasury & Agency	475,332	8.25%	395,286	7.24%	80,046	20.25 %
Investment Grade Credit	197,410	3.42%	270,666	4.96%	(73,256)	(27.07)%
Mortgage Backed	230,004	3.99%	241,600	4.43%	(11,596)	(4.80)%
High Yield	158,986	2.76%	107,778	1.98%	51,208	47.51 %
Diversifying Strategies	13,087	0.23%			13,087	100.00 %
Cash Equivalents	98,461	1.71%	58,442	1.07%	40,019	68.48 %
<i>Total Fixed Income</i>	\$ 1,550,217	26.89%	\$ 1,492,995	27.36%	\$ 57,222	3.83 %
Equities:						
Domestic Equity	\$ 2,038,544	35.36%	\$ 1,945,789	35.66%	\$ 92,755	4.77 %
International Equity	1,011,420	17.55%	923,780	16.93%	87,640	9.49 %
<i>Total Equities</i>	\$ 3,049,964	52.91%	\$ 2,869,569	52.59%	\$ 180,395	6.29 %
Alternative Investments:						
Private Equity	\$ 625,950	10.86%	\$ 570,940	10.46%	\$ 55,010	9.63 %
Natural Resources	134,250	2.33%	110,770	2.03%	23,480	21.20 %
Real Estate	403,977	7.01%	412,474	7.56%	(8,497)	(2.06)%
<i>Total Alternative Investments</i>	\$ 1,164,177	20.20%	\$ 1,094,184	20.05%	\$ 69,993	6.40 %
Total	\$ 5,764,358	100.00%	\$ 5,456,748	100.00%	\$ 307,610	5.64 %

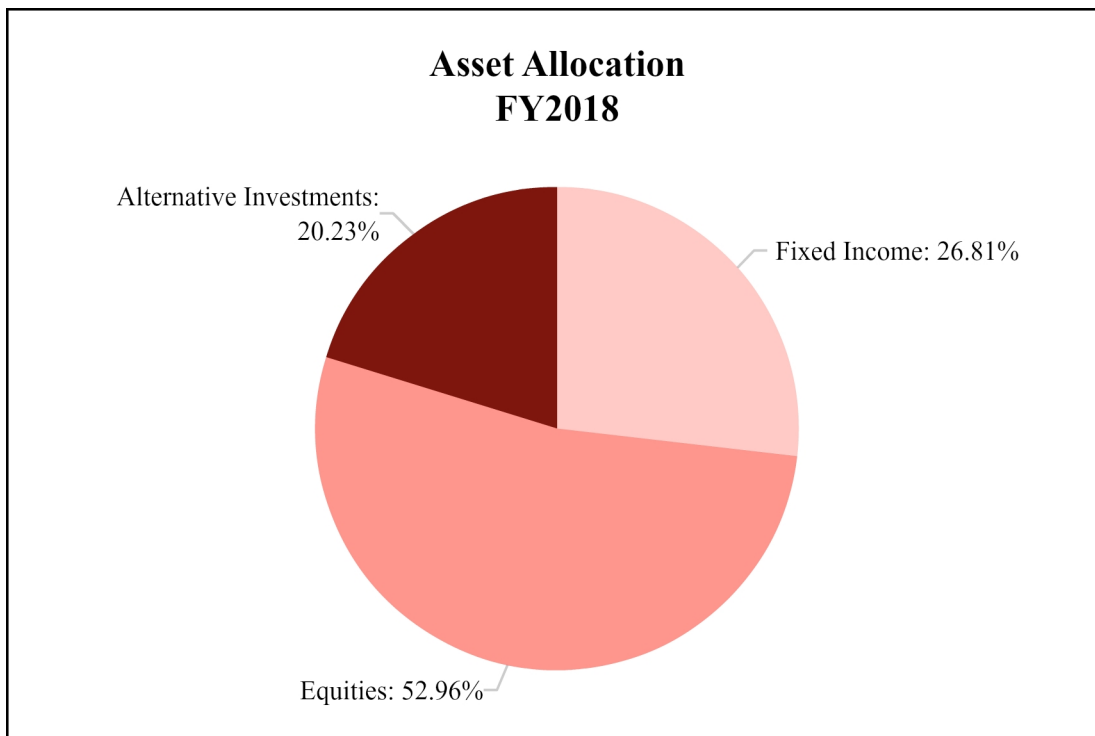


¹STIP includes Net of AP/DP which is not reflected in Montana Board of Investments State Street Bank Statements.

JRS

**Asset Mix (fair value)
as of June 30, 2018 and 2017**
(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 1,873	1.83%	\$ 2,233	2.32%	\$ (360)	(16.12)%
TIPS	3,415	3.34%	2,912	3.03%	503	17.27 %
Broad Fixed Income	1,291	1.26%	2,179	2.27%	(888)	(40.75)%
US Treasury & Agency	8,432	8.26%	6,971	7.25%	1,461	20.96 %
Investment Grade Credit	3,502	3.43%	4,772	4.96%	(1,270)	(26.61)%
Mortgage Backed	4,080	3.99%	4,265	4.43%	(185)	(4.34)%
High Yield	2,820	2.76%	1,898	1.97%	922	48.58 %
Diversifying Strategies	232	0.23%			232	100.00 %
Cash Equivalents	1,747	1.71%	1,033	1.07%	714	69.12 %
<i>Total Fixed Income</i>	<u>\$ 27,392</u>	<u>26.81%</u>	<u>\$ 26,263</u>	<u>27.30%</u>	<u>\$ 1,129</u>	<u>4.30 %</u>
Equities:						
Domestic Equity	\$ 36,160	35.40%	\$ 34,316	35.68%	\$ 1,844	5.37 %
International Equity	17,941	17.56%	16,298	16.95%	1,643	10.08 %
<i>Total Equities</i>	<u>\$ 54,101</u>	<u>52.96%</u>	<u>\$ 50,614</u>	<u>52.63%</u>	<u>\$ 3,487</u>	<u>6.89 %</u>
Alternative Investments:						
Private Equity	\$ 11,103	10.87%	\$ 10,070	10.47%	\$ 1,033	10.26 %
Natural Resources	2,381	2.33%	1,954	2.03%	427	21.85 %
Real Estate	7,166	7.03%	7,271	7.57%	(105)	(1.44)%
<i>Total Alternative Investments</i>	<u>\$ 20,650</u>	<u>20.23%</u>	<u>\$ 19,295</u>	<u>20.07%</u>	<u>\$ 1,355</u>	<u>7.02 %</u>
Total	\$ 102,143	100.00%	\$ 96,172	100.00%	\$ 5,971	6.21 %



¹STIP includes Net of AP/DP which is not reflected in Montana Board of Investments State Street Bank Statements.

INVESTMENT SECTION

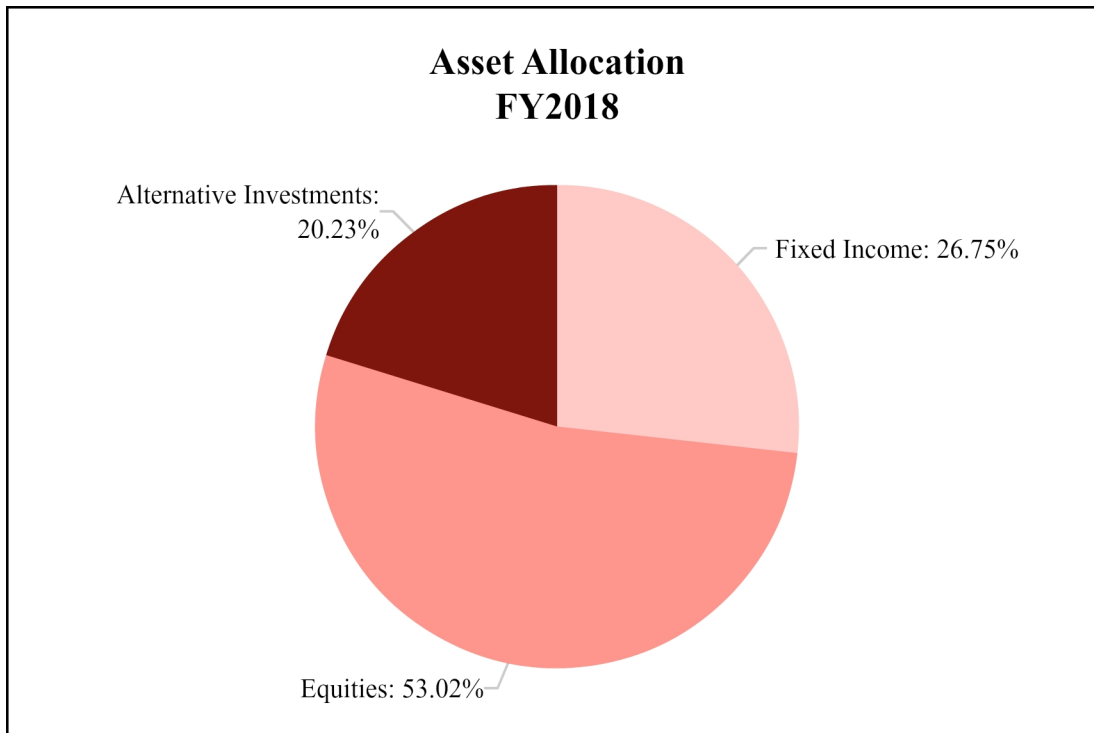
HPORS

Asset Mix (fair value)

as of June 30, 2018 and 2017

(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 2,575	1.75%	\$ 3,025	2.17%	\$ (450)	(14.88)%
TIPS	4,954	3.35%	4,224	3.03%	730	17.28 %
Broad Fixed Income	1,872	1.26%	3,166	2.27%	(1,294)	(40.87)%
US Treasury & Agency	12,231	8.26%	10,120	7.26%	2,111	20.86 %
Investment Grade Credit	5,080	3.43%	6,929	4.97%	(1,849)	(26.68)%
Mortgage Backed	5,919	4.00%	6,185	4.44%	(266)	(4.30)%
High Yield	4,091	2.76%	2,759	1.98%	1,332	48.28 %
Diversifying Strategies	337	0.23%			337	100.00 %
Cash Equivalents	2,534	1.71%	1,496	1.07%	1,038	69.39 %
Total Fixed Income	\$ 39,593	26.75%	\$ 37,904	27.19%	\$ 1,689	4.46 %
Equities:						
Domestic Equity	\$ 52,456	35.44%	\$ 49,812	35.74%	\$ 2,644	5.31 %
International Equity	26,026	17.58%	23,648	16.97%	2,378	10.06 %
Total Equities	\$ 78,482	53.02%	\$ 73,460	52.71%	\$ 5,022	6.84 %
Alternative Investments:						
Private Equity	\$ 16,107	10.88%	\$ 14,616	10.49%	\$ 1,491	10.20 %
Natural Resources	3,455	2.33%	2,836	2.03%	619	21.83 %
Real Estate	10,395	7.02%	10,559	7.58%	(164)	(1.55)%
Total Alternative Investments	\$ 29,957	20.23%	\$ 28,011	20.10%	\$ 1,946	6.95 %
Total	\$ 148,032	100.00%	\$ 139,375	100.00%	\$ 8,657	6.21 %

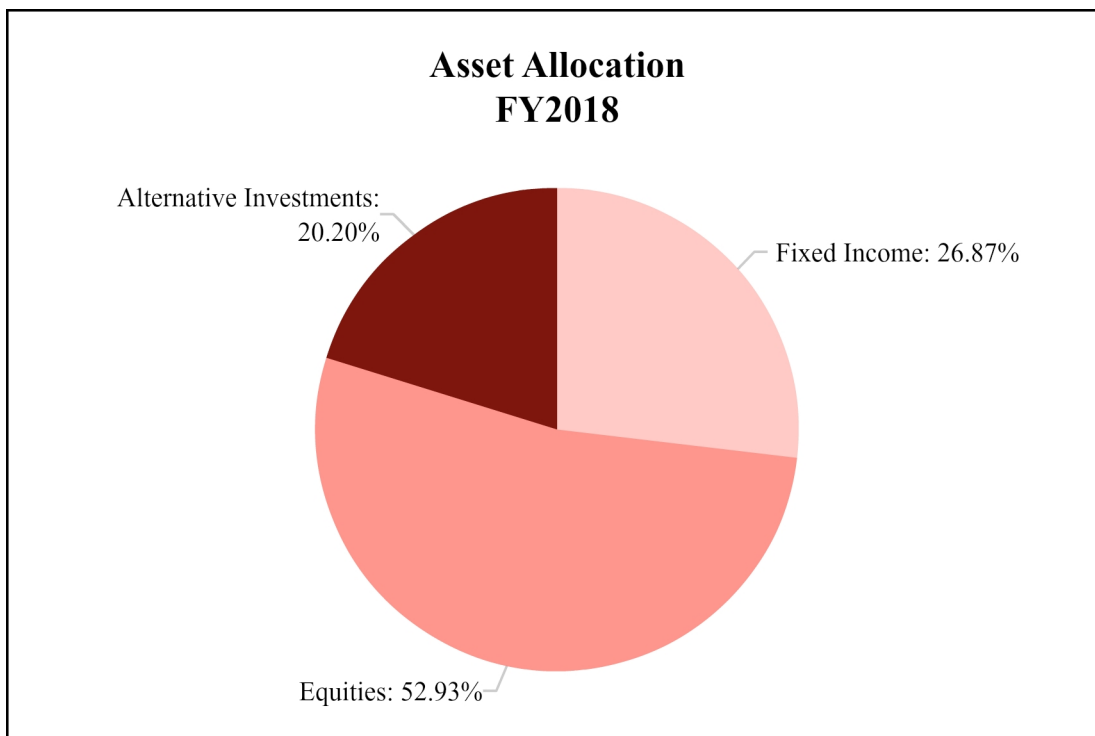


¹STIP includes Net of AP/DP which is not reflected in Montana Board of Investments State Street Bank Statements.

SRS

**Asset Mix (fair value)
as of June 30, 2018 and 2017**
(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 6,769	1.90%	\$ 8,276	2.51%	\$ (1,507)	(18.21)%
TIPS	11,952	3.34%	9,976	3.02%	1,976	19.81 %
Broad Fixed Income	4,517	1.26%	7,477	2.26%	(2,960)	(39.59)%
US Treasury & Agency	29,510	8.25%	23,896	7.24%	5,614	23.49 %
Investment Grade Credit	12,256	3.43%	16,362	4.95%	(4,106)	(25.09)%
Mortgage Backed	14,279	3.99%	14,605	4.42%	(326)	(2.23)%
High Yield	9,870	2.76%	6,516	1.97%	3,354	51.47 %
Diversifying Strategies	812	0.23%			812	100.00 %
Cash Equivalents	6,113	1.71%	3,533	1.07%	2,580	73.03 %
Total Fixed Income	\$ 96,078	26.87%	\$ 90,641	27.44%	\$ 5,437	6.00 %
Equities:						
Domestic Equity	\$ 126,558	35.38%	\$ 117,628	35.62%	\$ 8,930	7.59 %
International Equity	62,792	17.55%	55,845	16.91%	6,947	12.44 %
Total Equities	\$ 189,350	52.93%	\$ 173,473	52.53%	\$ 15,877	9.15 %
Alternative Investments:						
Private Equity	\$ 38,861	10.86%	\$ 34,515	10.45%	\$ 4,346	12.59 %
Natural Resources	8,335	2.33%	6,696	2.03%	1,639	24.48 %
Real Estate	25,080	7.01%	24,935	7.55%	145	0.58 %
Total Alternative Investments	\$ 72,276	20.20%	\$ 66,146	20.03%	\$ 6,130	9.27 %
Total	\$ 357,704	100.00%	\$ 330,260	100.00%	\$ 27,444	8.31 %



¹STIP includes Net of AP/DP which is not reflected in Montana Board of Investments State Street Bank Statements.

INVESTMENT SECTION

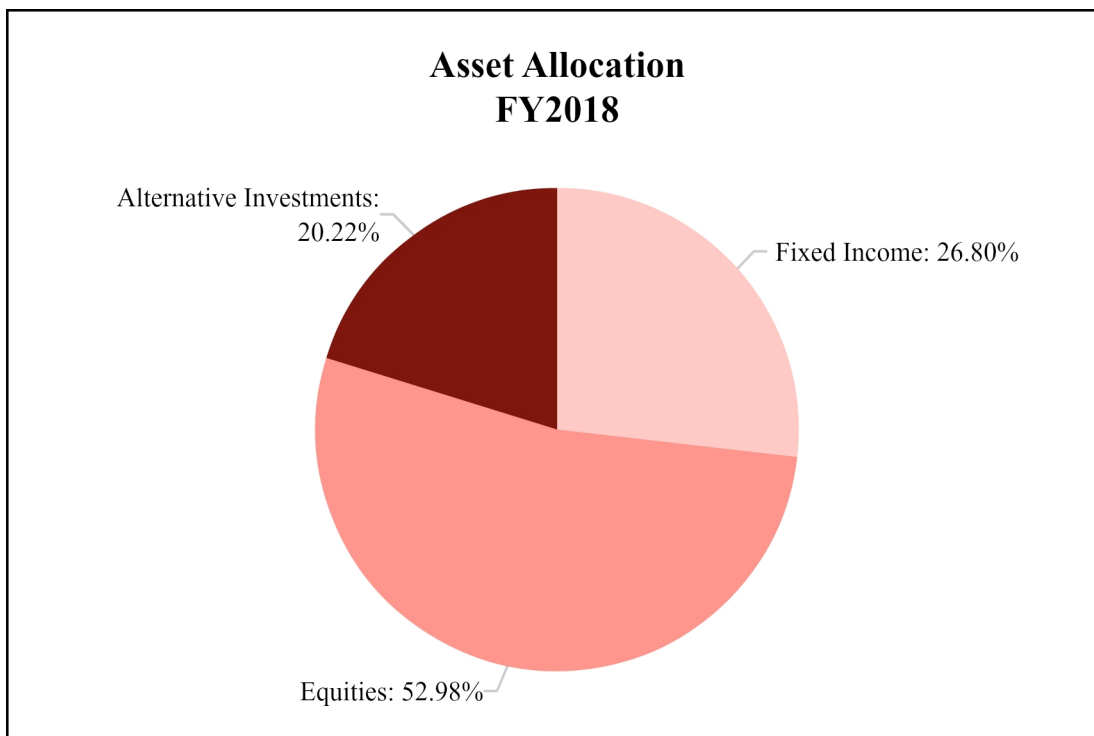
GWPORS

Asset Mix (fair value)

as of June 30, 2018 and 2017

(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 3,508	1.82%	\$ 3,940	2.25%	\$ (432)	(10.96)%
TIPS	6,441	3.34%	5,304	3.03%	1,137	21.44 %
Broad Fixed Income	2,434	1.26%	3,976	2.27%	(1,542)	(38.78)%
US Treasury & Agency	15,903	8.26%	12,706	7.26%	3,197	25.16 %
Investment Grade Credit	6,605	3.43%	8,700	4.97%	(2,095)	(24.08)%
Mortgage Backed	7,695	3.99%	7,766	4.43%	(71)	(0.91)%
High Yield	5,319	2.76%	3,464	1.98%	1,855	53.55 %
Diversifying Strategies	438	0.23%			438	100.00 %
Cash Equivalents	3,294	1.71%	1,879	1.07%	1,415	75.31 %
Total Fixed Income	\$ 51,637	26.80%	\$ 47,735	27.26%	\$ 3,902	8.17 %
Equities:						
Domestic Equity	\$ 68,205	35.41%	\$ 62,544	35.71%	\$ 5,661	9.05 %
International Equity	33,840	17.57%	29,694	16.95%	4,146	13.96 %
Total Equities	\$ 102,045	52.98%	\$ 92,238	52.66%	\$ 9,807	10.63 %
Alternative Investments:						
Private Equity	\$ 20,943	10.87%	\$ 18,352	10.48%	\$ 2,591	14.12 %
Natural Resources	4,492	2.33%	3,561	2.03%	931	26.14 %
Real Estate	13,516	7.02%	13,258	7.57%	258	1.95 %
Total Alternative Investments	\$ 38,951	20.22%	\$ 35,171	20.08%	\$ 3,780	10.75 %
Total	\$ 192,633	100.00%	\$ 175,144	100.00%	\$ 17,489	9.99 %



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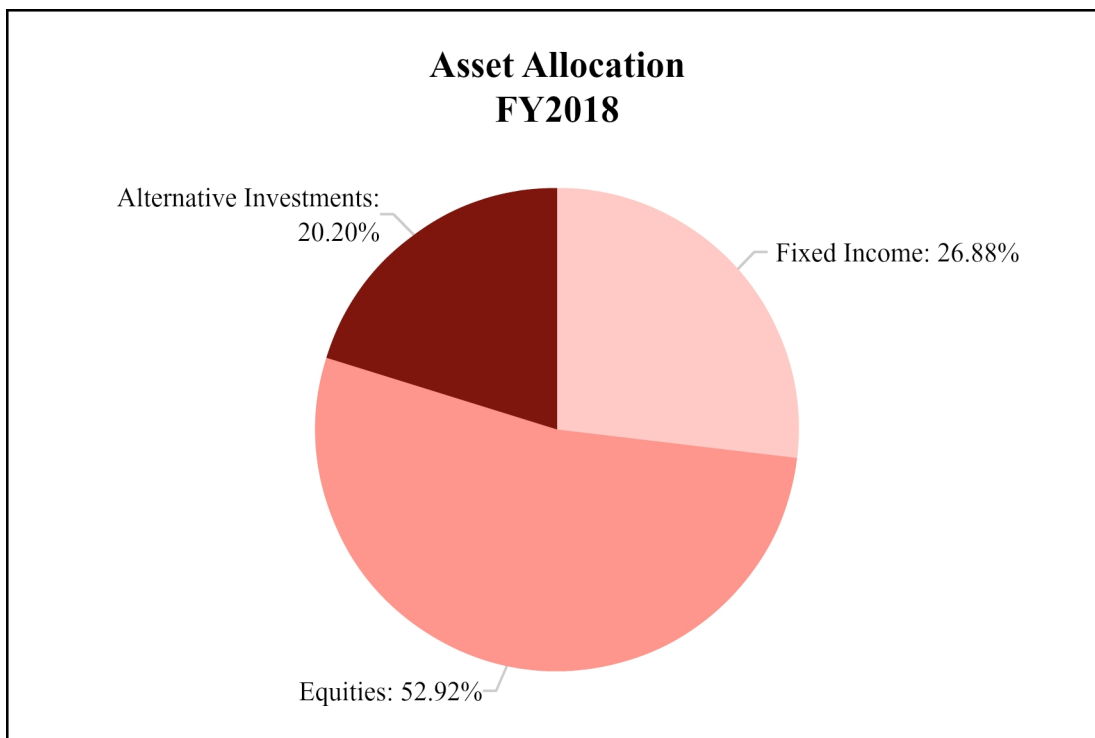
MPORS

Asset Mix (fair value)

as of June 30, 2018 and 2017

(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 7,757	1.92%	\$ 9,147	2.48%	\$ (1,390)	(15.20)%
TIPS	13,412	3.34%	11,175	3.02%	2,237	20.02 %
Broad Fixed Income	5,069	1.26%	8,363	2.26%	(3,294)	(39.39)%
US Treasury & Agency	33,115	8.25%	26,747	7.24%	6,368	23.81 %
Investment Grade Credit	13,753	3.42%	18,312	4.95%	(4,559)	(24.90)%
Mortgage Backed	16,023	3.99%	16,366	4.43%	(343)	(2.10)%
High Yield	11,076	2.76%	7,282	1.97%	3,794	52.10 %
Diversifying Strategies	912	0.23%			912	100.00 %
Cash Equivalents	6,859	1.71%	3,965	1.07%	2,894	72.99 %
Total Fixed Income	\$ 107,976	26.88%	\$ 101,357	27.42%	\$ 6,619	6.53 %
Equities:						
Domestic Equity	\$ 142,017	35.37%	\$ 131,682	35.63%	\$ 10,335	7.85 %
International Equity	70,462	17.55%	62,542	16.92%	7,920	12.66 %
Total Equities	\$ 212,479	52.92%	\$ 194,224	52.55%	\$ 18,255	9.40 %
Alternative Investments:						
Private Equity	\$ 43,607	10.86%	\$ 38,643	10.45%	\$ 4,964	12.85 %
Natural Resources	9,353	2.33%	7,498	2.03%	1,855	24.74 %
Real Estate	28,143	7.01%	27,901	7.55%	242	0.87 %
Total Alternative Investments	\$ 81,103	20.20%	\$ 74,042	20.03%	\$ 7,061	9.54 %
Total	\$ 401,558	100.00%	\$ 369,623	100.00%	\$ 31,935	8.64 %



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INVESTMENT SECTION

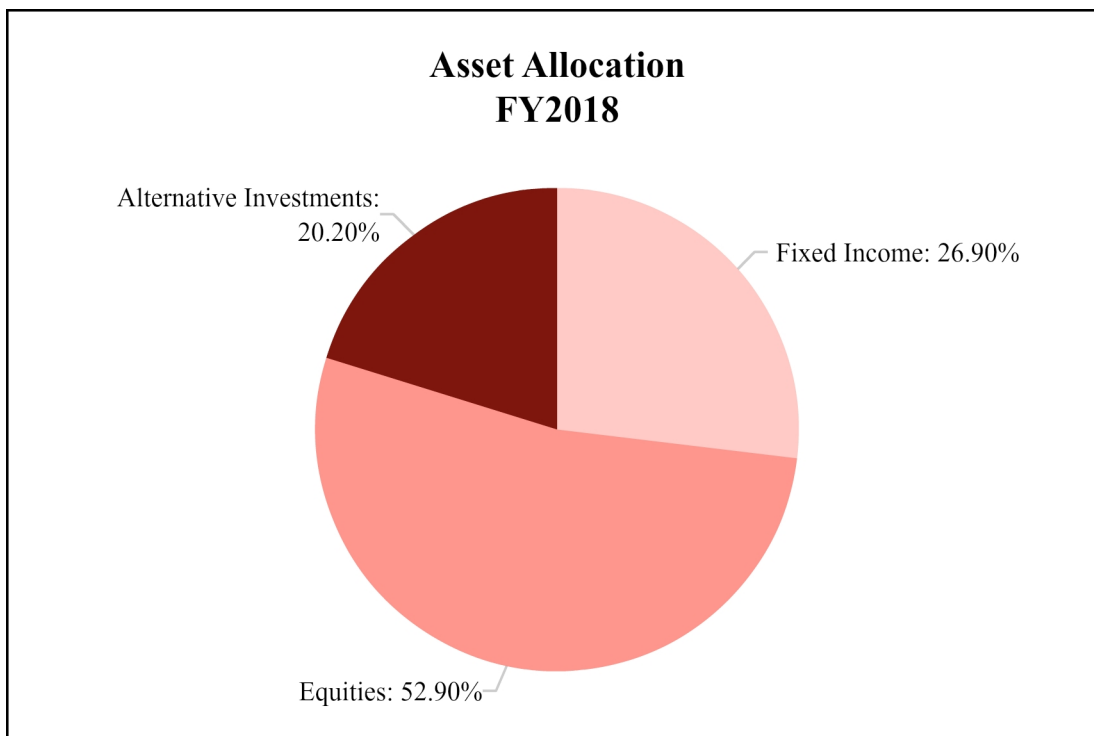
FURS

Asset Mix (fair value)

as of June 30, 2018 and 2017

(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 8,155	1.95%	\$ 9,430	2.48%	\$ (1,275)	(13.52)%
TIPS	13,920	3.34%	11,502	3.02%	2,418	21.02 %
Broad Fixed Income	5,261	1.26%	8,608	2.26%	(3,347)	(38.88)%
US Treasury & Agency	34,369	8.24%	27,529	7.24%	6,840	24.85 %
Investment Grade Credit	14,274	3.42%	18,848	4.96%	(4,574)	(24.27)%
Mortgage Backed	16,630	3.99%	16,844	4.43%	(214)	(1.27)%
High Yield	11,495	2.76%	7,494	1.97%	4,001	53.39 %
Diversifying Strategies	946	0.23%			946	100.00 %
Cash Equivalents	7,119	1.71%	4,081	1.07%	3,038	74.44 %
Total Fixed Income	\$ 112,169	26.90%	\$ 104,336	27.43%	\$ 7,833	7.51 %
Equities:						
Domestic Equity	\$ 147,397	35.36%	\$ 135,531	35.62%	\$ 11,866	8.76 %
International Equity	73,131	17.54%	64,371	16.92%	8,760	13.61 %
Total Equities	\$ 220,528	52.90%	\$ 199,902	52.54%	\$ 20,626	10.32 %
Alternative Investments:						
Private Equity	\$ 45,259	10.86%	\$ 39,773	10.45%	\$ 5,486	13.79 %
Natural Resources	9,707	2.33%	7,717	2.03%	1,990	25.79 %
Real Estate	29,209	7.01%	28,716	7.55%	493	1.72 %
Total Alternative Investments	\$ 84,175	20.20%	\$ 76,206	20.03%	\$ 7,969	10.46 %
Total	\$ 416,872	100.00%	\$ 380,444	100.00%	\$ 36,429	9.58 %

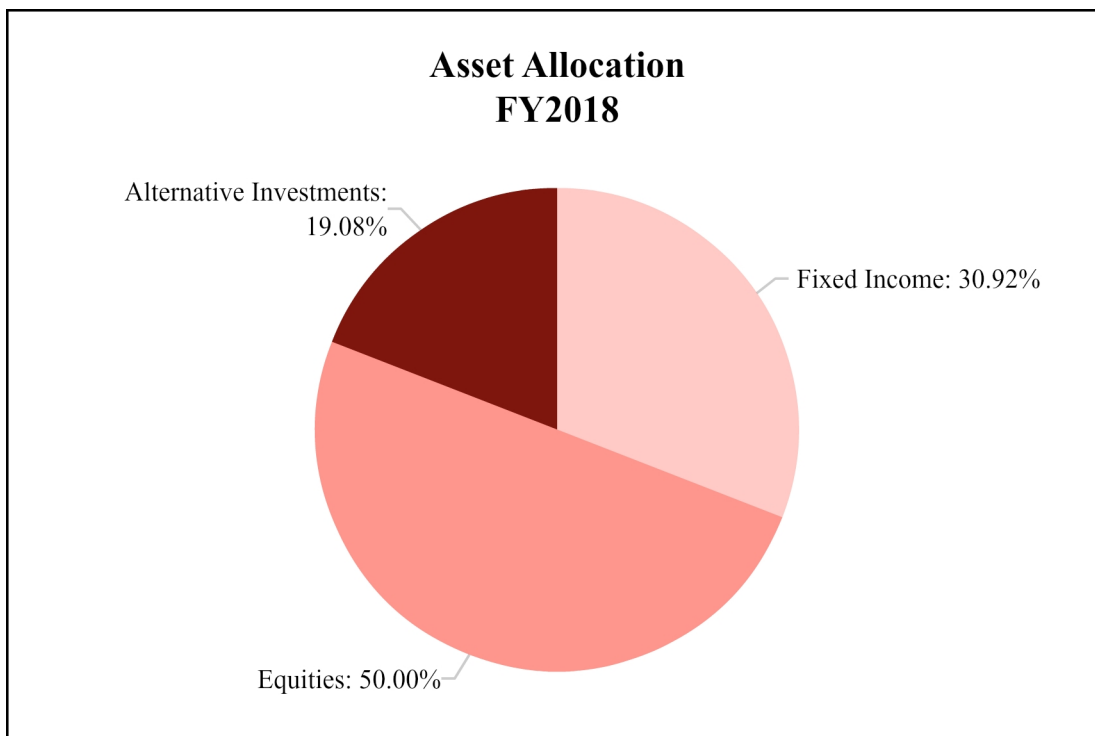


¹STIP includes Net of AP/DP which is not reflected in Montana Board of Investments State Street Bank Statements.

VFCA

**Asset Mix (fair value)
as of June 30, 2018 and 2017**
(in thousands)

Investment Type	2018 Fair Value	% of Total	2017 Fair Value	% of Total	Dollar Change	% Change
Fixed Income:						
STIP ¹	\$ 2,813	7.34%	\$ 954	2.62%	\$ 1,859	194.86 %
TIPS	1,211	3.16%	1,098	3.02%	113	10.29 %
Broad Fixed Income	458	1.19%	823	2.26%	(365)	(44.35)%
US Treasury & Agency	2,991	7.78%	2,629	7.22%	362	13.77 %
Investment Grade Credit	1,242	3.24%	1,800	4.95%	(558)	(31.00)%
Mortgage Backed	1,447	3.77%	1,607	4.42%	(160)	(9.96)%
High Yield	1,000	2.61%	717	1.97%	283	39.47 %
Diversifying Strategies	82	0.21%			82	100.00 %
Cash Equivalents	620	1.62%	389	1.07%	231	59.38 %
<i>Total Fixed Income</i>	\$ 11,864	30.92%	\$ 10,017	27.53%	\$ 1,847	18.44 %
Equities:						
Domestic Equity	\$ 12,827	33.42%	\$ 12,942	35.57%	(115)	(0.89)%
International Equity	6,364	16.58%	6,144	16.89%	220	3.58 %
<i>Total Equities</i>	\$ 19,191	50.00%	\$ 19,086	52.46%	\$ 105	0.55 %
Alternative Investments:						
Private Equity	\$ 3,939	10.26%	\$ 3,798	10.44%	\$ 141	3.71 %
Natural Resources	845	2.20%	737	2.03%	108	14.65 %
Real Estate	2,542	6.62%	2,743	7.54%	(201)	(7.33)%
<i>Total Alternative Investments</i>	\$ 7,326	19.08%	\$ 7,278	20.01%	\$ 48	0.66 %
Total	\$ 38,381	100.00%	\$ 36,381	100.00%	\$ 2,000	5.50 %



¹STIP includes Net of AP/DP which is not reflected in Montana Board of Investments State Street Bank Statements.

INVESTMENT SECTION

Public Employees' Retirement Board A Component Unit of the State of Montana Largest Holdings (by portfolio base market value) as of June 30, 2018 (in thousands)

A complete list of the portfolio holdings can be obtained by contacting the Montana Board of Investments. The information below is PERB's presentation of the largest holdings.

Par Value	Broad Fixed Income Pension Asset Class	Base Market Value
\$ 80,720,000	US TREASURY N/B	\$ 77,707,929
7,424,125	FANNIEMAE ACES	7,130,385
6,905,000	FNMA TBA 30 YR 3.5	6,864,654
6,845,000	FNMA TBA 30 YR 3	6,623,092
5,142,249	SHORT TERM INVESTMENT FUND	5,142,249
4,147,266	MONTANA ST	3,860,621
3,760,000	DAIMLER FINANCE NA LLC	3,732,323
3,228,165	GNMA POOL AD0091	3,022,582
3,026,841	FNMA POOL AM2182	2,911,722
2,780,000	JPMORGAN CHASE + CO	2,776,270

PERS' shares represent 49.98% of the total Broad Fixed Income Pension Asset Class at market.

JRS' shares represent 0.89% of the total Broad Fixed Income Pension Asset Class at market.

HPORS' shares represent 1.29% of the total Broad Fixed Income Pension Asset Class at market.

SRS' shares represent 3.10% of the total Broad Fixed Income Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total Broad Fixed Income Pension Asset Class at market.

MPORS' shares represent 3.48% of the total Broad Fixed Income Pension Asset Class at market.

FURS' shares represent 3.62% of the total Broad Fixed Income Pension Asset Class at market.

VFCA's shares represent 0.31% of the total Broad Fixed Income Pension Asset Class at market.

Par Value	Domestic Equity Pension Asset Class	Base Market Value
\$ 103,154,513	BLACKROCK MSCI USA - INDEX	\$ 1,696,778,481
53,954	DFA US SMALL CAP PORTFOLIO	174,055,535
768,999	ISHARES CORE S&P MID CAP ETF	149,785,625
7,814,269	BLACKROCK MSCI USA SMALL CAP - INDEX	125,460,695
44,224,861	SHORT TERM INVESTMENT FUND	44,224,861
250,000	ISHARES RUSSELL 2000 ETF	40,942,500
355,145	MICROSOFT CORP	35,020,848
18,388	AMAZON.COM INC	31,255,922
159,915	APPLE INC	29,601,866
21,233	ALPHABET INC CL C	23,688,596

PERS' shares represent 49.98% of the total Domestic Equity Pension Asset Class at market.

JRS' shares represent 0.89% of the total Domestic Equity Pension Asset Class at market.

HPORS' shares represent 1.29% of the total Domestic Equity Pension Asset Class at market.

SRS' shares represent 3.10% of the total Domestic Equity Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total Domestic Equity Pension Asset Class at market.

MPORS' shares represent 3.48% of the total Domestic Equity Pension Asset Class at market.

FURS' shares represent 3.62% of the total Domestic Equity Pension Asset Class at market.

VFCA's shares represent 0.31% of the total Domestic Equity Pension Asset Class at market.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Largest Holdings (by portfolio base market value)
as of June 30, 2018
(in thousands)

Par Value	High Yield Pension Asset Class	Base Market Value
\$ 8,080,675	SHORT TERM INVESTMENT FUND	\$ 8,080,675
5,710,000	HCA INC	5,852,025
5,080,000	CCO HLDGS LLC/CAP CORP	4,951,842
4,370,000	DAVITA INC	4,257,990
3,895,000	SPRINT CORP	3,951,526
3,705,000	TENET HEALTHCARE CORP	3,658,195
3,620,000	NAVIENT CORP	3,651,840
2,990,000	ALTICE FRANCE SA	2,949,242
2,935,000	SIRIUS XM RADIO INC	2,891,251
2,865,000	TRANSDIGM INC	2,881,103

PERS' shares represent 49.98% of the total High Yield Pension Asset Class at market.
 JRS' shares represent 0.89% of the total High Yield Pension Asset Class at market.
 HPORS' shares represent 1.29% of the total High Yield Pension Asset Class at market.
 SRS' shares represent 3.10% of the total High Yield Pension Asset Class at market.
 GWPORS' shares represent 1.67% of the total High Yield Pension Asset Class at market.
 MPORS' shares represent 3.48% of the total High Yield Pension Asset Class at market.
 FURS' shares represent 3.62% of the total High Yield Pension Asset Class at market.
 VFCA's shares represent 0.31% of the total High Yield Pension Asset Class at market.

Par Value	International Equity Pension Asset Class	Base Market Value
\$ 30,911,705	BLACKROCK ACWI EX US - INDEX	\$ 855,723,887
4,757,308	DFA INTL SMALL CO PORTFOLIO	98,571,419
1,285,000	ISHARES MSCI EAFE ETF	86,056,450
4,893,028	BLACKROCK ACWI EX US SMALL -INDEX	71,200,717
1,230,000	ISHARES MSCI EMERGING MARKETS ETF	53,295,900
48,139,334	SHORT TERM INVESTMENT FUND	48,139,334
1,344,160	DFA EMERGING MARKETS SMALL CAP	29,383,327
316,005	ROYAL DUTCH SHELL PLC A SHS	10,976,109
80,765	SAP SE	9,330,710
111,562	NOVARTIS AG REG	8,458,016

PERS' shares represent 49.98% of the total International Equity Pension Asset Class at market.
 JRS' shares represent 0.89% of the total International Equity Pension Asset Class at market.
 HPORS' shares represent 1.29% of the total International Equity Pension Asset Class at market.
 SRS' shares represent 3.10% of the total International Equity Pension Asset Class at market.
 GWPORS' shares represent 1.67% of the total International Equity Pension Asset Class at market.
 MPORS' shares represent 3.48% of the total International Equity Pension Asset Class at market.
 FURS' shares represent 3.62% of the total International Equity Pension Asset Class at market.
 VFCA's shares represent 0.31% of the total International Equity Pension Asset Class at market.

INVESTMENT SECTION

Public Employees' Retirement Board A Component Unit of the State of Montana Largest Holdings (by portfolio base market value) as of June 30, 2018 (in thousands)

Par Value	Investment Grade Credit Pension Asset Class	Base Market Value
\$ 10,000,000	BANK OF NY MELLON CORP	\$ 9,754,540
10,000,000	BANK OF AMERICA CORP	9,716,500
8,961,153	SHORT TERM INVESTMENT FUND	8,961,153
9,000,000	BARCLAYS PLC	8,581,030
8,000,000	DISCOVER BANK	8,025,210
8,000,000	BURLINGTN NORTH SANTA FE	7,975,250
8,000,000	JPMORGAN CHASE + CO	7,947,120
8,000,000	WELLTOWER INC	7,853,440
8,000,000	APPLE INC	7,825,630
8,036,000	VERIZON COMMUNICATIONS	7,805,585

PERS' shares represent 49.98% of the total Investment Grade Credit Pension Asset Class at market.

JRS' shares represent 0.89% of the total Investment Grade Credit Pension Asset Class at market.

HPORS' shares represent 1.29% of the total Investment Grade Credit Pension Asset Class at market.

SRS' shares represent 3.10% of the total Investment Grade Credit Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total Investment Grade Credit Pension Asset Class at market.

MPORS' shares represent 3.48% of the total Investment Grade Credit Pension Asset Class at market.

FURS' shares represent 3.62% of the total Investment Grade Credit Pension Asset Class at market.

VFCA's shares represent 0.31% of the total Investment Grade Credit Pension Asset Class at market.

Par Value	Mortgage Backed Pension Asset Class	Base Market Value
\$ 25,767,319	COMM MORTGAGE TRUST	\$ 25,380,007
20,917,544	NEW RESIDENTIAL MORTGAGE LOAN	21,744,157
17,613,619	FANNIE MAE	17,450,532
13,216,917	FED HM LN PC POOL C91856	13,337,874
13,796,598	FREDDIE MAC	13,318,820
13,101,199	SHORT TERM INVESTMENT FUND	13,101,199
12,986,654	FED HM LN PC POOL C91782	13,099,455
13,325,516	FED HM LN PC POOL G08732	12,912,684
12,487,131	FNMA POOL MA3099	12,873,022
11,725,813	FNMA POOL BH9215	11,677,417

PERS' shares represent 49.98% of the total Mortgage Backed Pension Asset Class at market.

JRS' shares represent 0.89% of the total Mortgage Backed Pension Asset Class at market.

HPORS' shares represent 1.29% of the total Mortgage Backed Pension Asset Class at market.

SRS' shares represent 3.10% of the total Mortgage Backed Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total Mortgage Backed Pension Asset Class at market.

MPORS' shares represent 3.48% of the total Mortgage Backed Pension Asset Class at market.

FURS' shares represent 3.62% of the total Mortgage Backed Pension Asset Class at market.

VFCA's shares represent 0.31% of the total Mortgage Backed Pension Asset Class at market.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Largest Holdings (by portfolio base market value)
as of June 30, 2018
(in thousands)

Par Value	Natural Resources Pension Asset Class	Base Market Value
\$ 39,029,480	MOLPUS WOODLANDS FUND III LP	\$ 46,442,075
26,853,000	ORM TIMBER FUND III LLC	33,791,815
18,643,073	RMS FOREST GROWTH III LP	22,627,228
18,581,834	EIF US POWER FUND IV LP	22,300,988
14,556,299	WARWICK PARTNERS III, L.P.	20,464,250
15,308,490	WHITE DEER ENERGY II LP	17,576,091
15,726,865	MOUNTAIN CAPITAL PARTNERS, LP	17,162,287
14,352,143	ARCLIGHT ENERGY PART FD VI LP	16,238,431
11,368,694	TRILANTIC ENERGY	15,183,766
12,310,805	ARCLIGHT ENERGY PARTNERS FD V	13,808,611

PERS' shares represent 49.98% of the total Natural Resources Pension Asset Class at market.

JRS' shares represent 0.89% of the total Natural Resources Pension Asset Class at market.

HPORS' shares represent 1.29% of the total Natural Resources Pension Asset Class at market.

SRS' shares represent 3.10% of the total Natural Resources Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total Natural Resources Pension Asset Class at market.

MPORS' shares represent 3.48% of the total Natural Resources Pension Asset Class at market.

FURS' shares represent 3.62% of the total Natural Resources Pension Asset Class at market.

VFCA's shares represent 0.31% of the total Natural Resources Pension Asset Class at market.

Par Value	Private Equity Pension Asset Class	Base Market Value
\$ 306,200	ISHARES RUSSELL 2000 ETF	\$ 50,146,374
23,623,474	NORTHGATE V LP	40,832,702
21,156,687	HCI EQUITY PARTNERS IV LP	38,338,688
28,179,533	ORCHARD LANDMARK II LP	33,456,911
33,217,208	SHORT TERM INVESTMENT FUND	33,217,208
23,210,653	BDCM OPPORTUNITY FUND III LP	32,451,115
13,375,267	AXIOM ASIA PRIVATE CAP FND III	30,057,943
21,280,340	PINE BROOK FUND II, L.P.	28,008,524
19,250,788	VERITAS CAPITAL FUND V LP	27,112,463
19,640,426	PERFORMANCE VENTURE CAPITAL II	26,904,614

PERS' shares represent 49.98% of the total Private Equity Pension Asset Class at market.

JRS' shares represent 0.89% of the total Private Equity Pension Asset Class at market.

HPORS' shares represent 1.29% of the total Private Equity Pension Asset Class at market.

SRS' shares represent 3.10% of the total Private Equity Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total Private Equity Pension Asset Class at market.

MPORS' shares represent 3.48% of the total Private Equity Pension Asset Class at market.

FURS' shares represent 3.62% of the total Private Equity Pension Asset Class at market.

VFCA's shares represent 0.31% of the total Private Equity Pension Asset Class at market.

INVESTMENT SECTION

Public Employees' Retirement Board
A Component Unit of the State of Montana
Largest Holdings (by portfolio base market value)
as of June 30, 2018
(in thousands)

Par Value	Real Estate Pension Asset Class	Base Market Value
\$ 25,026,284	JP MORGAN STRATEGIC PROPERTIES	\$ 105,362,859
53,873	PRISA LP	82,454,791
7,373	UBS TRUMBULL PROPERTY FUND	82,230,113
329	AMERICAN CORE REALTY FUND LLC	40,375,252
438,100	VANGUARD REAL ESTATE ETF	35,683,245
24,340,063	STOCKBRIDGE VALUE FUND II	30,050,412
25,071,680	SHORT TERM INVESTMENT FUND	25,071,680
19,650,508	CBRE STRAT PRTNS US VALUE 7	24,049,962
13,982,202	DRA GROWTH AND INCOME FUND VII	22,338,609
20,301,844	DRA GROWTH AND INCOME VIII	21,837,374

PERS' shares represent 49.98% of the total Real Estate Pension Asset Class at market.
 JRS' shares represent 0.89% of the total Real Estate Pension Asset Class at market.
 HPORS' shares represent 1.29% of the total Real Estate Pension Asset Class at market.
 SRS' shares represent 3.10% of the total Real Estate Pension Asset Class at market.
 GWPORS' shares represent 1.67% of the total Real Estate Pension Asset Class at market.
 MPORS' shares represent 3.48% of the total Real Estate Pension Asset Class at market.
 FURS' shares represent 3.62% of the total Real Estate Pension Asset Class at market.
 VFCA's shares represent 0.31% of the total Real Estate Pension Asset Class at market.

Par Value	TIPS Pension Asset Class	Base Market Value
\$ 392,013,700	TSY INFL IX N/B	\$ 383,174,755
1,705,039	SHORT TERM INVESTMENT FUND	1,705,039

PERS' shares represent 49.98% of the total TIPS Pension Asset Class at market.
 JRS' shares represent 0.89% of the total TIPS Pension Asset Class at market.
 HPORS' shares represent 1.29% of the total TIPS Pension Asset Class at market.
 SRS' shares represent 3.10% of the total TIPS Pension Asset Class at market.
 GWPORS' shares represent 1.67% of the total TIPS Pension Asset Class at market.
 MPORS' shares represent 3.48% of the total TIPS Pension Asset Class at market.
 FURS' shares represent 3.62% of the total TIPS Pension Asset Class at market.
 VFCA's shares represent 0.31% of the total TIPS Pension Asset Class at market.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Largest Holdings (by portfolio base market value)
as of June 30, 2018
(in thousands)

Par Value	US Treasury Pension Asset Class	Base Market Value
\$ 759,060,000	US TREASURY N/B	\$ 740,173,607
84,000,000	FEDERAL HOME LOAN BANK	82,315,340
22,000,000	FANNIE MAE	20,058,060
15,000,000	FEDERAL FARM CREDIT BANK	14,770,500
11,183,233	FNMA POOL 471456	11,071,095
10,075,390	SHORT TERM INVESTMENT FUND	10,075,390
9,923,188	FNMA POOL 466675	10,008,862
10,000,000	FNMA POOL AN4415	9,830,889
9,965,547	FRESB MULTIFAMILY MORTGAGE PAS	9,651,098
6,342,593	FNMA POOL 469739	6,432,116

PERS' shares represent 49.98% of the total US Treasury Pension Asset Class at market.

JRS' shares represent 0.89% of the total US Treasury Pension Asset Class at market.

HPORS' shares represent 1.29% of the total US Treasury Pension Asset Class at market.

SRS' shares represent 3.10% of the total US Treasury Pension Asset Class at market.

GWPORS' shares represent 1.67% of the total US Treasury Pension Asset Class at market.

MPORS' shares represent 3.48% of the total US Treasury Pension Asset Class at market.

FURS' shares represent 3.62% of the total US Treasury Pension Asset Class at market.

VFCA's shares represent 0.31% of the total US Treasury Pension Asset Class at market.

INVESTMENT SECTION

Public Employees' Retirement Board A Component Unit of the State of Montana Investment Summary as of June 30, 2018 (in thousands)

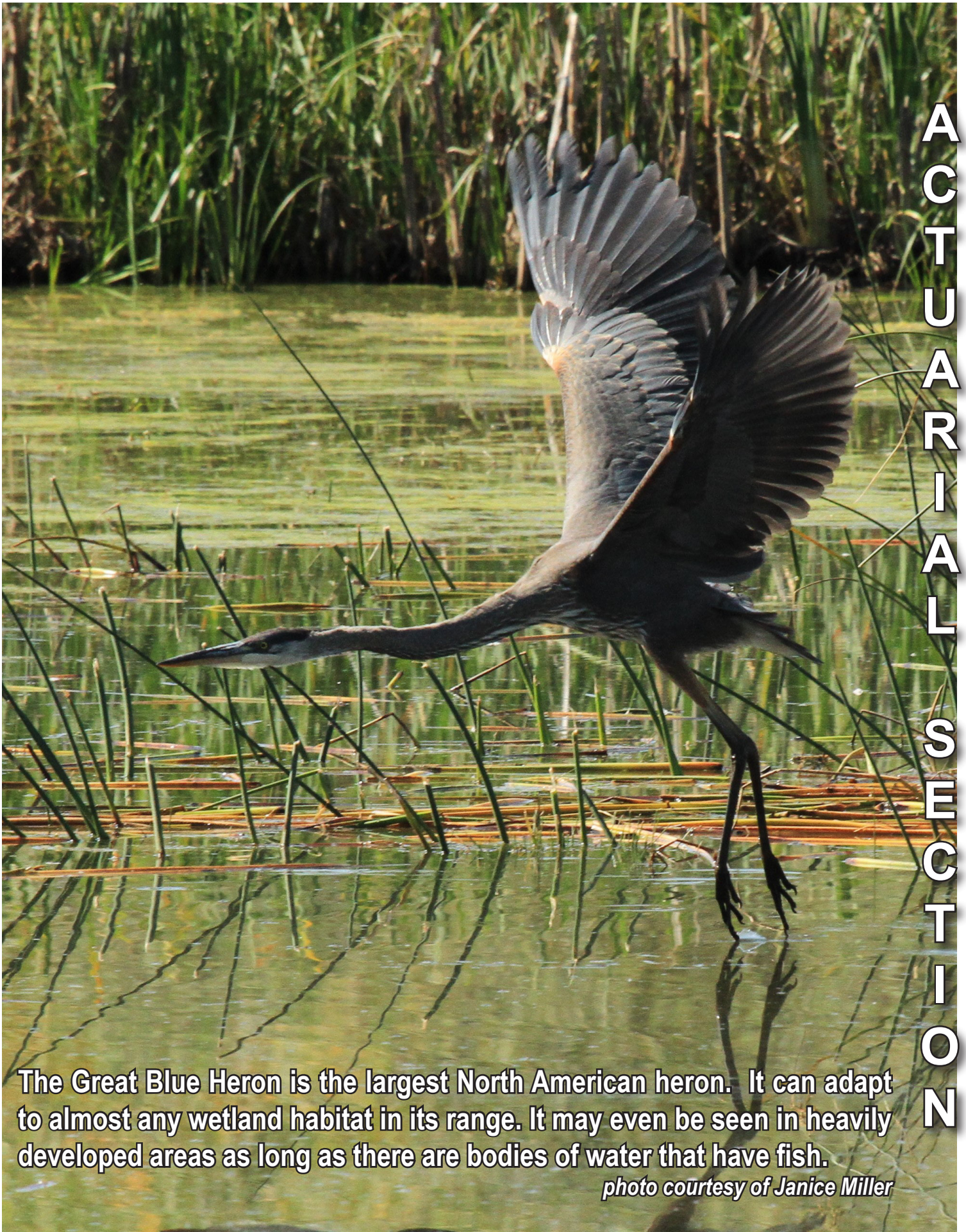
Type of Investment	PERS-DBRP ¹		JRS		HPORS		SRS	
	Fair value	% of Total Fair Value	Fair Value	% of Total Fair Value	Fair Value	% of Total Fair Value	Fair Value	% of Total Fair Value
<i>Fixed Income</i>								
TIPS	\$ 192,522	3.34%	\$ 3,415	3.34%	\$ 4,954	3.35%	\$ 11,952	3.34%
Broad Fixed Income	72,760	1.26%	1,291	1.26%	1,872	1.26%	4,517	1.26%
US Treasury & Agency	475,332	8.25%	8,432	8.26%	12,231	8.26%	29,510	8.25%
Investment Grade Credit	197,410	3.42%	3,502	3.43%	5,080	3.43%	12,256	3.43%
Mortgage Backed	230,004	3.99%	4,080	3.99%	5,919	4.00%	14,279	3.99%
High Yield	158,986	2.76%	2,820	2.76%	4,091	2.76%	9,870	2.76%
Diversifying Strategies	13,087	0.23%	232	0.23%	337	0.23%	812	0.23%
Cash Equivalents	98,461	1.71%	1,747	1.71%	2,534	1.71%	6,113	1.71%
<i>Equities</i>								
Domestic Equity	2,038,544	35.36%	36,160	35.40%	52,456	35.44%	126,558	35.38%
International Equity	1,011,420	17.55%	17,941	17.56%	26,026	17.58%	62,792	17.55%
<i>Alternative Investments</i>								
Private Equity	625,950	10.86%	11,103	10.87%	16,107	10.88%	38,861	10.86%
Natural Resources	134,250	2.33%	2,381	2.33%	3,455	2.33%	8,335	2.33%
Real Estate	403,977	7.01%	7,166	7.03%	10,395	7.02%	25,080	7.01%
<i>Short Term Investments</i>								
Short Term Investments Pool (STIP) ¹	111,655	1.93%	1,873	1.83%	2,575	1.75%	6,769	1.90%
Total	\$ 5,764,358	100.00%	\$ 102,143	100.00%	\$ 148,032	100.00%	\$ 357,704	100.00%

¹ These figures only include those of the PERS-Defined Benefit Retirement Plan, whereas the financial statements include the total in the Defined Benefit Retirement Plan and the Defined Benefit Education Program.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Investment Summary
as of June 30, 2018
(in thousands)

Type of Investment	GWPORS		MPORS		FURS		VFCA	
	Fair value	% of Total Fair Value	Fair Value	% of Total Fair Value	Fair Value	% of Total Fair Value	Fair Value	% of Total Fair Value
<i>Fixed Income</i>								
TIPS	\$ 6,441	3.34%	\$ 13,412	3.34%	\$ 13,920	3.34%	\$ 1,211	3.16%
Broad Fixed Income	2,434	1.26%	5,069	1.26%	5,261	1.26%	458	1.19%
US Treasury & Agency	15,903	8.26%	33,115	8.25%	34,369	8.24%	2,991	7.78%
Investment Grade Credit	6,605	3.43%	13,753	3.42%	14,274	3.42%	1,242	3.24%
Mortgage Backed	7,695	3.99%	16,023	3.99%	16,630	3.99%	1,447	3.77%
High Yield	5,319	2.76%	11,076	2.76%	11,495	2.76%	1,000	2.61%
Diversifying Strategies	438	0.23%	912	0.23%	946	0.23%	82	0.21%
Cash Equivalents	3,294	1.71%	6,859	1.71%	7,119	1.71%	620	1.62%
<i>Equities</i>								
Domestic Equity	68,205	35.41%	142,017	35.37%	147,397	35.36%	12,827	33.42%
International Equity	33,840	17.57%	70,462	17.55%	73,131	17.54%	6,364	16.58%
<i>Alternative Investments</i>								
Private Equity	20,943	10.87%	43,607	10.86%	45,259	10.86%	3,939	10.26%
Natural Resources	4,492	2.33%	9,353	2.33%	9,707	2.33%	845	2.20%
Real Estate	13,516	7.02%	28,143	7.01%	29,209	7.01%	2,542	6.62%
<i>Short Term Investments</i>								
Short Term Investments Pool (STIP) ¹	3,508	1.82%	7,757	1.92%	8,155	1.95%	2,813	7.34%
Total	\$ 192,633	100.00%	\$ 401,558	100.00%	\$ 416,872	100.00%	\$ 38,381	100.00%

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The Great Blue Heron is the largest North American heron. It can adapt to almost any wetland habitat in its range. It may even be seen in heavily developed areas as long as there are bodies of water that have fish.

photo courtesy of Janice Miller



Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

Via Electronic Mail

November 14, 2018

Public Employees' Retirement Board
100 North Park Avenue, Suite 200
Helena, Montana 59620

Dear Members of the Board:

At your request, we have conducted the June 30, 2018 actuarial valuation for each of the eight funded pension programs administered by the Public Employees' Retirement Board. Actuarial valuations are performed annually. This valuation reflects the benefit provisions and contribution rates in effect as of July 1, 2018.

Valuation Results

The calculations have been made on a basis consistent with our understanding of the Systems' funding requirements and goals. The funding objective for each System is to pay the Normal Cost plus an amount that amortizes the Unfunded Actuarial Liability over a period of not more than 30 years. The member, employer, and state contributions are determined by statute. Our valuations demonstrate that the projected income stream from the expected contributions are sufficient to pay the Normal Costs and amortize the Unfunded Actuarial Liability as a level percentage of future payroll for the following six Systems. The amortization periods are shown below.

- Public Employees' Retirement System (PERS) 38 years
- Highway Patrol Officers' Retirement System (HPORS) 40 years
- Municipal Police Officers' Retirement System (MPORS) 20 years
- Firefighters' Unified Retirement System (FURS) 10 years
- Sheriffs' Retirement System (SRS) 21 Years
- Game Wardens' and Peace Officers' Retirement System (GWPORS) 72 Years

The amortization periods using the Market Value of Assets for all of the Systems are shown below.

- Public Employees' Retirement System (PERS) 33 years
- Highway Patrol Officers' Retirement System (HPORS) 38 years
- Municipal Police Officers' Retirement System (MPORS) 19 years
- Firefighters' Unified Retirement System (FURS) 9 years
- Sheriffs' Retirement System (SRS) 20 Years
- Game Wardens' and Peace Officers' Retirement System (GWPORS) 53 Years

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Public Employees' Retirement Board
November 14, 2018
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Based on the assumed level of future revenue, the Unfunded Actuarial Liability for the Volunteer Firefighters' Compensation Act (VFCA) is expected to be amortized over 5 years using the Actuarial Value of Assets and over 5 years using Market Value of Assets. The Judges' Retirement System (JRS) has an Actuarial Surplus as of June 30, 2018.

The changes in funded status (on an Actuarial Value of Assets basis) for each System are shown below:

	<u>2017</u>	<u>2018</u>
PERS	73%	74%
JRS	167%	161%
HPORS	64%	64%
SRS	81%	81%
GWPORS	81%	83%
MPORS	69%	68%
FURS	76%	78%
VFCA	81%	83%

The asset values used to determine unfunded liabilities are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. Due to net investment gains, which are being recognized over four years, the Actuarial Value of Assets as of June 30, 2018 are less than the Market Value of Assets for each of the Systems. If the Market Value of Assets had been used to determine the funded status, the funded status of each of the Systems would have been higher compared to using the Actuarial Value of Assets.

HB 454 requires the PERS actuarial valuation to determine whether certain funded status and amortization thresholds are met. Once met, certain temporary employer and member contributions are discontinued. Based upon our June 30, 2018 valuation results, temporary employer and member contributions must remain in place.

At the request of the Board, we also performed a valuation as of June 30, 2018 of the PERS Long Term Disability Plan under the Defined Contribution Plan. As of June 30, 2018 the Plan has an Actuarial Surplus. The funded ratio is 102%.

Assumptions and Methods

The actuarial assumptions used in the valuations are based on an experience study for the six-year period ending June 30, 2016. The assumptions and methods used for funding purposes conform to the parameters set by accounting principles of the United States of America as promulgated by the Governmental Accounting Standards Board. In addition, the assumptions and methods used for funding purposes meet the parameters set forth by Actuarial Standards of Practice.

The actuarial assumptions reflect our understanding of the likely future experience of the System, and the assumptions as a whole represent the best estimate for the future experience of the System. Future actuarial results may differ significantly from the current results presented in this report

Public Employees' Retirement Board
November 14, 2018
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due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Determinations for purposes other than meeting these requirements may be significantly different from the results in this letter. Accordingly, additional determinations may be needed for other purposes.

Reliance on Others

In preparing the actuarial valuations, we relied on information supplied by the staff of the Public Employee Retirement Administration. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Supporting Schedules

The following schedules in this Actuarial Section were provided by Cavanaugh Macdonald Consulting to support these actuarial results:

- Schedule of Active Member Composition
- Schedule of Retiree Member Composition
- Schedule of Disabled Member Composition
- Schedule of Converted Disabled Member Composition
- Schedule of Beneficiary Member Composition

Other information presented in this Actuarial Section as of June 30, 2018, and in various parts of the Financial and Statistical Sections is based on information found in our actuarial valuation reports. Numbers reported for years prior to the fiscal year ending June 30, 2016 were developed by the prior actuary and are reported per their valuation reports.

Certification

This is to certify that the independent consulting actuaries, Edward Macdonald and Todd Green, are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. They have experience in performing valuations for public retirement systems. The valuations were prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Public Employees' Retirement Board
November 14, 2018
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This letter was prepared exclusively for the Public Employees' Retirement Board for the purpose described herein. Other users of this letter are not intended users as defined in the Actuarial Standards of Practice, and Cavanaugh Macdonald Consulting LLC assumes no duty or liability to any other user.

Respectfully submitted,

/s/ Edward A. Macdonald

/s/ Todd B. Green

Edward A. Macdonald, ASA, FCA, MAAA
President

Todd B. Green, ASA, FCA, MAAA
Principal and Consulting Actuary

Public Employees' Retirement Board*A Component Unit of the State of Montana***SUMMARY ACTUARIAL ASSUMPTIONS AND METHODS****BACKGROUND**

An experience study was performed by the PERB's actuary, Cavanaugh Macdonald Consulting, LLC during fiscal year 2017 examining the plans' experience during the six year period July 1, 2010 to June 30, 2016. The actuarial assumptions were used in the fiscal year 2018 actuarial valuation. The recommendations were formed on the basis of recent experience of the plans and on the current expectations of future economic conditions. The actuarial methods, assumptions, factors, and any changes in the actuarial assumptions are described in this section.

Demographic assumptions are based on expected membership behavior. These include the retirement rates, termination rates, disability rates, mortality rates, and miscellaneous assumptions including marital status. Economic assumptions are based on elements common to all systems, such as investment returns, inflation, and administrative expenses. Salary increases can be considered either demographic (membership oriented) or economic (given the inflation component).

The assumptions are intended to estimate the future experience of the plans and plan members in areas which affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected, based on these assumptions, will result in corresponding changes in the estimated cost of the plans' benefits.

Assumptions related to future member contribution rates for PERS have been updated based on revised projections, which incorporate plan experience over the year ending on the valuation date.

RECORDS AND DATA

The data used in the valuation consists of financial information and records of age, service and income of contributing members, former contributing members and their survivors, where applicable. All data supplied to the actuary by MPERA was accepted for valuation purposes without audit.

ACTUARIAL FUNDING AND METHOD

A fundamental principle in financing the liabilities of a retirement program is to relate the cost of benefits to when they are earned, rather than when they are paid. There are a number of methods in use for making that determination. The funding method used to determine costs in these valuations is the Entry Age Actuarial Cost Method. Under this funding method, a normal cost rate is determined by taking the value of each member's projected future benefits as of entry age into the plan.

The actuarial liability is that portion of the present value of projected benefits that will not be paid by future normal cost payments. The difference between this liability and funds accumulated as of the same date is referred to as the unfunded actuarial liability.

The portion of the actuarial liability in excess of plan assets is amortized to develop an additional cost or savings which is added to each year's employer normal cost. Under this

ACTUARIAL SECTION

cost method, actuarial gains and losses are directly reflected in the size of the unfunded actuarial liability.

ACTUARIAL VALUE OF ASSETS

Asset values were supplied by MPERA and were accepted without audit by the actuary. The Actuarial Value of Assets is the current market value, adjusted by a four-year smoothing of gains and losses on a market value basis. The asset adjustment method lessens the volatility in asset values that could occur because of fluctuations in market conditions. Each year's gain or loss is determined as the difference between the actual market return and the expected market return using the assumed rate of investment return.

INVESTMENT RETURNS

The actuarial assumption for the rate of investment return is 7.65%. The future investment earnings of the assets of the plans are assumed to accrue at an annual rate of 7.65%, net investment-related expenses.

ADMINISTRATIVE EXPENSE

Administrative expense amounts are system specific and vary from year to year based on each system's prior year's actual administrative expenses.

AMORTIZATION METHODS

The unfunded actuarial liability is amortized as a level percentage of future payroll, except for VFCA, which is amortized as a level dollar because there is no payroll.

INTEREST ON MEMBER CONTRIBUTIONS

The actuarial assumption for the interest on member contributions is 2.75%. Interest on member contributions at the time of the

valuation was assumed to accrue at a net annual rate of 2.75%, with the exception of VFCA, which has no member contributions.

CAPITAL PRESERVATION PREMIUM ON MPORS DROP ACCOUNTS

Effective July 1, 2009, the interest earned on MPORS DROP accounts changed from the actual trust fund earnings with a floor of zero to the actuarial assumed rate of return.

FUTURE SALARIES

Estimates of future salaries are based on two types of assumptions. Rates of increase in the general wage level of the membership are directly related to inflation, while individual salary changes due to promotion and longevity, referred to as the merit scale, occur even in the absence of inflation. The assumed increase in future salaries due to general wage growth is 3.50% per year for all plans. The merit scale is based on years of service and is in addition to the wage growth. The merit scale is calculated independently for each plan based on the factors applicable to the plan. VFCA is excluded from this calculation because members are unpaid volunteers.

MARRIAGE

The probability of marriage assumption is 100% of all non-retired members. Male spouses are assumed to be three years older than female spouses for all systems.

MORTALITY

The mortality assumptions among contributing members, terminated vested members, service retired members, and beneficiaries are based on RP-2000 Combined Employee and Annuitant Mortality Tables projected to 2020 with scale BB, set back one year for males. The sample mortality rates for healthy retirees,

beneficiaries and non-retired members for all plans is presented in the following table.

Healthy Retirees, Beneficiaries and Non-Retired Members Sample Mortality Rates		
<u>Age</u>	<u>Male</u>	<u>Female</u>
50	0.1879%	0.1578%
55	0.3010%	0.2458%
60	0.5271%	0.4135%
65	0.9041%	0.7624%
70	1.4636%	1.3151%
75	2.5057%	2.2077%
80	4.2816%	3.6037%
85	7.3750%	6.0833%
90	13.0721%	10.5549%

The mortality assumptions among Disabled Retirees are based on the RP-2000 Combined Employee and Annuitant Mortality Tables with no projections. No future mortality improvement is assumed. The sample mortality rates for the disabled retirees for all plans is presented in the following table.

Disabled Retirees Sample Mortality Rates		
<u>Age</u>	<u>Male</u>	<u>Female</u>
50	0.214%	0.168%
55	0.362%	0.272%
60	0.675%	0.506%
65	1.274%	0.971%
70	2.221%	1.674%
75	3.783%	2.811%
80	6.437%	4.588%
85	11.076%	7.745%
90	18.341%	13.168%

SERVICE RETIREMENT

The assumed rates of service retirement used in the valuations are dependent upon age and years of service and differ between plans. The rates are based on the actual experience of the individual plans. Under all plans, vested

terminated members are assumed to retire when first eligible for an unreduced benefit.

DISABLEMENT

The assumed rates of disablement are dependent upon age and differ between plans. It is further assumed that 75% of all disabilities are duty related for HPORS, SRS, and GWPORS. For JRS it is assumed that 10% of all disabilities are duty-related. For PERS and VFCA all disabilities are assumed to be duty related. For MPORS and FURS there is no distinction between duty and non-duty related disabilities. It is assumed that all disabilities are permanent and that no disabled member will recover and return to work.

OTHER TERMINATIONS OF MEMBERSHIP

The assumed rates of termination, other than for retirement, death, or disability, are calculated individually for each plan. The JRS does not assume termination for any reason other than retirement, death, or disability.

TERMINATING MEMBERS ELECTING A REFUND

It is assumed that all terminating members that are non-vested will receive an immediate withdrawal of their member accumulated contributions. The probability of a terminating, vested member electing a refund of the member account balance is based on age and is different for each plan as described in the actuarial valuation. These assumptions do not apply to the JRS or VFCA.

ACTUARIAL FACTORS

Retirement actuarial factors are used in determining joint, survivor and period certain annuities.

ACTUARIAL SECTION

ACTUARIAL AUDIT

The PERB has periodic audits performed to monitor the quality of actuarial services performed. The last actuarial audit was performed January of 2015 by Cavanaugh Macdonald Consulting, LLC, acting as an independent auditing actuary prior to becoming PERB's actuary. The audit was limited to reviewing then actuary Cheiron's work in preparing the June 30, 2014 actuarial valuation for the PERS-DBRP.

All results shown for valuations from July 1, 2009 to June 30, 2015 were derived from reports prepared by the prior actuary, Cheiron.

CALCULATIONS BASED ON THE MARKET VALUE OF ASSETS

Section 19-2-407, MCA, as amended by the 2007 Legislature, requires the actuarial report to show how market performance is affecting the actuarial funding of the retirement systems. In the following paragraphs, the effect on each one of the defined benefit retirement systems is explained using the market value of assets.

At June 30, 2018, the market value of assets for **PERS-DBRP** was \$74.8 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 74.77% and the amortization period for the unfunded actuarial liability would be 33 years. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 73.81% and the amortization period is 38 years.

At June 30, 2018, the valuation of the **PERS-DCRP Disability OPEB Plan** is performed based on the market value of assets. As of June 30, 2018, the statutory contribution rates are sufficient to amortize the unfunded actuarial liability, and the funded ratio is 102.32%. The Plan's assets gained 7.24% on an annualized

market value basis. This was above the assumed rate of return of 3.50%. The actuarial value of assets is set equal to the market value of assets.

At June 30, 2018, the market value of assets for **JRS** was \$1.5 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 163.61% and the amortization period for the unfunded actuarial liability would be zero years since the plan has a surplus. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 161.29% and the amortization period is still zero years due to the plan surplus.

At June 30, 2018, the market value of assets for **HPORS** was \$2.1 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 64.92% and the amortization period for the unfunded actuarial liability would be 38 years. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 64.03% and the amortization period is 40 years.

At June 30, 2018, the market value of assets for **SRS** was \$5.0 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 82.18% and the amortization period for the unfunded actuarial liability would be 20 years. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 81.04% and the amortization period is 21 years.

At June 30, 2018, the market value of assets for **GWORS** was \$2.7 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 84.11% and the amortization period

for the unfunded actuarial liability would be 53 years. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 82.95% and the amortization period is 72 years.

At June 30, 2018, the market value of assets for **MPORS** was \$4.7 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 68.46% and the amortization period for the unfunded actuarial liability would be 19 years. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 67.69% and the amortization period is 20 years.

At June 30, 2018, the market value of assets for **FURS** was \$4.8 million more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 79.19% and the amortization period for the unfunded actuarial liability would be 9 years. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 78.27% and the amortization period is 10 years.

At June 30, 2018, the market value of assets for **VFCA** was \$408 thousand more than the actuarial value of assets. If the market value of assets was used rather than the actuarial value of assets, the funded ratio on the valuation date would be 83.64%. Using the actuarial value of assets in the valuation, the funded ratio at June 30, 2018 is 82.76% and the amortization period for the unfunded actuarial liability is 5 years.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Active Member Valuation Data

System	Valuation Date	Number Members (a)	Number ERs (b)	Covered Payroll (c)	Average Annual Pay ¹ (c/a)	% Pay Increase
PERS-DBRP	June 30, 2018	28,646	544	\$ 1,230,105,350	\$ 42,942	2.45%
	June 30, 2017	29,395	539	1,232,066,537	41,914	0.36%
	June 30, 2016	28,390	535	1,185,646,179	41,763	2.11%
	June 30, 2015	28,237	539	1,154,866,605	40,899	2.25%
	June 30, 2014	28,229	541	1,129,109,402	39,998	2.90%
	June 30, 2013	28,401	540	1,103,999,865	38,872	2.63%
	June 30, 2012	28,548	538	1,081,288,177	37,876	1.32%
	June 30, 2011	28,659	533	1,071,376,488	37,384	-0.54%
	June 30, 2010	28,834	533	1,083,779,866	37,587	4.43%
	June 30, 2009	28,983	529	1,043,214,752	35,994	2.34%
	JRS	June 30, 2018	55	1	7,290,904	132,562
June 30, 2017		56	1	6,974,470	124,544	-1.02%
June 30, 2016		55	1	6,920,367	125,825	6.07%
June 30, 2015		55	1	6,524,569	118,629	2.67%
June 30, 2014		55	1	6,354,763	115,541	-0.58%
June 30, 2013		54	1	6,275,682	116,216	1.34%
June 30, 2012		54	1	6,192,732	114,680	9.70%
June 30, 2011		54	1	5,645,110	104,539	-6.25%
June 30, 2010		51	1	5,686,874	111,507	11.30%
June 30, 2009		51	1	5,109,726	100,191	0.27%
HPORS²	June 30, 2018	233	1	15,251,339	65,456	0.98%
	June 30, 2017	228	1	14,778,975	64,820	-5.80%
	June 30, 2016	222	1	15,275,964	68,811	13.98%
	June 30, 2015	241	1	14,549,378	60,371	-2.29%
	June 30, 2014	229	1	14,149,269	61,787	0.35%
	June 30, 2013	219	1	13,484,125	61,571	-1.43%
	June 30, 2012	218	1	13,617,653	62,466	7.19%
	June 30, 2011	214	1	12,471,575	58,278	2.82%
	June 30, 2010	230	1	13,035,971	56,678	10.13%
	June 30, 2009	222	1	11,424,902	51,464	0.40%
SRS	June 30, 2018	1,429	57	77,587,294	54,295	3.01%
	June 30, 2017	1,415	57	74,581,258	52,708	1.84%
	June 30, 2016	1,364	57	70,593,304	51,755	1.61%
	June 30, 2015	1,336	57	68,045,517	50,932	2.93%
	June 30, 2014	1,307	57	64,672,635	49,482	2.72%
	June 30, 2013	1,276	57	61,467,169	48,172	0.33%
	June 30, 2012	1,241	57	59,582,678	48,012	3.53%
	June 30, 2011	1,230	57	57,041,471	46,375	0.16%
	June 30, 2010	1,181	57	54,680,650	46,300	6.63%
	June 30, 2009	1,185	57	51,456,506	43,423	2.03%

¹ Average Annual Pay is based on Covered Payroll. Prior to FY2016 the prior actuary Cheiron used annualized salaries and not actual covered payroll.

² The number of members for HPORS and MPORS includes the DROP members.

The last actuarial valuation was performed as of June 30, 2018.

ACTUARIAL SECTION

System	Valuation Date	Number Members (a)	Number ERs (b)	Covered Payroll (c)	Average Annual Pay ¹ (c/a)	% Pay Increase
GWPORS	June 30, 2018	1,010	7	\$ 50,823,150	\$ 50,320	3.13%
	June 30, 2017	1,012	7	49,381,004	48,795	2.44%
	June 30, 2016	989	7	47,108,310	47,632	5.38%
	June 30, 2015	993	7	44,884,739	45,201	3.68%
	June 30, 2014	955	7	41,636,566	43,598	7.25%
	June 30, 2013	971	7	39,471,105	40,650	3.12%
	June 30, 2012	972	7	38,316,733	39,421	-2.13%
	June 30, 2011	951	7	38,306,496	40,280	-1.33%
	June 30, 2010	966	7	39,435,882	40,824	7.66%
	June 30, 2009	950	7	36,023,244	37,919	3.69%
	MPORS²	June 30, 2018	787	33	52,035,958	66,119
June 30, 2017		727	33	48,603,580	66,855	-0.64%
June 30, 2016		702	32	47,233,801	67,285	2.10%
June 30, 2015		694	32	45,736,127	65,902	3.10%
June 30, 2014		695	32	44,426,617	63,923	4.26%
June 30, 2013		698	31	42,795,697	61,312	2.96%
June 30, 2012		701	31	41,744,760	59,550	5.91%
June 30, 2011		702	31	39,470,441	56,226	4.99%
June 30, 2010		695	30	37,220,334	53,554	2.36%
June 30, 2009		663	29	34,687,120	52,318	4.70%
FURS		June 30, 2018	691	27	47,934,517	69,370
	June 30, 2017	678	27	45,208,091	66,679	-0.41%
	June 30, 2016	644	26	43,118,925	66,955	0.85%
	June 30, 2015	627	26	41,627,233	66,391	2.52%
	June 30, 2014	616	25	39,891,869	64,760	4.06%
	June 30, 2013	610	25	37,962,748	62,234	1.50%
	June 30, 2012	590	24	36,176,675	61,316	1.87%
	June 30, 2011	579	24	34,852,160	60,194	2.91%
	June 30, 2010	570	23	33,338,599	58,489	8.21%
	June 30, 2009	558	21	30,159,570	54,049	-2.68%
	VFCA	June 30, 2018	2,029			
June 30, 2017		1,957				
June 30, 2016		1,895				
June 30, 2015		1,977				
June 30, 2014		1,935				
June 30, 2013		2,101				
June 30, 2012		2,106				
June 30, 2011		2,105				
June 30, 2010		2,315				
June 30, 2009	2,253					

Covered payroll is not applicable. Members are unpaid volunteers and do not contribute to the fund.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Active Member Composition

as of June 30, 2018

	PERS-DBRP	JRS	HPORS ¹	SRS	GWPORS	MPORS ¹	FURS	VFCA ²	PERS-DCRP
Average Age	48.2	58.4	39.5	40.0	42.0	38.1	39.6	45.6	46.4
Average Service	9.6	9.0	9.9	7.2	8.1	8.7	10.5	9.2	7.4
Average Salary	\$ 43,694	\$ 137,961	\$ 65,910	\$ 58,068	\$ 51,068	\$ 69,254	\$ 71,139	N/A	\$ 51,490
Under Age 25									
Number Members	946		8	135	62	23	26	110	42
Average Salary	\$ 26,312		\$ 55,781	\$ 41,907	\$ 37,685	\$ 57,660	\$ 45,998	N/A	\$ 31,559
Ages 25-29									
Number Members	1,997		28	218	119	126	81	202	168
Average Salary	\$ 35,024		\$ 59,908	\$ 47,440	\$ 44,251	\$ 60,095	\$ 53,470	N/A	\$ 42,616
Ages 30-34									
Number Members	2,483		40	223	136	145	130	192	287
Average Salary	\$ 41,338		\$ 61,083	\$ 53,582	\$ 45,563	\$ 63,093	\$ 62,865	N/A	\$ 50,085
Ages 35-39									
Number Members	2,887	3	43	192	140	153	138	241	363
Average Salary	\$ 43,132	\$ 132,134	\$ 64,707	\$ 58,728	\$ 49,851	\$ 70,192	\$ 70,041	N/A	\$ 55,301
Ages 40-44									
Number Members	2,832	3	40	169	123	105	122	217	378
Average Salary	\$ 45,468	\$ 136,814	\$ 69,601	\$ 62,809	\$ 54,844	\$ 71,826	\$ 76,986	N/A	\$ 55,706
Ages 45-49									
Number Members	3,328	2	29	177	152	98	105	238	396
Average Salary	\$ 46,816	\$ 136,814	\$ 72,088	\$ 62,478	\$ 55,239	\$ 79,769	\$ 82,487	N/A	\$ 56,547
Ages 50-54									
Number Members	3,758	10	20	144	120	56	49	255	341
Average Salary	\$ 47,558	\$ 137,996	\$ 70,938	\$ 60,325	\$ 57,494	\$ 82,343	\$ 86,567	N/A	\$ 53,469
Ages 55-59									
Number Members	4,775	12	9	97	92	13	27	215	365
Average Salary	\$ 46,269	\$ 140,188	\$ 73,051	\$ 57,913	\$ 57,289	\$ 67,523	\$ 88,933	N/A	\$ 52,783
Ages 60-64									
Number Members	3,835	9	3	53	55	6	12	159	233
Average Salary	\$ 46,293	\$ 152,542	\$ 66,677	\$ 55,703	\$ 52,091	\$ 89,198	\$ 84,360	N/A	\$ 44,931
Ages 65-69									
Number Members	1,264	13		18	9	2		116	90
Average Salary	\$ 40,150	\$ 136,781		\$ 62,968	\$ 58,449	\$ 89,349		N/A	\$ 38,525
Age 70 & Over									
Number Members	510	3		3	2		1	81	27
Average Salary	\$ 30,965	\$ 141,288		\$ 39,677	\$ 48,837		\$ 83,179	N/A	\$ 25,521

¹ The number of members for HPORS includes 13 DROP members; MPORS includes 48 DROP members.

² Average Salary is not applicable to VFCA, members are unpaid volunteers.

The last actuarial valuation was performed as of June 30, 2018.

Public Employees' Retirement Board
A Component Unit of the State of Montana
Schedule of Retiree Member Composition
as of June 30, 2018

	PERS-DBRP	JRS	HPORS	SRS	GWPORS	MPORS	FURS	VFCA
Total Count	21,368	64	301	583	280	680	570	1,469
Average Age	72.5	76.7	69.0	65.1	66.7	66.9	69.2	71.4
Average Age at Retirement	60.1	65.6	49.3	54.1	57.5	50.2	52.5	59.6
Average Service at Retirement	19.0	17.2	24.1	19.7	17.4	20.0	24.9	27.4
Average Annual Benefit	\$ 18,213	\$ 55,345	\$ 35,009	\$ 27,670	\$ 22,351	\$ 31,574	\$ 38,955	\$ 2,005
Under Age 45								
Number Members	39		10	11		5	3	
Average Annual Benefit	\$ 6,139		\$ 34,894	\$ 32,877		\$ 29,197	\$ 125,180	
Ages 45-49								
Number Members	28		10	18		20	9	
Average Annual Benefit	\$ 16,811		\$ 39,553	\$ 34,845		\$ 39,047	\$ 324,500	
Ages 50-54								
Number Members	142		30	38	19	81	43	
Average Annual Benefit	\$ 21,767		\$ 37,964	\$ 25,132	\$ 27,489	\$ 27,603	\$ 34,144	
Ages 55-59								
Number Members	746	1	32	82	46	97	79	82
Average Annual Benefit	\$ 25,897	\$ 19,610	\$ 35,142	\$ 28,478	\$ 19,099	\$ 31,453	\$ 39,290	\$ 2,470
Ages 60-64								
Number Members	3,033	1	24	123	67	103	92	230
Average Annual Benefit	\$ 21,295	\$ 20,021	\$ 35,955	\$ 27,827	\$ 24,350	\$ 29,970	\$ 47,417	\$ 2,147
Ages 65-69								
Number Members	5,437	15	32	137	59	133	84	347
Average Annual Benefit	\$ 20,255	\$ 56,561	\$ 38,518	\$ 29,172	\$ 17,986	\$ 33,983	\$ 45,266	\$ 1,966
Ages 70-74								
Number Members	4,568	16	50	89	44	94	81	317
Average Annual Benefit	\$ 18,580	\$ 61,896	\$ 37,224	\$ 27,311	\$ 22,347	\$ 36,915	\$ 43,908	\$ 1,957
Ages 75-79								
Number Members	3,161	9	49	50	21	48	77	234
Average Annual Benefit	\$ 16,005	\$ 58,841	\$ 35,269	\$ 27,617	\$ 22,816	\$ 28,560	\$ 37,138	\$ 1,954
Ages 80 & Over								
Number Members	4,214	22	64	35	24	99	102	259
Average Annual Benefit	\$ 13,259	\$ 51,553	\$ 28,826	\$ 17,772	\$ 29,270	\$ 28,378	\$ 25,508	\$ 1,886

The last actuarial valuation was performed as of June 30, 2018.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Beneficiary Member Composition

as of June 30, 2018

	PERS-DBRP	JRS	HPORS	SRS	GWPORS	MPORS	FURS	VFCA
Total Count	497	5	12	25	11	32	20	4
Average Age	63.4	71.6	52.1	60.5	53.6	63.0	70.3	59.3
Average Service at Retirement	18.4	14.1	10.5	14.6	13.4	11.4	15.9	19.5
Average Annual Benefit	\$ 11,932	\$ 30,154	\$ 20,499	\$ 24,105	\$ 11,951	\$ 25,836	\$ 26,907	\$ 1,849
Under Age 45								
Number Members	63		3	6	3	6	2	
Average Annual Benefit	\$ 7,331		\$ 19,124	\$ 17,260	\$ 12,403	\$ 17,308	\$ 30,117	
Ages 45-49								
Number Members	24		3	3		1	2	
Average Annual Benefit	\$ 8,292		\$ 16,298	\$ 19,291		\$ 41,392	\$ 28,415	
Ages 50-54								
Number Members	31		1	1	1	2		1
Average Annual Benefit	\$ 9,463		\$ 6,424	\$ 45,200	\$ 3,614	\$ 29,614		\$ 2,370
Ages 55-59								
Number Members	52		2	2	1	3	2	2
Average Annual Benefit	\$ 10,149		\$ 17,381	\$ 47,806	\$ 28,470	\$ 23,698	\$ 22,136	\$ 1,418
Ages 60-64								
Number Members	69	1		3	2	4	1	
Average Annual Benefit	\$ 13,304	\$ 64,632		\$ 30,451	\$ 15,056	\$ 29,267	\$ 27,016	
Ages 65-69								
Number Members	84	2	1	2	2	3	2	1
Average Annual Benefit	\$ 12,948	\$ 17,049	\$ 13,509	\$ 11,648	\$ 7,344	\$ 30,021	\$ 29,984	\$ 2,190
Ages 70-74								
Number Members	65	1	2	3	2	6	2	
Average Annual Benefit	\$ 14,230	\$ 17,361	\$ 42,515	\$ 33,207	\$ 8,683	\$ 26,306	\$ 35,969	
Ages 75-79								
Number Members	46					1	1	
Average Annual Benefit	\$ 11,204					\$ 40,219	\$ 21,756	
Ages 80 & Over								
Number Members	63	1		5		6	8	
Average Annual Benefit	\$ 15,913	\$ 34,679		\$ 17,220		\$ 24,335	\$ 24,517	

The last actuarial valuation was performed as of June 30, 2018.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Disabled Member Composition

as of June 30, 2018

	PERS-DBRP	JRS	HPORS	SRS	GWPORS	MPORS	FURS	VFCA
Total Count	158	1	7	27	3	32	9	1
Average Age	55.2	59.5	48.2	51.7	48.2	45.0	41.7	67.0
Average Age at Disablement	48.2	57.1	39.4	42.6	43.6	39.9	36.7	60.5
Average Service at Retirement	15.1	15.1	10.4	9.4	10.8	9.4	9.3	3.0
Average Annual Benefit	\$ 12,570	\$ 61,736	\$ 29,990	\$ 27,501	\$ 15,262	\$ 30,792	\$ 28,840	\$ 1,050
Under Age 45								
Number Members	5		1	2		12	7	
Average Annual Benefit	\$ 8,794		\$ 27,824	\$ 35,977		\$ 31,705	\$ 26,796	
Ages 45-49								
Number Members	14		4	11	3	19	1	
Average Annual Benefit	\$ 10,383		\$ 29,326	\$ 27,773	\$ 15,262	\$ 30,651	\$ 34,081	
Ages 50-54								
Number Members	36		1	5			1	
Average Annual Benefit	\$ 12,501		\$ 34,846	\$ 30,259			\$ 37,906	
Ages 55-59								
Number Members	99	1	1	9		1		
Average Annual Benefit	\$ 13,078	\$ 61,736	\$ 29,958	\$ 23,753		\$ 22,515		
Ages 60-64								
Number Members	4							
Average Annual Benefit	\$ 12,975							
Ages 65-69								
Number Members								1
Average Annual Benefit							\$	1,050
Ages 70-74								
Number Members								
Average Annual Benefit								
Ages 75-79								
Number Members								
Average Annual Benefit								
Ages 80 & Over								
Number Members								
Average Annual Benefit								

The last actuarial valuation was performed as of June 30, 2018.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Converted Disabled Member Composition

as of June 30, 2018

	PERS-DBRP	JRS	HPORS	SRS	GWPORS	MPORS	FURS	VFCA
Total Count	532		18	46	18	68	53	
Average Age	71.3		63.0	66.2	65.6	67.2	69.9	
Average Age at Disablement	51.2		44.2	47.6	52.7	42.3	44.7	
Average Service at Retirement	11.8		10.9	10.8	14.3	11.6	15.7	
Average Annual Benefit	\$ 11,053		\$ 26,468	\$ 22,688	\$ 19,775	\$ 25,717	\$ 28,193	
Under Age 45								
Number Members								
Average Annual Benefit								
Ages 45-49								
Number Members								
Average Annual Benefit								
Ages 50-54								
Number Members			3	3	2	7	5	
Average Annual Benefit			\$ 21,480	\$ 21,732	\$ 13,718	\$ 28,965	\$ 37,154	
Ages 55-59								
Number Members			6	1	3	9	4	
Average Annual Benefit			\$ 27,320	\$ 36,757	\$ 18,911	\$ 28,839	\$ 27,182	
Ages 60-64								
Number Members	131		1	18	4	12	7	
Average Annual Benefit	\$ 12,348		\$ 32,742	\$ 24,101	\$ 15,483	\$ 25,897	\$ 27,165	
Ages 65-69								
Number Members	142		4	11	4	15	13	
Average Annual Benefit	\$ 11,243		\$ 26,426	\$ 21,792	\$ 22,431	\$ 24,071	\$ 30,444	
Ages 70-74								
Number Members	108		1	10	3	10	11	
Average Annual Benefit	\$ 10,912		\$ 28,912	\$ 21,810	\$ 23,708	\$ 24,510	\$ 26,380	
Ages 75-79								
Number Members	71		3			6	3	
Average Annual Benefit	\$ 9,574		\$ 26,899			\$ 23,507	\$ 24,250	
Ages 80 & Over								
Number Members	80			3	2	9	10	
Average Annual Benefit	\$ 10,096			\$ 16,685	\$ 24,496	\$ 25,388	\$ 25,089	

The last actuarial valuation was performed as of June 30, 2018.

Converted disabilities include those members who are disabled, but have reached normal retirement age and are no longer recorded as disabled by MPERA.

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ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Retirees and Beneficiaries

Added to and Removed from Rolls

Year Ended	Added		Removed		End of Year ⁴	Benefits ²	Average Annual Benefit ³	% Benefit Increase/Decrease
	No.	Annual Benefits ¹	No.	Annual Benefits ¹				
PERS-DBRP								
June 30, 2018	1,403	\$ 37,846,436	652	\$ 9,454,423	22,556	\$ 395,338,673	\$ 16,869	-3.33%
June 30, 2017	1,312	31,596,750	840	9,548,655	21,805	366,354,719	17,450	-3.04%
June 30, 2016	1,318	19,195,422	666	4,630,708	21,333	344,103,875	17,997	6.21%
June 30, 2015	1,255	18,427,160	655	4,854,984	20,681	319,501,818	16,945	4.41%
June 30, 2014	1,226	15,851,006	596	4,376,529	20,081	296,183,076	16,230	4.21%
June 30, 2013	1,261	16,288,261	548	4,058,927	19,451	274,021,249	15,574	18.19%
June 30, 2012	1,220	16,262,411	605	4,117,597	18,738	252,762,398	13,177	-3.29%
June 30, 2011	1,169	15,407,952	558	3,428,851	18,123	231,222,603	13,625	8.35%
June 30, 2010	905	11,510,903	468	2,803,801	17,512	212,186,085	12,575	5.81%
June 30, 2009	953	11,308,027	505	2,147,526	17,075	196,401,589	11,884	5.81%
JRS								
June 30, 2018	5	501,241	3	325,448	70	3,723,271	50,875	-2.86%
June 30, 2017	5	261,004	5	119,595	68	3,554,335	52,372	-3.51%
June 30, 2016	5	319,842	4	71,398	68	3,416,023	54,279	8.33%
June 30, 2015	2	71,326	2	14,415	67	3,040,988	50,105	3.91%
June 30, 2014	3	171,535	1	65,592	67	3,022,512	48,221	2.31%
June 30, 2013	10	251,141	1	19,919	65	2,552,787	47,131	10.29%
June 30, 2012	0	94,034	2	36,651	56	2,344,170	42,733	3.57%
June 30, 2011	5	127,602	2	4,668	58	2,239,603	41,259	5.07%
June 30, 2010	1	129,486	1	4,668	55	2,118,121	39,269	6.06%
June 30, 2009	6	159,326	1	17,466	55	1,971,931	37,027	1.19%
HPORS								
June 30, 2018	19	879,739	12	336,121	338	11,545,732	32,424	-2.07%
June 30, 2017	23	673,416	21	171,465	331	11,036,794	33,109	-3.17%
June 30, 2016	13	371,167	11	61,783	329	10,482,414	34,193	4.55%
June 30, 2015	14	366,606	9	57,749	327	9,932,134	32,707	3.31%
June 30, 2014	17	408,119	5	32,946	322	9,344,441	31,658	4.16%
June 30, 2013	12	401,650	7	58,709	310	8,708,925	30,394	15.35%
June 30, 2012	5	197,432	2	18,356	305	8,223,433	26,349	-0.98%
June 30, 2011	12	294,280	5	75,122	302	7,865,745	26,611	7.45%
June 30, 2010	8	264,156	4	102,241	295	7,556,735	24,765	2.95%
June 30, 2009	6	220,859	5	37,537	291	7,127,383	24,057	4.51%
SRS								
June 30, 2018	42	1,633,338	9	332,445	681	18,052,544	25,295	-4.85%
June 30, 2017	39	1,429,635	11	310,474	648	16,700,117	26,583	-1.16%
June 30, 2016	54	1,008,978	11	114,283	620	15,476,437	26,896	3.50%
June 30, 2015	50	791,307	6	60,636	577	14,019,543	25,986	2.12%
June 30, 2014	35	643,063	5	26,764	533	12,732,103	25,446	2.07%
June 30, 2013	38	723,040	4	44,835	503	11,582,729	24,931	15.27%
June 30, 2012	32	599,749	4	20,148	469	10,379,424	21,628	-5.97%
June 30, 2011	30	701,530	4	50,832	441	9,237,286	23,001	9.36%
June 30, 2010	17	379,084	8	82,426	415	8,276,901	21,033	7.93%
June 30, 2009	14	330,201	2	27,745	406	7,858,026	19,487	0.58%

¹These amounts are based on annual benefit totals which include lump sum death benefit payouts.

²Includes death benefit payments for active members.

³Based on June monthly benefit totals.

⁴For HPORS and MPORS, End of Year does not include DROP.

Due to MPERA's new computer system, beginning with FY2017, the amounts are calculated differently.

The last actuarial valuation was performed as of June 30, 2018.

ACTUARIAL SECTION

Year Ended	Added		Removed		End of Year ⁴	Benefits ²	Average Annual Benefit ³	% Benefit Increase
	No.	Annual Benefits ¹	No.	Annual Benefits ¹				
GWPORS								
June 30, 2018	38	\$ 770,585	2	\$ 105,878	312	\$ 6,522,921	\$ 19,638	-11.54%
June 30, 2017	31	745,929	5	135,340	276	5,809,910	22,199	-2.77%
June 30, 2016	23	338,386	4	22,118	250	5,068,318	22,832	-2.02%
June 30, 2015	35	419,935	7	53,794	231	4,550,326	23,302	4.66%
June 30, 2014	26	283,359	3	21,306	203	3,979,269	22,265	1.49%
June 30, 2013	22	233,226	5	90,813	180	3,575,042	21,938	17.62%
June 30, 2012	19	235,722	1	22,860	163	3,202,597	18,652	-11.04%
June 30, 2011	12	146,846	3	16,761	145	2,863,434	20,967	4.61%
June 30, 2010	10	112,042	1	10,583	136	2,621,834	20,044	1.24%
June 30, 2009	9	157,614	2	13,612	127	2,520,735	19,799	2.52%
MPORS								
June 30, 2018	32	1,690,900	11	756,092	812	24,566,646	29,434	-2.59%
June 30, 2017	32	1,551,779	9	420,615	791	23,474,602	30,215	-0.47%
June 30, 2016	39	834,722	15	80,036	768	21,960,690	30,357	3.10%
June 30, 2015	43	877,021	15	125,552	744	20,560,131	29,443	2.08%
June 30, 2014	19	462,040	13	109,127	716	19,449,550	28,842	4.50%
June 30, 2013	40	883,350	13	153,027	710	18,462,730	27,601	8.10%
June 30, 2012	17	515,137	10	98,603	683	17,354,933	25,533	-1.02%
June 30, 2011	22	539,164	16	145,734	676	17,013,369	25,797	6.34%
June 30, 2010	34	559,746	10	77,537	670	15,727,576	24,260	2.81%
June 30, 2009	17	456,299	7	44,723	646	15,008,432	23,597	3.90%
FURS								
June 30, 2018	31	1,781,433	9	354,340	652	23,863,193	35,161	-3.37%
June 30, 2017	23	1,614,614	14	488,405	630	22,335,636	36,389	0.95%
June 30, 2016	26	761,390	14	95,141	621	20,896,200	36,047	1.38%
June 30, 2015	27	621,742	13	95,699	609	19,745,267	35,558	6.60%
June 30, 2014	26	705,387	18	101,960	595	18,871,929	33,356	3.87%
June 30, 2013	25	620,602	9	55,278	587	17,670,032	32,112	12.43%
June 30, 2012	21	696,096	2	9,065	571	16,519,146	28,563	-3.33%
June 30, 2011	19	624,623	13	172,927	552	15,605,138	29,546	8.17%
June 30, 2010	17	501,398	13	111,575	546	14,597,875	27,314	4.17%
June 30, 2009	16	510,583	9	97,630	542	13,986,547	26,221	4.77%
VFCA								
June 30, 2018	85	158,944	49	83,074	1,474	2,944,046	1,963	-2.44%
June 30, 2017	51	319,633	38	67,063	1,438	2,858,443	2,012	0.50%
June 30, 2016	92	268,898	38	41,145	1,425	2,623,011	2,002	13.55%
June 30, 2015	78	83,963	39	38,318	1,371	2,368,553	1,763	0.69%
June 30, 2014	77	81,473	30	26,715	1,332	2,280,876	1,751	0.16%
June 30, 2013	75	129,518	32	24,135	1,285	2,819,162	1,748	11.10%
June 30, 2012	87	104,535	28	19,440	1,242	2,046,233	1,574	-4.75%
June 30, 2011	76	84,810	42	32,985	1,183	1,938,060	1,652	1.52%
June 30, 2010	82	89,933	36	33,825	1,149	1,856,833	1,627	0.38%
June 30, 2009	61	67,748	40	29,115	1,103	1,779,708	1,621	0.82%

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Solvency Test

(in thousands)

System	Valuation Date	Aggregate Accrued Liabilities for				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Reported Asset		
		1	2	3	1		2	3	
		Active Member Accounts ¹	Retirees and Beneficiaries	Active Members (ER Financed Portion)	1		2	3	
PERS-DBRP	6/30/2018	\$ 876,608	\$ 4,718,929	\$ 2,134,547	\$ 5,705,236	100%	100%	5%	
	6/30/2017	882,835	4,423,430	2,272,120	5,514,027	100	100	9	
	6/30/2016	842,772	3,955,400	1,989,751	5,247,685	100	100	23	
	6/30/2015	841,907	3,687,451	1,940,945	4,926,516	100	100	20	
	6/30/2014	838,145	3,436,212	1,903,147	4,595,805	100	100	17	
	6/30/2013	828,657	2,790,430	1,541,864	4,139,921	100	100	34	
	6/30/2012	837,663	2,958,076	1,865,543	3,816,920	100	100	1	
	6/30/2011	840,762	2,728,687	1,840,696	3,800,479	100	100	13	
	6/30/2010	848,756	2,481,534	1,911,529	3,889,890	100	100	29	
	6/30/2009	828,390	2,272,582	1,691,847	4,002,212	100	100	53	
JRS	6/30/2018	4,329	39,714	18,698	101,192	100	100	306	
	6/30/2017	4,372	38,351	15,380	97,066	100	100	353	
	6/30/2016	4,494	35,673	14,587	91,152	100	100	350	
	6/30/2015	4,667	33,210	14,024	84,934	100	100	336	
	6/30/2014	4,623	32,776	13,201	78,463	100	100	311	
	6/30/2013	4,733	31,709	12,795	70,323	100	100	265	
	6/30/2012	5,575	24,631	15,985	63,195	100	100	206	
	6/30/2011	5,115	24,692	13,607	61,274	100	100	231	
	6/30/2010	5,207	22,279	15,027	61,277	100	100	225	
	6/30/2009	4,790	21,625	15,433	61,929	100	100	230	
HPORS	6/30/2018	12,976	175,574	41,271	147,144	100	76	0	
	6/30/2017	12,288	163,885	43,297	141,236	100	79	0	
	6/30/2016	12,535	146,267	44,524	133,869	100	83	0	
	6/30/2015	12,102	133,628	47,252	125,676	100	85	0	
	6/30/2014	11,507	126,478	45,416	117,226	100	84	0	
	6/30/2013	11,339	117,914	46,341	105,736	100	80	0	
	6/30/2012	11,455	110,876	45,493	96,655	100	77	0	
	6/30/2011	10,795	107,035	37,911	95,274	100	79	0	
	6/30/2010	10,369	102,450	38,359	97,204	100	85	0	
	6/30/2009	9,571	97,087	31,157	99,652	100	93	0	
SRS	6/30/2018	55,236	254,965	126,515	353,904	100	100	35	
	6/30/2017	51,998	239,648	119,741	332,169	100	100	34	
	6/30/2016	47,826	213,000	112,321	310,510	100	100	44	
	6/30/2015	46,500	193,359	109,054	288,269	100	100	44	
	6/30/2014	45,595	176,538	103,944	264,945	100	100	41	
	6/30/2013	43,007	164,339	96,838	235,310	100	100	29	
	6/30/2012	41,694	149,254	93,612	211,535	100	100	22	
	6/30/2011	40,737	135,189	90,579	203,689	100	100	31	
	6/30/2010	39,841	117,422	89,470	200,739	100	100	49	
	6/30/2009	36,225	106,352	81,316	200,690	100	100	71	

¹Active Member Accounts include regular and additional contributions with interest, and excludes all accounts of inactive members.

The last actuarial valuation was performed as of June 30, 2018.

ACTUARIAL SECTION

System	Valuation Date	Aggregate Accrued Liabilities for				Portion of Accrued Liabilities Covered by Reported Asset		
		1	2	3	Actuarial Value of Assets	1	2	3
		Active Member Accounts ¹	Retirees and Beneficiaries	Active Members (ER Financed Portion)		1	2	3
GWPORS	6/30/2018	\$ 39,605	\$ 88,621	\$ 101,851	\$ 190,849	100%	100%	61%
	6/30/2017	39,205	77,897	100,540	176,311	100	100	59
	6/30/2016	36,111	65,912	88,984	160,555	100	100	66
	6/30/2015	34,396	58,648	79,116	145,314	100	100	66
	6/30/2014	32,779	50,062	71,753	129,429	100	100	65
	6/30/2013	31,918	43,498	64,569	112,100	100	100	57
	6/30/2012	29,975	39,856	59,095	97,691	100	100	47
	6/30/2011	28,468	35,166	56,247	90,437	100	100	48
	6/30/2010	26,592	32,383	54,880	85,151	100	100	48
	6/30/2009	23,800	29,536	38,820	81,177	100	100	72
MPORS	6/30/2018	43,686	374,355	193,014	413,608	100	99	0
	6/30/2017	42,364	346,374	173,832	386,259	100	99	0
	6/30/2016	38,543	308,635	171,768	356,985	100	100	6
	6/30/2015	37,193	297,235	162,758	328,025	100	98	0
	6/30/2014	36,950	276,306	161,052	298,722	100	95	0
	6/30/2013	34,778	267,540	147,725	262,678	100	85	0
	6/30/2012	34,687	248,260	144,310	234,025	100	80	0
	6/30/2011	32,906	239,176	129,298	221,669	100	79	0
	6/30/2010	30,986	229,057	120,350	217,545	100	81	0
	6/30/2009	28,693	212,169	104,399	214,345	100	88	0
FURS	6/30/2018	45,908	353,334	148,999	429,095	100	100	20
	6/30/2017	44,351	331,701	146,236	397,633	100	100	15
	6/30/2016	43,046	292,423	131,203	365,259	100	100	23
	6/30/2015	41,278	274,505	126,051	333,629	100	100	14
	6/30/2014	38,805	260,538	119,670	300,949	100	100	1
	6/30/2013	36,441	248,723	111,606	263,483	100	91	0
	6/30/2012	34,790	235,553	106,868	233,121	100	84	0
	6/30/2011	33,089	219,842	102,257	219,959	100	85	0
	6/30/2010	31,422	207,715	96,326	213,755	100	88	0
	6/30/2009	28,561	194,949	82,725	209,775	100	93	0
VFCA	6/30/2018		25,061	21,245	38,321	N/A	100	62
	6/30/2017		24,509	21,363	36,955	N/A	100	58
	6/30/2016		22,884	21,126	35,302	N/A	100	59
	6/30/2015		22,161	22,157	33,405	N/A	100	51
	6/30/2014		18,888	19,088	31,281	N/A	100	65
	6/30/2013		18,612	19,218	28,294	N/A	100	50
	6/30/2012		17,465	18,681	26,531	N/A	100	49
	6/30/2011		16,483	18,712	26,183	N/A	100	52
	6/30/2010		15,846	18,665	26,575	N/A	100	57
	6/30/2009		14,498	19,050	27,239	N/A	100	67

Active member accounts are not applicable. Members are unpaid volunteers.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Solvency Test¹

(in thousands)

System	Valuation Date ²	Aggregate Accrued Liabilities for				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Reported Asset		
		1	2	3	1		2	3	
		Active Member Accounts	Disabled Members	Active Members (ER Financed Portion)					
PERS-DCRP	6/30/2018	N/A	\$ 507	\$ 3,847	\$ 4,455	100%	100%	103%	
DISABILITY OPEB	6/30/2017	N/A	215	3,752	3,457	100	100	86	
	6/30/2016	N/A	401	3,190	3,118	100	100	85	
	6/30/2015	N/A	405	2,830	2,781	100	100	84	
	6/30/2013	N/A	294	2,421	2,184	100	100	78	

¹ This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

² The actuarial valuation for the PERS-DCRP Disability OPEB is performed on an annual basis. There were two years between the first two valuations due to the timing of the first valuation.

The last actuarial valuation was performed as of June 30, 2018.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Funding Progress for PERS- OPEB DCRP Disability OPEB¹

(in thousands)

System	Actuarial Valuation Date ²	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio %	Covered Payroll	UAAL as a Percentage of Covered Payroll
PERS-DCRP							
DISABILITY OPEB	6/30/2018	\$ 4,455	\$ 4,354	\$ (101)	102.32%	\$ 139,066	(0.07)%
	6/30/2017	3,457	3,967	510	87.14	129,158	0.39
	6/30/2016	3,118	3,591	473	86.83	114,883	0.41
	6/30/2015	3,781	3,235	454	85.97	113,750	0.40
	6/30/2013	2,184	2,715	531	80.44	90,128	0.59

¹ This schedule is intended to show 10 years of information. Additional years will be displayed as they become available.

² The actuarial valuation for the PERS-DCRP Disability OPEB is performed on an annual basis. There were two years between the first two valuations due to the timing of the first valuation.

The last actuarial valuation was performed as of June 30, 2018.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Funding Progress

(in thousands)

System	Actuarial Valuation Date	Actuarial Value of Assets ¹ (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)
PERS-DBRP	6/30/2018	\$ 5,705,236	\$ 7,730,084	\$ 2,024,848	73.81%	\$ 1,230,105	164.61%
	6/30/2017	5,514,027	7,578,385	2,064,358	72.76	1,232,067	167.55
	6/30/2016	5,247,685	6,787,923	1,540,238	77.31	1,185,646	129.91
	6/30/2015	4,926,516	6,470,303	1,543,787	76.14	1,154,867	133.68
	6/30/2014	4,595,805	6,177,505	1,581,700	74.40	1,129,109	140.08
	6/30/2013	4,139,921	5,160,951	1,021,030	80.22	1,104,000	92.48
	6/30/2012	3,816,920	5,661,281	1,844,361	67.42	1,081,288	170.57
	6/30/2011	3,800,479	5,410,144	1,609,665	70.25	1,071,376	150.24
	6/30/2010	3,889,890	5,241,819	1,351,929	74.21	1,083,780	124.74
	6/30/2009	4,002,212	4,792,819	790,607	83.50	1,043,215	75.79
JRS	6/30/2018	101,192	62,741	(38,451)	161.29	7,291	(527.38)
	6/30/2017	97,066	58,104	(38,962)	167.06	6,974	(558.68)
	6/30/2016	91,152	54,754	(36,398)	166.48	6,920	(525.99)
	6/30/2015	84,934	51,901	(33,033)	163.65	6,525	(506.26)
	6/30/2014	78,463	50,600	(27,863)	155.07	6,355	(438.47)
	6/30/2013	70,323	49,236	(21,087)	142.82	6,276	(336.00)
	6/30/2012	63,195	46,190	(17,005)	136.81	6,193	(274.60)
	6/30/2011	61,274	43,414	(17,860)	141.13	5,645	(316.38)
	6/30/2010	61,277	42,513	(18,765)	144.13	5,687	(329.95)
	6/30/2009	61,929	41,848	(20,081)	147.98	5,110	(392.99)
HPORS	6/30/2018	147,144	229,822	82,678	64.03	15,251	542.12
	6/30/2017	141,236	219,470	78,234	64.35	14,779	529.36
	6/30/2016	133,869	203,326	69,457	65.84	15,276	454.68
	6/30/2015	125,676	192,983	67,307	65.12	14,549	462.62
	6/30/2014	117,226	183,400	66,174	63.92	14,149	467.69
	6/30/2013	105,736	175,594	69,858	60.22	13,484	518.08
	6/30/2012	96,655	167,824	71,169	57.59	13,618	522.62
	6/30/2011	95,274	155,742	60,468	61.17	12,472	484.83
	6/30/2010	97,204	151,177	53,973	64.30	13,036	414.03
	6/30/2009	99,652	137,815	38,163	72.31	11,425	334.03
SRS	6/30/2018	353,904	436,715	82,811	81.04	77,587	106.73
	6/30/2017	332,169	411,387	79,218	80.74	74,581	106.22
	6/30/2016	310,510	373,146	62,636	83.21	70,593	88.73
	6/30/2015	288,269	348,912	60,643	82.62	68,046	89.12
	6/30/2014	264,945	326,077	61,132	81.25	64,673	94.53
	6/30/2013	235,310	304,185	68,875	77.36	61,467	112.05
	6/30/2012	211,535	284,559	73,024	74.34	59,583	122.56
	6/30/2011	203,689	266,506	62,817	76.43	57,041	110.12
	6/30/2010	200,739	246,734	45,995	81.36	54,681	84.11
	6/30/2009	200,690	223,893	23,203	89.64	51,457	45.09

Expressing actuarial value of assets as a percentage of the actuarial accrued liability provides one indication of the plan's funding status on a going-concern basis. Analysis of this percentage over time indicates whether the plan is becoming financially stronger or weaker. Generally, the greater the funded ratio, the stronger the plan.

¹ Refer to the "Notes to the Required Supplementary Information" for the Actuarial Asset Valuation Method (Page 102).

ACTUARIAL SECTION

System	Actuarial Valuation Date	Actuarial Value of Assets ¹ (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)
GWPORS	6/30/2018	\$ 190,849	\$ 230,077	\$ 39,228	82.95%	\$ 50,823	77.19%
	6/30/2017	176,311	217,642	41,331	81.01	49,381	83.70
	6/30/2016	160,555	191,007	30,452	84.06	47,108	64.64
	6/30/2015	145,314	172,160	26,846	84.41	44,885	59.81
	6/30/2014	129,429	154,595	25,166	83.72	41,637	60.44
	6/30/2013	112,100	139,985	27,885	80.08	39,471	70.65
	6/30/2012	97,691	128,927	31,236	75.77	38,317	81.52
	6/30/2011	90,437	119,881	29,444	75.44	38,306	76.87
	6/30/2010	85,151	113,855	28,704	74.79	39,436	72.79
	6/30/2009	81,177	92,155	10,978	88.09	36,023	30.48
MPORS	6/30/2018	413,608	611,056	197,448	67.69	52,036	379.44
	6/30/2017	386,259	562,570	176,311	68.66	48,604	362.75
	6/30/2016	356,985	518,946	161,961	68.79	47,234	342.90
	6/30/2015	328,025	497,186	169,161	65.98	45,736	369.87
	6/30/2014	298,722	474,308	175,586	62.98	44,427	395.23
	6/30/2013	262,678	450,043	187,365	58.37	42,796	437.81
	6/30/2012	234,025	427,257	193,232	54.77	41,745	462.89
	6/30/2011	221,669	401,381	179,712	55.23	39,470	455.30
	6/30/2010	217,545	380,393	162,848	57.19	37,220	437.52
	6/30/2009	214,345	345,261	130,916	62.08	34,687	377.42
FURS	6/30/2018	429,095	548,241	119,146	78.27	47,935	248.56
	6/30/2017	397,633	522,288	124,655	76.13	45,208	275.74
	6/30/2016	365,259	466,671	101,412	78.27	43,119	235.19
	6/30/2015	333,629	441,834	108,205	75.51	41,627	259.94
	6/30/2014	300,949	419,013	118,064	71.82	39,892	295.96
	6/30/2013	263,483	396,769	133,286	66.41	37,963	351.10
	6/30/2012	233,121	377,211	144,090	61.80	36,177	398.30
	6/30/2011	219,959	355,188	135,229	61.93	34,852	388.01
	6/30/2010	213,755	335,463	121,708	63.72	33,339	365.06
	6/30/2009	209,775	306,236	96,460	68.50	30,160	319.83
VFCA	6/30/2018	38,321	46,306	7,984	82.76	N/A	N/A
	6/30/2017	36,955	45,871	8,917	80.56	N/A	N/A
	6/30/2016	35,302	44,010	8,708	80.21	N/A	N/A
	6/30/2015	33,405	44,318	10,913	75.38	N/A	N/A
	6/30/2014	31,281	37,975	6,694	82.37	N/A	N/A
	6/30/2013	28,294	37,830	9,536	74.79	N/A	N/A
	6/30/2012	26,531	36,146	9,615	73.40	N/A	N/A
	6/30/2011	26,183	35,195	9,012	74.39	N/A	N/A
	6/30/2010	26,576	34,512	7,936	77.01	N/A	N/A
	6/30/2009	27,226	33,548	6,322	81.16	N/A	N/A

Covered payroll is not applicable to VFCA because members are unpaid volunteers.

ACTUARIAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Summary of Actuarial (Gain)/Loss by Source

(in thousands)

	PERS DBRP	JRS	HPORS	SRS
Investment (Gain) or Loss	\$ 52,271.5	\$ 727.8	\$ 1,129.0	\$ 2,426.5
Liability (Gain) or Loss				
Salary (Gain) or Loss	(167,094.3)	276.6	(381.8)	(165.6)
Retirement (Gain) or Loss	(101,162.2)	(234.7)	1,690.0	(1,693.8)
Disability (Gain) or Loss	290.2	(6.8)	143.9	(31.8)
Death In-Service (Gain) or Loss	(232.3)	(40.6)	(33.6)	(89.4)
Withdrawal (Gain) or Loss	45,703.4	1,548.7	136.3	(180.4)
Death after Retirement (Gain) or Loss	(23,269.2)	(4.2)	(55.9)	419.6
New Participant / Data Adjustment	98,159.5	1,009.6	1,005.5	4,495.7
Other (Gain) or Loss	13,540.2	(10.2)	2.9	(41.1)
Total Actuarial (Gain) or Loss	\$ (81,793.2)	\$ 3,266.2	\$ 3,636.3	\$ 5,139.7

	GWPORS	MPORS	FURS	VFCA
Investment (Gain) or Loss	\$ 1,126.5	\$ 3,237.8	\$ 3,244.7	\$ 384.5
Liability (Gain) or Loss				
Salary (Gain) or Loss	(2,967.0)	(7,444.1)	(1,906.7)	
Retirement (Gain) or Loss	(2,132.4)	3,057.2	941.1	(592.8)
Disability (Gain) or Loss	(219.3)	996.4	970.2	
Death In-Service (Gain) or Loss	(22.4)	(880.9)	(231.4)	9.1
Withdrawal (Gain) or Loss	(412.2)	542.3	(196.9)	324.5
Death after Retirement (Gain) or Loss	244.1	(2,878.5)	(1,125.5)	(23.0)
New Participant / Data Adjustment	1,148.9	25,681.8	684.3	177.0
Other (Gain) or Loss	(14.1)	2,450.9	(12.7)	(7.4)
Total Actuarial (Gain) or Loss	\$ (3,247.9)	\$ 24,762.9	\$ 2,367.1	\$ 271.9

The last actuarial valuation was performed as of June 30, 2018.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Summary of Actuarial (Gain)/Loss by Source

(in thousands)

	PERS-DCRP Disability OPEB
Investment (Gain) or Loss	\$ (492.6)
Liability (Gain) or Losses:	
Salary (Gain) or Loss	(230.0)
Retirement (Gain) or Loss	(22.8)
Disability (Gain) or Loss	102.3
Death In-Service (Gain) or Loss	5.9
Withdrawal (Gain) or Loss	(21.4)
Death after Retirement (Gain) or Loss	(73.6)
New Participant /Data Adjustment (Gain) or Loss	150.7
Other (Gain) or Loss	(1.8)
Total Actuarial (Gain) or Loss	\$ (583.3)

The last actuarial valuation was performed as of June 30, 2018.

Public Employees’ Retirement Board

A Component Unit of the State of Montana

Summary of Defined Benefit Retirement Plans’ Provisions as of June 30, 2018

Provisions and terms common to all PERB’s defined benefit retirement plans, except for the Volunteer Firefighters’ Compensation Act (VFCA).

Service credit	<ul style="list-style-type: none"> • Service credit is used to determine the amount of a member’s retirement benefit. • One month of service credit is earned for each month the member is paid for 160 hours. This includes certain transferred and purchased service.
Membership service	<ul style="list-style-type: none"> • Membership service is used to determine eligibility for vesting, retirement or other benefits. • One month of membership service is earned for any month member contributions are made, regardless of the number of hours worked. • Eligible members in all systems may purchase service that counts toward membership service. • Additionally, eligible active and inactive Sheriffs' Retirement System (SRS) members may purchase 1 for 5 (additional) service that will count as membership service.
Contributions	<ul style="list-style-type: none"> • Member contributions are made through an “employer pickup” arrangement which results in deferral of taxes on the contributions.
Compensation	<ul style="list-style-type: none"> • Compensation generally means all remuneration paid, excluding certain allowances, benefits, and lump sum payments. Compensation is specifically defined in law and differs amongst the systems. • Bonuses paid on or after July 1, 2013 to any member will not be treated as compensation for retirement purposes. No member or employer contributions will be paid on bonuses.
Withdrawal of member contributions	<ul style="list-style-type: none"> • A member is eligible for a withdrawal of their member contributions when they terminate service and are either not eligible for or have not taken a retirement benefit. • The member receives their accumulated member contributions, which consists of member contributions and regular interest. • Upon receipt of a refund of accumulated contributions, a member’s vested right to a monthly benefit is forfeited.
Member contributions interest credited	<ul style="list-style-type: none"> • Interest is credited to member accounts at the rates determined by the Board. • The current interest rate credited to member accounts is 0.77%.

Provisions and terms common to all Plans (continued)

<p>Working Retiree Limitations - for HPORS, SRS, GWPORS, FURS and MPORS</p>	<p>Applies to retirement system members who return on or after July 1, 2017 to covered employment in the system from which they retired. These limits already applied to SRS members before July 1, 2017.</p> <ul style="list-style-type: none"> • Members who return for less than 480 hours in a calendar year: <ul style="list-style-type: none"> ◦ need not become an active member in the system; and ◦ are subject to a \$1 reduction in their retirement benefit for each \$3 earned in excess of \$5,000 in the calendar year. • Members who return for 480 or more hours in a calendar year: <ul style="list-style-type: none"> ◦ must become an active member of the system; ◦ will stop receiving a retirement benefit from the system; and ◦ will be eligible for a second retirement benefit if they earn 5 or more years of service credit through their second employment. • Employee, employer and state contributions apply as follows: <ul style="list-style-type: none"> ◦ Employer contributions and state contributions (if any) must be paid on all working retirees; ◦ Employee contributions must be paid on working retirees who return to covered employment for 480 or more hours in a calendar year. • NOTE: PERS has its own limits.
<p>Second Retirement Benefit - for HPORS, SRS, GWPORS, FURS, and MPORS</p>	<p>Applies to retirement system members who return on or after July 1, 2017 to active service covered by the system from which they retired.</p> <ul style="list-style-type: none"> • If the member works more than 480 hours in a calendar year and accumulates less than 5 years of service credit before terminating again, the member: <ul style="list-style-type: none"> ◦ is not awarded service credit for the period of reemployment; ◦ is refunded the accumulated contributions associated with the period of reemployment; ◦ starting the first month following termination of service, receives the same retirement benefit previously paid to the member; and ◦ does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA in January immediately following second retirement.

ACTUARIAL SECTION

Provisions and terms common to all Plans (continued)

Second Retirement Benefit - for HPORS, SRS, GWPORS, FURS, and MPORS (continued)	<ul style="list-style-type: none">• If the member works more than 480 hours in a calendar year and accumulates at least 5 years of service credit before terminating again, the member:<ul style="list-style-type: none">◦ is awarded service credit for the period of reemployment;◦ starting the first month following termination of service, receives:<ul style="list-style-type: none">* the same retirement benefit previously paid to the member; and* a second retirement benefit for the period of reemployment calculated based on the laws in effect as of the members' rehire date; and◦ does not accrue post-retirement benefit adjustments during the term of reemployment but receives a GABA:<ul style="list-style-type: none">* on the initial retirement benefit in January immediately following second retirement; and* on the second retirement benefit starting in January after receiving that benefit for at least 12 months.• A member who returns to covered service is not eligible for a disability benefit.
Refunds	<ul style="list-style-type: none">• Terminating members eligible to retire may, in lieu of receiving a monthly retirement benefit, refund their accumulated contributions in a lump sum.• Terminating members with accumulated contributions between \$200 and \$1,000 who wish to rollover their refund must do so within 90 days of termination of service.• Trusts, estates, and charitable organizations listed as beneficiaries are entitled to receive only a lump sum payment.
Lump-sum payouts	<ul style="list-style-type: none">• Effective July 1, 2017, lump sum payouts in all systems are limited to the member's accumulated contributions rather than the present value of the member's benefit.

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ACTUARIAL SECTION

Public Employees' Retirement System-DBRP

Type of Plan	<ul style="list-style-type: none"> Multiple-employer cost sharing
Membership eligibility	<ul style="list-style-type: none"> Employees of the State and local governments that have contracted for PERS coverage. Certain employees of the university system and school districts, not covered by a separate retirement system governed by Title 19 of the Montana Code Annotated.
Member contributions	<ul style="list-style-type: none"> 7.9% of member's compensation. Temporary 1% increase for all members effective July 1, 2011. Reduced to 6.9% when amortization period drops below 25 years and remains below 25 years following the termination of the temporary 1% increase and the additional employer contribution rate.
Employer contributions	<ul style="list-style-type: none"> 8.57% of each member's compensation for state and university. Reduced when amortization period drops below 25 years and remains below 25 years following the termination of the additional employer contribution rate and the member's temporary 1% increase. 8.47% of each member's compensation for local governments 8.2% of each member's compensation for school districts Contribution going into the PERS Defined Benefit Plan is reduced by 0.04% of compensation paid into the Educational Fund. Employers who hire PERS retirees who work less than 960 hours in the calendar year in a PERS-covered position, but do not become active members, contribute the employer's contribution rate on the working retiree's compensation.
State contributions	<ul style="list-style-type: none"> 0.1% of compensation from the State for local governments 0.37% of compensation from State for School Districts Contributions are also made to the system from the State General Fund through a statutory appropriation.
Compensation period used in benefit calculation	<ul style="list-style-type: none"> HAC = Highest Average Compensation Hired prior to July 1, 2011: HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid by member. Hired on or after July 1, 2011: HAC is average of the highest 60 consecutive months (or shorter period of total service) of compensation paid to member. Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC.
Service retirement eligibility	<p>Members hired prior to July 1, 2011:</p> <ul style="list-style-type: none"> Age 60, 5 years membership service Age 65, regardless of membership service Any age, 30 years of membership service <p>Members hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> Age 65, 5 years of membership service Age 70, regardless of service

Service retirement benefit formula	<p>Members hired prior to July 1, 2011:</p> <ul style="list-style-type: none"> • Less than 25 years of membership service: 1.785% of HAC x years of service credit • 25 years or more of membership service: 2% of HAC x years of service credit • OR, if greater than either of the above: the actuarial equivalent of 2 times the member's regular contributions and interest plus the actuarial equivalent of any additional contributions and interest. <p>Members hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> • Less than 10 years of membership service: 1.5% of HAC x years of service credit • Between 10 and 30 years of membership service: 1.785% of HAC x years of service credit • 30 years or more of membership service: 2% of HAC x years of service credit • OR, if greater than any of the above: the actuarial equivalent of 2 times the member's regular contributions and interest plus the actuarial equivalent of any additional contributions and interest.
Second retirement benefit	<p>Members who retire before January 1, 2016, return to PERS-covered employment, and accumulate less than 2 years of additional service credit receive:</p> <ul style="list-style-type: none"> • A refund of the member's contributions plus regular interest; • No service credit for second employment; • The same benefit amount starting the month following termination; and • The member's Guaranteed Annual Benefit Adjustment (GABA) increasing again in January immediately following the member's second retirement. <p>Members who retire before January 1, 2016 and return to PERS-covered employment for at least 2 years of additional service credit receive:</p> <ul style="list-style-type: none"> • A re-calculated retirement benefit based on provisions in effect after member's initial retirement; and • GABA on member's re-calculated benefit starting in January after receiving the re-calculated benefit for 12 months. <p>Members who retire on or after January 1, 2016, return to PERS service, and accumulate less than 5 years of additional service credit receive:</p> <ul style="list-style-type: none"> • A refund of a member's contributions plus regular interest; • No service credit for second employment; • The same benefit amount starting the month following termination; and • The member's GABA increasing again in January immediately following the member's second retirement.

ACTUARIAL SECTION

PERS-DBRP (continued)

Second retirement benefit (continued)	<p>Members who retire on or after January 1, 2016, return to PERS service, and accumulate 5 or more years of additional service credit receive:</p> <ul style="list-style-type: none"> • The same retirement benefit paid immediately prior to member's return to service; • A second retirement benefit for member's second period of service based on laws in effect upon the member's rehire date; and • The member's GABA on both benefits starting in January after receiving the original and new benefit for 12 months.
Early retirement eligibility	<p>Members hired prior to July 1, 2011:</p> <ul style="list-style-type: none"> • Age 50 with 5 years of membership service; or • Any age under age 60 with 25 years of membership service <p>Members hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> • Age 55 with 5 years of membership service.
Early retirement benefit formula	<p>Members hired prior to July 1, 2011 and</p> <ul style="list-style-type: none"> • who retire prior to October 1, 2011 <p>The actuarial equivalent of the accrued portion of the service retirement benefit that would have been payable to the member commencing at age 60 or upon completion of 30 years of membership service. The service retirement benefit is reduced by a factor resulting from multiplying 0.5% (for first five years from service retirement eligibility) and 0.3% (for six to 10 years from service retirement eligibility) by the number of months by which the retirement date precedes the date at which the member would have attained age 60 or completed 30 years of membership service.</p> <ul style="list-style-type: none"> • who retire on or after October 1, 2011 <p>The actuarial equivalent of the accrued portion of the service retirement benefit that would have been payable to the member commencing at age 60 or upon completion of 30 years of membership service. The service retirement benefit must be reduced using actuarially equivalent factors based on the most recent valuation.</p> <p>Members hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> • The actuarial equivalent of the accrued portion of the service retirement benefit that would have been payable to the member commencing at age 65. The service retirement benefit must be reduced using actuarially equivalent factors based on the most recent valuation.
Disability eligibility and benefit formula	<ul style="list-style-type: none"> • 5 years of membership service <p>If hired on or before February 24, 1991 and did not make a contrary election, the greater of:</p> <ul style="list-style-type: none"> • (90% of 1.785% of HAC) x service credit, or • 25% of HAC

Disability eligibility and benefit formula (continued)	<p>If hired after February 24, 1991 and prior to July 1, 2011, or hired on or before February 24, 1991 and so elected:</p> <ul style="list-style-type: none"> • Less than 25 years of membership service: 1.785% of HAC x service credit, or • At least 25 years of membership service: 2% of HAC x service credit <p>If hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> • Less than 10 years of membership: 1.5% of HAC x years of service credit • Between 10 and 30 years of membership service: 1.785% of HAC x years of service credit • 30 years or more of membership service: 2% of HAC x years of service credit
Survivor's benefit eligibility	<p>Member's status at time of death:</p> <ul style="list-style-type: none"> • active; • receiving disability benefit for less than six months; • continuously disabled without receiving a disability benefit; or • inactive
Death payment benefit formula	<ul style="list-style-type: none"> • Accumulated contributions + (monthly compensation x lesser of years of service credit or 6) + interest until benefit paid. • A survivor of an inactive member who was inactive for more than 6 months will receive only accumulated contributions and interest from the date of death until payment. • A survivor may elect to receive the payment as a non-increasing annuity that is the actuarial equivalent of the death payment amount.
Survivor benefit formula	<p>Members hired prior to July 1, 2011:</p> <ul style="list-style-type: none"> • The survivorship benefit payable to a vested member's survivor is: <ul style="list-style-type: none"> ◦ the actuarial equivalent of the member's accrued retirement benefit at the time of death; or, • If the member dies prior to age 50 or 25 years of membership service: <ul style="list-style-type: none"> ◦ the actuarial equivalent of the accrued portion of the early retirement benefit that would have been paid to the member at age 50. <p>Members hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> • The survivorship benefit payable to an active vested member's survivor is: <ul style="list-style-type: none"> ◦ the actuarial equivalent of the member's accrued retirement benefit at the time of death; or • If the member dies prior to age 55: <ul style="list-style-type: none"> ◦ the actuarial equivalent of the accrued portion of the early retirement benefit that would have been paid to the member at age 55.

ACTUARIAL SECTION

PERS-DBRP (continued)

Vesting eligibility and benefit	<ul style="list-style-type: none"> • 5 years of membership service • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.
Retirement benefits - Form of payment	<p>Option 1, the normal form of payment is a single life annuity with a refund of any remaining account balance to a designated beneficiary. Optional Benefits:</p> <ul style="list-style-type: none"> • Option 2, a life annuity and joint 100% survivor benefit, • Option 3, a life annuity and joint 50% survivor benefit, and • Option 4, a life annuity with a period certain. <p>If a retiring member selects Option 2 or 3 and the contingent annuitant predeceases or is divorced from the member, the retiree may, within 18 months of the death or divorce, choose to revert to the higher Option 1 benefit available at retirement or the retiree may select a different contingent annuitant and/or a different option.</p>
Post retirement benefit increases	<p>For retired members hired before July 1, 2013 who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made January 1 of each year equal to:</p> <ul style="list-style-type: none"> • 3% for members hired before July 1, 2007, and • 1.5% for members hired on or after July 1, 2007 and prior to July 1, 2013. <p>For retired members who were hired on or after July 1, 2013 and who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made January 1 of each year equal to:</p> <ul style="list-style-type: none"> • A maximum of 1.5% for each year PERS is funded at or above 90%, subject to a 0.1% reduction for each 2% PERS is funded below 90%; or • 0% whenever the amortization period for PERS is 40 years or more.
Changes since last valuation	<ul style="list-style-type: none"> • None

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ACTUARIAL SECTION

PERS-DCRP Disability OPEB

Type of Plan	<ul style="list-style-type: none"> Multiple-employer cost sharing OPEB
Membership eligibility	<ul style="list-style-type: none"> Employees of the State and local governments that have contracted for PERS coverage. Certain employees of the university system and school districts, not covered by a separate retirement system governed by Title 19 of Montana Code Annotated. Employees must have elected to be a member of the defined contribution retirement plan.
Member contributions	<ul style="list-style-type: none"> None
Employer contributions	<ul style="list-style-type: none"> 0.30% of each eligible member's compensation, for those employers with employees participating in the PERS-DCRP
Compensation period used in benefit calculation	<ul style="list-style-type: none"> HAC = Highest Average Compensation Hired prior to July 1, 2011: HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid by member. Hired on or after July 1, 2011: HAC is average of the highest 60 consecutive months (or shorter period of total service) of compensation paid to member. Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC
Disability eligibility and benefit	<ul style="list-style-type: none"> 5 years membership service <p>For members hired on or before June 30, 2011, or hired on or before February 24, 1991 and so elected:</p> <ul style="list-style-type: none"> Less than 25 years of membership service: 1.785% of HAC multiplied by service credit, or At least 25 years of membership service: 2% of HAC multiplied by service credit; and Benefit is payable to the later of age 65 or for five years. <p>For members hired on or after July 1, 2011:</p> <ul style="list-style-type: none"> Between 5 and 10 years of membership service: 1.5% of HAC x years of service credit; or Between 10 and 30 years of membership service: 1.785% of HAC x years of service credit; or 30 years of membership service or more: 2% of HAC x years of service credit; and Benefit is payable to age 70 for disabilities occurring prior to age 65, or no more than five years for disabilities occurring after age 65.

Disability eligibility and benefit (continued)	Members cannot receive distributions from their individual defined contribution account while receiving payments from the PERS-DCRP Disability OPEB. Participants may choose to receive a distribution from their individual account instead of applying for and receiving a disability benefit.
Survivor's benefit	<ul style="list-style-type: none"> • Disability benefits cease after death of a member, and their beneficiary is entitled to the member's vested defined contribution account balance.
Form of payment	<ul style="list-style-type: none"> • Normal form of payment is an annuity • No other forms of payment are available
Post retirement benefit increases	<ul style="list-style-type: none"> • None
Changes since last valuation	<ul style="list-style-type: none"> • None

ACTUARIAL SECTION

Judges' Retirement System

Type of plan	<ul style="list-style-type: none"> • Single-employer defined benefit
Membership eligibility	<ul style="list-style-type: none"> • Judges of district courts • Justices of supreme court • Chief water judge • Associate water judge (effective July 1, 2011)
Member contributions	<ul style="list-style-type: none"> • 7% of member's compensation
Employer contributions	<ul style="list-style-type: none"> • 25.81% of each member's compensation
Compensation period used in benefit calculation	<ul style="list-style-type: none"> • Current salary or HAC = Highest Average Compensation • Hired prior to July 1, 1997, and did not elect GABA, benefits are calculated using current salary of the office from which the member retired. • Hired on or after July 1, 1997, or hired prior to July 1, 1997 and elected GABA, benefits are calculated using HAC, the average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to the member. • Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC.
Service retirement eligibility and benefit	<ul style="list-style-type: none"> • Age 60 with 5 years of membership service • First 15 years of service credit: 3½% per year of current salary or HAC, and • After 15 years of service credit: 1.785% per year of current salary or HAC
Disability eligibility and benefit	<p>Non-duty disability:</p> <ul style="list-style-type: none"> • 5 years membership service • Regular disability benefit: Actuarial equivalent of the normal retirement benefit available at the time of disability. <p>Duty-related disability:</p> <ul style="list-style-type: none"> • Any amount of membership service • Duty-related disability benefit: Greater of 50% of current salary or 50% of HAC
Survivor's eligibility and benefit	<p>Duty-related death:</p> <ul style="list-style-type: none"> • Active or retired member • Member's service retirement benefit on the date of the death. <p>Non-duty-related death:</p> <ul style="list-style-type: none"> • Vested member • Refund of the member's accumulated contributions, or • Actuarial equivalent of the member's service retirement benefit on date of death.

Survivor's eligibility and benefit (continued)	<ul style="list-style-type: none"> For retired members without a contingent annuitant, a payment will be made to the member's designated beneficiary equal to the accumulated contributions reduced by any retirement benefits already paid.
Vesting eligibility and benefit	<ul style="list-style-type: none"> 5 years of membership service Accrued normal retirement benefit, payable when eligible for retirement. In lieu of a pension, a member may receive a refund of accumulated contributions. Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.
Retirement benefits - Form of payment	<p>Option 1, the normal form of payment is a single life annuity with a refund of any remaining accumulated contributions (account balance) to a designated beneficiary.</p> <p>Optional Benefits:</p> <ul style="list-style-type: none"> Option 2, a life annuity and joint 100% survivor benefit, Option 3, a life annuity and joint 50% survivor benefit, and Option 4, a life annuity with a period certain. <p>If a retiring member selects Option 2 or 3 and the contingent annuitant predeceases or is divorced from the member, the retiree may, within 18 months of the death or divorce, choose to revert to the higher Option 1 benefit available at retirement or the retiree may select a different contingent annuitant and/or a different option.</p>
Post retirement benefit increases	<ul style="list-style-type: none"> For retired members who have been retired for at least 12 months and who were either hired after June 30, 1997 or hired prior to July 1, 1997 and elected GABA, a GABA will be made January 1 of each year equal to 3%. For retired members who were hired prior to July 1, 1997 and did not elect GABA, the current salary of an active member in the same position is used to recalculate the monthly benefit.
Changes since last valuation	<ul style="list-style-type: none"> None

ACTUARIAL SECTION

Highway Patrol Officers' Retirement System

Type of plan	<ul style="list-style-type: none"> • Single-employer defined benefit
Membership eligibility	<ul style="list-style-type: none"> • All members of the Montana highway patrol including supervisors and assistant supervisors
Member contributions	<ul style="list-style-type: none"> • 13% of member's compensation, not covered by GABA • 13.05% of member's compensation, covered by GABA
Employer contributions	<ul style="list-style-type: none"> • 28.15% of member's compensation
State contributions	<ul style="list-style-type: none"> • 10.18% of each member's compensation paid from the General Fund
Compensation period used in benefit calculation	<ul style="list-style-type: none"> • HAC = Highest Average Compensation • HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to member. • Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC.
Service retirement eligibility and benefit	<ul style="list-style-type: none"> • 20 years of membership service • 2.6% of HAC x years of service credit
Early retirement eligibility and benefit	<ul style="list-style-type: none"> • Hired prior to July 1, 2013: Any age with 5 years of membership service; if discontinued from service other than for cause. • Hired on or after July 1, 2013: Any age with 10 years of membership service; if discontinued from service other than for cause. • Early retirement benefit calculated using HAC and service credit at early retirement, and reduced to the actuarial equivalent of a service retirement benefit based on a retirement age of 60.
Disability eligibility and benefit	<p>Duty-related disability:</p> <ul style="list-style-type: none"> • Any active member • Less than 20 years of membership service: 50% of HAC, or • 20 years or more of membership service: 2.6% of HAC x years of service credit <p>Regular disability:</p> <ul style="list-style-type: none"> • Any vested member • The actuarial equivalent of the service retirement benefit based on retirement age of 60.
Survivor's eligibility and benefit	<p>Duty-related deaths:</p> <ul style="list-style-type: none"> • Active member • A monthly survivor benefit to the surviving spouse or dependent child: 50% of member's HAC.

<p>Survivor's eligibility and benefit (continued)</p>	<p>Non-duty-related death:</p> <ul style="list-style-type: none"> • Active or inactive member • Member's spouse will receive (or equally to dependent children if there is no surviving spouse or after a surviving spouse dies, for as long as they remain dependent children) the actuarial equivalent of the early retirement benefit. • For retired members without a surviving spouse or dependent child, the member's designated beneficiary will receive a payment equal to the retired member's accumulated contributions reduced by any retirement benefits already paid.
<p>Vesting eligibility and benefit</p>	<ul style="list-style-type: none"> • Hired prior to July 1, 2013: 5 years of membership service • Hired on or after July 1, 2013: 10 years of membership service. • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.
<p>Retirement benefits - Form of payment</p>	<ul style="list-style-type: none"> • The retirement benefit is paid for the retired member's life. • Upon the death of the retired member, the benefit is paid to the surviving spouse. • If there is no surviving spouse, or after the death of a surviving spouse, benefits are paid to the dependent children, if any, for as long as they remain dependent children.
<p>Post retirement benefit increases</p>	<ul style="list-style-type: none"> • For retired members who either became active members on or after July 1, 1997 and before July 1, 2013, or who were hired before July 1, 1997 and elected to be covered under GABA, and who have been retired at least 12 months, a GABA will be paid each year in January equal to 3%. • For retired members who were hired prior to July 1, 1997 or did not elect GABA, the minimum monthly benefit provided is not less than 2% x service credit x the current base compensation of a probationary highway patrol officer. Such benefit may not exceed 60% of the current base compensation of a probationary highway patrol officer and the annual increase may not exceed 5% of the current benefit. • For retired members who became active members on or after July 1, 2013, and who have been retired at least 36 months, a GABA will be paid each year in January equal to 1.5%. • For non-GABA members who retired prior to July 1, 1991 and meet eligibility requirements, a supplemental lump sum payment will be made each year based on the increase in the Consumer Price Index.

Highway Patrol Officers' Retirement System (continued)

Changes since last valuation	<ul style="list-style-type: none"> • None
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HPORS Deferred Retirement Option Plan (DROP) _____

Effective October 1, 2015, eligible members of the Highway Patrol Officers' Retirement System (HPORS) have the opportunity to participate in the DROP. The DROP allows active HPORS members to begin accumulating their retirement benefit, without terminating employment, for up to 60 months. If a member chooses to join the DROP, their monthly retirement benefit and their employee contributions will go into their individual DROP account.

Eligibility	<ul style="list-style-type: none"> • Active members of HPORS with at least 20 years of membership service.
Period	<ul style="list-style-type: none"> • Minimum of one month up to a maximum of five years. The member will not earn additional membership service or service credit.
Member contributions	<ul style="list-style-type: none"> • While a member is working, the member's contributions go into the DROP Participant's DROP Account.
Member contributions interest credited	<ul style="list-style-type: none"> • A member's DROP account will earn an interest rate equal to the actuarial assumed rate of return. Currently the rate of return is 7.65%.
Employer contributions	<ul style="list-style-type: none"> • While a member is working, the member's employer and the State will pay the regular contributions to HPORS.
Terminate employment	<ul style="list-style-type: none"> • When the member terminates employment at the end of the DROP Period the member will begin receiving the HPORS monthly retirement benefit. At this time, members will receive the DROP Benefit as a lump sum payment or a direct rollover to another eligible retirement plan (as allowed by the IRS). If the member does not designate a distribution method within 60 days after termination of employment, the DROP Benefit will be paid in a taxable lump sum. • If a member's HPORS-covered employment is terminated during the DROP Period, the DROP Benefit will be distributed to the member and payment of the monthly service retirement benefit will begin.
Disability	<ul style="list-style-type: none"> • If the member becomes disabled during the DROP Period, the member will not be eligible for HPORS disability benefits. If the member terminates service, the service retirement benefit will be paid to the member rather than to the monthly DROP Account. The member will also be eligible to receive the DROP Benefit.

Survivor Benefit	<ul style="list-style-type: none"> • If a member dies before the end of the DROP Period, the member’s surviving spouse or dependent children are entitled to the member’s DROP Benefit and the benefit they would have received had the member retired. • If the member does not have a surviving spouse or dependent children, the member’s designated beneficiary receives the balance of the member’s retirement account and a lump-sum payment of the member’s DROP Benefit.
Benefit	<ul style="list-style-type: none"> • A member may continue to work after the DROP Period ends and remain vested in HPORS. The member will not receive the service retirement benefit or the DROP Benefit during the time the member continues working. The balance of the DROP Account will continue to earn interest. • Upon termination of employment, the member will receive the initial HPORS monthly retirement benefit; an additional benefit based on the member’s service credit and highest average compensation earned after DROP participation; and the DROP Benefit.
Post retirement benefit increases	<ul style="list-style-type: none"> • Members do not receive the Guaranteed Annual Benefit Adjustment (GABA) on the accrued DROP retirement benefit. GABA starts January 1 immediately following retirement for initial and subsequent retirement benefits.
Changes since last valuation	<ul style="list-style-type: none"> • None

ACTUARIAL SECTION

Sheriff s' Retirement System

Type of plan	<ul style="list-style-type: none"> Multiple-employer cost sharing
Membership eligibility	<ul style="list-style-type: none"> Sheriffs Investigators Detention officers
Member contributions	<ul style="list-style-type: none"> 10.495% of member's compensation (effective July 1, 2017)
Employer contributions	<ul style="list-style-type: none"> 13.115% of each member's compensation (effective July 1, 2017)) Rate increased 0.29% from 9.535% to 9.825% on July 1, 2007, then to 10.115% on July 1, 2009, and then to present rate 13.115% on July 1, 2017. SRS employee contributions will return to 9.245% and SRS employer contributions will return to 9.535% when reducing the employee contribution and terminating the additional employer contributions will not cause the amortization period to exceed 25 years. Beginning July 1, 2013, employers of retirees who return to work in a position working less than 480 hours contribute 13.115% of the working retiree's compensation.
Compensation period used in benefit calculation	<ul style="list-style-type: none"> HAC = Highest Average Compensation Hired prior to July 1, 2011: HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to member. Hired on or after July 1, 2011: HAC is average of the highest 60 consecutive months (or shorter period of total service) of compensation paid to member. Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC.
Service retirement eligibility and benefit formula	<ul style="list-style-type: none"> 20 years of membership service 2.5% of HAC x years of service credit
Early retirement eligibility and benefit	<ul style="list-style-type: none"> Age 50 with 5 years of membership service Normal retirement benefit calculated using HAC and service credit at early retirement, and reduced to the actuarial equivalent commencing at the earliest of age 60 or the attainment of 20 years of membership service.
Disability retirement eligibility and benefit formula	<p>Non-duty-related disability:</p> <ul style="list-style-type: none"> Active or inactive vested member 5 years membership service The actuarial equivalent of the accrued normal retirement benefit available at time of disability.

<p>Disability retirement eligibility and benefit formula (continued)</p>	<p>Duty-related disability:</p> <ul style="list-style-type: none"> • Vested or non-vested active member • Any membership service • Less than 20 years of membership service: 50% of HAC, or • 20 years or more of membership service: 2.5% of HAC x years of service credit
<p>Survivor's eligibility and benefit formula</p>	<p>Duty-related death:</p> <ul style="list-style-type: none"> • Vested or non-vested active member • Lump-sum payment of the member's accumulated contributions; or • A monthly survivor benefit to the designated beneficiary equal to the greater of: <ul style="list-style-type: none"> ◦ 50% of HAC; or ◦ 2.5% of HAC for each year of service credit if over 20 years. <p>Non-duty-related death:</p> <ul style="list-style-type: none"> • Active or Inactive member • Lump-sum payment of the member's accumulated contributions; or • A monthly survivor benefit equal to 2.5% of HAC for each year of service credit actuarially reduced from age 60 or from the date when 20 years of membership service would have been completed, whichever provides the greater benefit. <ul style="list-style-type: none"> • For retired members without a contingent annuitant, a payment will be made to the designated beneficiary equal to the accumulated contributions reduced by any retirement benefits already paid.
<p>Vesting eligibility and benefit</p>	<ul style="list-style-type: none"> • 5 years of membership service • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.
<p>Retirement benefits - Form of payment</p>	<p>Option 1, the normal form of payment is a single life annuity with a refund of any remaining accumulated contributions (account balance) to a designated beneficiary.</p> <p>Optional Benefits:</p> <ul style="list-style-type: none"> • Option 2, a life annuity and joint 100% survivor benefit, • Option 3, a life annuity and joint 50% survivor benefit, and • Option 4, a life annuity with a period certain.

ACTUARIAL SECTION

Sheriffs' Retirement System (continued)

Retirement benefits - Form of payment (continued)	If a retiring member selects Option 2 or 3 and the contingent annuitant predeceases or is divorced from the member, the retiree may, within 18 months of the death or divorce, choose to revert to the higher Option 1 benefit available at retirement or the retiree may select a different contingent annuitant and/or a different option.
Post retirement benefit increases	For retired members who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made each year equal to: <ul style="list-style-type: none">• 3% for members hired before July 1, 2007, and• 1.5% for members hired on or after July 1, 2007
Changes since last valuation	<ul style="list-style-type: none">• None

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ACTUARIAL SECTION

Game Wardens' and Peace Officers' Retirement System

Type of plan	<ul style="list-style-type: none"> Multiple-employer cost sharing
Membership eligibility	<ul style="list-style-type: none"> Game wardens Warden supervisor State peace officers
Member contributions	<ul style="list-style-type: none"> 10.56% of member's compensation
Employer contributions	<ul style="list-style-type: none"> 9.0% of each member's compensation
Compensation period used in benefit calculation	<ul style="list-style-type: none"> HAC = Highest Average Compensation Hired prior to July 1, 2011: HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to member. Hired on or after July 1, 2011: HAC is average of the highest 60 consecutive months (or shorter period of total service) of compensation paid to member. Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC.
Service retirement eligibility and benefit formula	<ul style="list-style-type: none"> Age 50 with 20 years of membership service 2.5% of HAC x years of service credit
Early retirement eligibility and benefit	<ul style="list-style-type: none"> Age 55 with 5 years of membership service A reduced retirement benefit calculated using the HAC and service credit at early retirement.
Disability retirement eligibility and benefit formula	<p>Duty-related disability:</p> <ul style="list-style-type: none"> Vested active member 5 years of membership service Less than 20 years of membership service: 50% of HAC, or 20 years or more of membership service: 2.5% of HAC x years of service credit <p>Regular disability:</p> <ul style="list-style-type: none"> Vested member The actuarial equivalent of the accrued normal retirement benefit at the time of disability.
Survivor's eligibility and benefit formula	<p>Duty-related deaths: (active member), a monthly survivor benefit to the designated beneficiary equal to:</p> <ul style="list-style-type: none"> 25 years or less of membership service: 50% of HAC, or More than 25 years of membership service: 2.5% of HAC x years of service credit.

<p>Survivor’s eligibility and benefit formula (continued)</p>	<p>Non-duty-related deaths:</p> <ul style="list-style-type: none"> • Active or inactive member • Lump-sum refund of the member’s accumulated contributions; or • Actuarial equivalent of the service benefit. <ul style="list-style-type: none"> • Effective July 1, 2017, beneficiaries of GWPORS members who die prior to retirement are eligible for either a lump-sum benefit or a monthly survivor benefit. The monthly survivor benefit may be paid out as an option 1, 2, 3 or 4, at the survivor’s discretion. Previously, statute provided for lump-sum payments only.
<p>Vested eligibility and benefit</p>	<ul style="list-style-type: none"> • 5 years of membership service • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member’s vested right to a monthly benefit is forfeited.
<p>Retirement benefits - Form of payment</p>	<p>Option 1, the normal form of payment is a single life annuity with a refund of any remaining accumulated contributions (account balance) to a designated beneficiary.</p> <p>Optional Benefits:</p> <ul style="list-style-type: none"> • Option 2, a life annuity and joint 100% survivor benefit, • Option 3, a life annuity and joint 50 % survivor benefit, and • Option 4, a life annuity with a period certain. <p>If a retiring member selects Option 2 or 3 and the contingent annuitant predeceases or is divorced from the member, the retiree may, within 18 months of the death or divorce, choose to revert to the higher Option 1 benefit available at retirement or the retiree may select a different contingent annuitant and/or a different option.</p>
<p>Post retirement benefit increases</p>	<p>For retired members who have been retired at least 12 months, a Guaranteed Annual Benefit Adjustment (GABA) will be made each year in January equal to:</p> <ul style="list-style-type: none"> • 3% for members hired before July 1, 2007, and • 1.5% for members hired on or after July 1, 2007
<p>Changes since last valuation</p>	<ul style="list-style-type: none"> • None

ACTUARIAL SECTION

Municipal Police Officers' Retirement System

Type of plan	<ul style="list-style-type: none"> Multiple-employer cost sharing
Membership eligibility	<ul style="list-style-type: none"> Police officers of first- and second-class cities, and Police officers of other cities that adopt the plan
Member contributions	<p>Members not electing GABA:</p> <ul style="list-style-type: none"> Hired after June 30, 1975 but on or before June 30, 1979: 7.0% of member's compensation Hired after June 30, 1979 but before July 1, 1997: 8.5% of member's compensation Hired on or after July 1, 1997: 9.0% of member's compensation <p>Members electing GABA:</p> <ul style="list-style-type: none"> 9.0% of member's compensation
Employer contributions	<ul style="list-style-type: none"> 14.41% of each member's compensation
State contributions	<ul style="list-style-type: none"> 29.37% of each member's compensation
Compensation period used in benefit calculation	<ul style="list-style-type: none"> FAC = Final Average Compensation FAC is the average over the last 36 months (or shorter period of total service) of compensation paid to the member. Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's FAC.
Service retirement eligibility and benefit formula	<ul style="list-style-type: none"> Age 50 with 5 years of membership service, or Any age with 20 years of membership service 2.5% of FAC x years of service credit
Second retirement eligibility and benefit formula	<ul style="list-style-type: none"> Re-employed in a MPORS position prior to July 1, 2017 and at least age 50 <p>Re-calculated using criteria below:</p> <ul style="list-style-type: none"> Less than 20 years of membership service: <ol style="list-style-type: none"> Initial retirement benefit will cease; The retiree becomes a vested active MPORS member; The member must repay all initial benefits received plus interest at the actuarially assumed rate of return; The second retirement will be based on total MPORS service; and The member will be treated as a new retiree who after having been retired at least 12 months, will receive a 3% GABA each year in January. This applies only to members who were GABA members initially.

Second retirement eligibility and benefit formula (continued)	<ul style="list-style-type: none"> • More than 20 years of membership service: <ol style="list-style-type: none"> a. The initial retirement benefit will cease; b. The retiree becomes a vested active MPORS member; c. At second retirement the initial benefit resumes and a new benefit will be calculated on new service credit and FAC after re-employment; and d. The retiree will receive GABA on their first benefit in January immediately following second retirement but waits 12 months for GABA on the second retirement benefit. If not initially retired 12 months, the retiree will wait 12 months for GABA on both parts of benefit. This applies only to members who were GABA members initially.
Disability retirement eligibility and benefit formula	<ul style="list-style-type: none"> • Any active member • Before completing 20 years of membership service: 50% of FAC • After completing 20 years or more of membership service: 2.5% of FAC for each year of service credit
Survivor's eligibility and benefit formula	<ul style="list-style-type: none"> • Any active member • Before completing 20 years of membership service: 50% of member's FAC • After completing 20 years or more of membership service: 2.5% of member's FAC for each year of service credit • Benefits are paid to the surviving spouse (or equally to dependent children if there is no surviving spouse or after a surviving spouse dies, for as long as they remain dependent children). • In the absence of a spouse or child, the accumulated contributions minus any benefits already paid will be paid to the member's designated beneficiary.
Vesting eligibility and benefit	<ul style="list-style-type: none"> • 5 years of membership service • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.
Retirement benefits - Form of payment	<ul style="list-style-type: none"> • The normal form of payment is a life annuity, with 100% continuation after death to a surviving spouse. • If there is no surviving spouse, or after the death of a surviving spouse, benefits are paid to the dependent children, if any, for as long as they remain dependent children.

ACTUARIAL SECTION

Municipal Police Officers' Retirement System (continued)

Post retirement benefit increases	<ul style="list-style-type: none"> For retired members who became active members on or after July 1, 1997, or those who elected to be covered under GABA and who have been retired at least 12 months, a GABA will be made each year in January equal to 3%. For retired members who were hired prior to July 1, 1997 and who did not elect GABA, the minimum benefit adjustment provided may not be less than 50% of the current base compensation of a newly confirmed police officer of the employer that last employed the member as a police officer.
Changes since last valuation	<ul style="list-style-type: none"> None

MPORS Deferred Retirement Option Plan (DROP)

Eligibility	<ul style="list-style-type: none"> 20 years of membership service
DROP period	<ul style="list-style-type: none"> Maximum of five years. Member may not receive membership service or service credit during the DROP Period.
Contributions	<ul style="list-style-type: none"> State, employer and member contributions continue during the DROP Period and are made to the retirement system.
Disability	<ul style="list-style-type: none"> If a member becomes disabled during the DROP Period, the member will not be eligible for MPORS disability benefits. If the member must terminate service, the member's service retirement benefit will be paid to the member rather than to the member's monthly DROP Account. The member will also be eligible to receive the DROP Account.
Survivor benefit	<ul style="list-style-type: none"> If a member dies before the end of the DROP Period, the surviving spouse or dependent children are entitled to receive a lump-sum payment equal to the member's DROP Benefit and a survivorship benefit equal to the benefit the member would have received had the member retired rather than elected to participate in the DROP. If the member does not have a surviving spouse or dependent children, then the member's designated beneficiary receives the balance of the member's retirement account and a lump-sum payment of the member's DROP Benefit.

Survivor benefit (continued)	<ul style="list-style-type: none"> • The DROP Benefit paid must include interest credited to the participant’s account as follows: <ul style="list-style-type: none"> (a) through June 30, 2009, interest must be credited every fiscal year end at a rate reflecting the retirement system’s annual investment earnings for the applicable fiscal year. (b) after June 30, 2009, interest must be credited every fiscal year end at the actuarially assumed rate of return. Proportionate interest must be credited for distributions taking place at other than a fiscal year end.
DROP benefit	<ul style="list-style-type: none"> • Member receives DROP accruals equal to the retirement benefit calculated at DROP commencement and added each month during the DROP Period, including any post retirement adjustments (GABA), plus interest reflecting the retirement system’s annual investment earnings. • Effective July 1, 2009, the interest rate credited to DROP Accounts was changed to the actuarial assumed rate of 8%. • As a result of the experience study performed during fiscal year 2010, the interest rate credited to DROP Accounts was changed to the actuarial assumed rate of 7.75%. • As a result of the experience study performed during fiscal year 2017, the interest rate credited to DROP Accounts was changed to the actuarial assumed rate of 7.65%.
Changes in DROP since last valuation	<ul style="list-style-type: none"> • None

ACTUARIAL SECTION

Firefighters' Unified Retirement System

Type of plan	<ul style="list-style-type: none"> Multiple-employer cost sharing
Membership eligibility	<ul style="list-style-type: none"> Firefighters of first- and second-class cities Firefighters of other cities that adopt the plan Firefighters of rural fire district departments that adopt the plan Firefighters hired by the Montana Air National Guard (MANG) on or after October 1, 2001
Member contributions	<ul style="list-style-type: none"> Members hired before 7/1/1997 and not electing GABA: 9.5% of member's compensation Members hired on or after 7/1/1997 or electing GABA: 10.7% of member's compensation
Employer contributions	<ul style="list-style-type: none"> 14.36% of each member's compensation 14.36% of each working retiree's compensation
State contributions	<ul style="list-style-type: none"> 32.61% of each member's compensation 32.61% of each working retiree's compensation
Compensation period used in benefit calculation	<ul style="list-style-type: none"> HAC = Highest Average Compensation HAC is average of the highest 36 consecutive months (or shorter period of total service) of compensation paid to member. Part-time firefighter: 15% of regular compensation of a newly confirmed full-time firefighter. Hired on or after July 1, 2013: 110% annual cap on compensation considered as part of a member's HAC
Service retirement eligibility and benefit formula	<p>Member hired on or after July 1, 1981, or a member who has elected to be covered by GABA:</p> <ul style="list-style-type: none"> 20 years of membership service 2.5% of HAC x years of service credit <p>Member hired prior to July 1, 1981, and who had not elected to be covered by GABA, the greater of above, or:</p> <p>If membership service is less than 20 years:</p> <ul style="list-style-type: none"> 2% of highest monthly compensation (HMC) x years of membership service and <p>If membership service is greater or equal to 20 years:</p> <ul style="list-style-type: none"> 50% of HMC + 2% of HMC x years of membership service in excess of 20
Early retirement eligibility and benefit	<ul style="list-style-type: none"> Age 50 with 5 years of membership service Normal retirement benefit calculated using HAC and service credit at early retirement.
Disability retirement eligibility and benefit formula	<ul style="list-style-type: none"> Any active member The greater of: <ol style="list-style-type: none"> 50% of HAC, or 2.5% of HAC x years of service credit

<p>Survivor's eligibility and benefit formula</p>	<ul style="list-style-type: none"> • Any active or inactive member • For deaths of active members with less than 20 years of membership service, a monthly survivor benefit to the surviving spouse (or equally to dependent children if there is no surviving spouse or after a surviving spouse dies, for as long as they remain dependent children) equal to 50% of HAC. • For active or inactive members with more than 20 years of membership service, a benefit equal to the accrued retirement benefit at the date of death.
<p>Vesting eligibility and benefit</p>	<ul style="list-style-type: none"> • 5 years of membership service • Accrued normal retirement benefit, payable when eligible for retirement. • In lieu of a pension, a member may receive a refund of accumulated contributions. • Upon receipt of a refund of accumulated contributions, a member's vested right to a monthly benefit is forfeited.
<p>Retirement benefits - Form of payment</p>	<ul style="list-style-type: none"> • The retirement benefit is paid for the retired member's life. • Upon the death of the retired member, the benefit is paid to the surviving spouse. • If there is no surviving spouse, or after the death of a surviving spouse, benefits are paid to the dependent children, if any, for as long as they remain dependent children.
<p>Post retirement benefit increases</p>	<ul style="list-style-type: none"> • For retired members who were hired on or after July 1, 1997 and those who elected to be covered under GABA and who have been retired at least 12 months, a GABA will be paid each year in January equal to 3%. • For retired members who were hired prior to July 1, 1997 and who did not elect GABA, the minimum benefit adjustment is equal to 50% of the current base compensation of a newly confirmed active firefighter of the employer that last employed the member as a firefighter.
<p>Changes since last valuation</p>	<ul style="list-style-type: none"> • None

ACTUARIAL SECTION

Volunteer Firefighters' Compensation Act

Type of plan	<ul style="list-style-type: none"> Multiple-employer cost-sharing
Membership eligibility	<ul style="list-style-type: none"> Unpaid volunteer firefighters serving with qualified volunteer fire companies in unincorporated areas throughout the state.
Member contributions	<ul style="list-style-type: none"> No member contributions
State contributions	<ul style="list-style-type: none"> 5% of certain fire insurance premium taxes collected and passed through the general fund
Credit for service	<p>To receive a year of credit for service, a volunteer firefighter must:</p> <ul style="list-style-type: none"> serve with a single fire company for an entire fiscal year, and receive a minimum of 30 hours of training. Fractional years are not credited.
Normal retirement eligibility and benefit formula	<ul style="list-style-type: none"> Age 55 with 20 years of credit for service, or Age 60 with 10 years of credit for service \$8.75 per month x year of credit for service up to 20 years \$7.50 per month x year of credit for service after 20 years For VFCA members retiring prior to July 1, 2011, maximum credited service is 30 years VFCA members retiring on or after July 1, 2011, will receive \$7.50 per month for each additional year of credited service after 30 years in each year that the trust is actuarially sound and the amortization period is 20 years or less; otherwise benefits for the year will only be paid on credited service up to 30 years.
Duty-related disability retirement eligibility and benefit formula	<ul style="list-style-type: none"> Any current member on a fire company's roster The greater of: <ol style="list-style-type: none"> \$87.50 per month, or $(\\$8.75 \text{ per month} \times \text{year of credit for service up to 20 years}) + (\\$7.50 \text{ per month} \times \text{year of credit for service after 20 years up to 30 years of credit for service})$ \$7.50 per month for each additional year of credited service after 30 years in each year that the trust is actuarially sound and the amortization period is 20 years or less; otherwise benefits for the year will only be paid on credited service up to 30 years.
Survivor's eligibility and benefit formula	<ul style="list-style-type: none"> 10 years of credit for service or a retired member A monthly survivor benefit to the surviving spouse (or equally to dependent children if there is no surviving spouse or after a surviving spouse dies, for as long as they remain dependent children) equal to the full benefit otherwise payable to the member. Survivor benefits terminate when benefits have been paid for a total of 40 months, including any benefits paid to the retired member prior to death.
Changes since last valuation	<ul style="list-style-type: none"> None



Black Bears can range from black to brown and blond to cinnamon. They have a straight snout, with their highest point being at the rump instead of the shoulders, like the grizzly.

Photo courtesy of Roxanne Minnehan

SUMMARY OF STATISTICAL DATA

The pension funds are accounted for under the accrual basis of accounting. Information is provided for the last ten years ending June 30, 2018 for the following five objectives: financial trends, revenue capacity, debt capacity, demographic and economic trends, and operations.

Financial trends are presented on pages 208 to 227. The schedules contain trend information to help the reader understand how the plans' financial performance and well-being have changed over time. Net assets and liabilities are presented on pages 208 to 215. Actuarial liabilities are presented on pages 217 to 219 in graph format for all of the defined benefit retirement plans. The existence of unfunded actuarial liabilities is not necessarily an indication of financial problems but the trends are important and must be monitored and controlled.

Revenue capacity is presented on pages 220 to 227. These schedules contain information to help the reader assess the plans' revenue sources, fair values by investment type, and the contribution rate history since inception.

The schedules showing the History of Membership in the Retirement Plans are presented on pages 232 to 233.

Debt capacity is presented on pages 236 to 245. These schedules present information to help the reader assess the plans' current levels of outstanding debt and the plans' ability to issue additional debt in the future. Debt capacity is represented with benefit expenses and distributions and is followed by schedules of retired members, based on the type of benefit received.

Demographic and Economic information is presented on pages 246 to 259. These schedules offer demographic and economic indicators to help the reader understand the environment within which the plans' financial activities take place. On pages 258 and 259, the average monthly benefit is provided for each plan.

Operating information is presented on pages 260 to 270. These schedules contain pension plan data to help the reader understand how the information in the financial report relates to the pension plans the PERB administers. This information includes a schedule of employers participating in each of the plans.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Changes in Fiduciary Net Position, Last Ten Fiscal Years

(In thousands)

Fiscal Year	2018	2017	2016	2015	2014
PERS-DBRP					
Additions					
Member Contributions ¹	\$ 102,075	\$ 100,768	\$ 97,343	\$ 95,424	\$ 92,160
Employer Contributions ²	107,142	103,902	102,810	100,625	129,921
State Contributions	1,024	896	957	919	886
Investment Income ³	478,731	591,539	101,213	225,111	732,483
Other ⁴	33,635	27,861	29,843	33,547	
Total Additions to Net Position	722,607	824,966	332,166	455,626	955,450
Deductions					
Benefits	395,339	366,355	344,104	319,502	296,183
Refunds	12,619	12,252	10,379	11,688	10,070
Administrative Expenses ⁵	4,998	5,225	4,261	3,980	3,781
Other ⁴	2,993	1,621	1,501	2,211	1,488
Total Deductions to Net Position	415,949	385,453	360,245	337,381	311,522
Change in Net Position	\$ 306,658	\$ 439,513	\$ (28,079)	\$ 118,245	\$ 643,928
PERS-DCRP DISABILITY OPEB⁶					
Additions					
Employer Contributions	\$ 431	\$ 392	\$ 368	\$ 343	\$ 311
Investment Income ³	288	333	11	4	3
Total Additions to Net Position	719	725	379	347	314
Deductions					
Benefits	52	54	42	34	29
Administrative Expenses				1	
Total Deductions to Net Position	52	54	42	35	29
Change in Net Position	\$ 667	671	337	312	285
JRS					
Additions					
Member Contributions ¹	\$ 575	\$ 488	\$ 729	\$ 534	\$ 481
Employer Contributions	1,085	1,800	1,807	1,684	1,652
Investment Income ³	8,469	10,370	1,779	3,842	12,425
Total Additions to Net Position	10,129	12,658	4,315	6,060	14,558
Deductions					
Benefits	3,723	3,554	3,416	3,041	3,023
Refunds	149				
Administrative Expenses ⁵	265	255	200	138	100
Other ⁴					
Total Deductions to Net Position	4,137	3,809	3,616	3,179	3,123
Change in Net Position	\$ 5,992	\$ 8,849	\$ 699	\$ 2,881	\$ 11,435

Contributions were made in accordance with statutory requirements.

¹ Includes Interest Reserve Buybacks.

² Includes Membership Fees, Retirement Incentive, Miscellaneous Revenue, and Education Contributions.

³ Includes Common Stock Dividends.

⁴ Includes Transfers to the DC, MUS-RP, Prior Year Adjustments, Refunds to Other Plans, and Coal Tax Transfers.

⁵ Includes OPEB Expenses

⁶ Effective FY2014, the DCRP-Disability, included in the PERS-DCRP, was changed to PERS-DCRP Disability OPEB and reported as a Defined Benefit Plan.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	80,889	\$ 79,332	\$ 77,875	\$ 78,671	\$ 76,003
	81,836	80,049	79,173	80,326	75,949
	532	536	546	537	357
	505,052	91,355	715,398	387,861	(796,242)
	<u>668,309</u>	<u>251,272</u>	<u>872,992</u>	<u>547,395</u>	<u>(643,933)</u>
	274,021	252,762	231,223	212,186	196,402
	11,254	11,991	11,539	10,967	10,821
	3,843	3,386	3,327	3,257	2,948
	1,594	1,028	794	3,438	1,713
	<u>290,712</u>	<u>269,167</u>	<u>246,883</u>	<u>229,848</u>	<u>211,884</u>
\$	<u>377,597</u>	<u>\$ (17,895)</u>	<u>\$ 626,109</u>	<u>\$ 317,547</u>	<u>\$ (855,817)</u>
\$	288	\$ 273	\$ 262	\$ 265	\$ 245
	5	5	5	4	16
	<u>293</u>	<u>278</u>	<u>267</u>	<u>269</u>	<u>261</u>
	29	27	19	14	7
	<u>29</u>	<u>27</u>	<u>19</u>	<u>14</u>	<u>7</u>
\$	<u>264</u>	<u>\$ 251</u>	<u>\$ 248</u>	<u>\$ 255</u>	<u>\$ 254</u>
\$	742	\$ 447	\$ 504	\$ 595	\$ 584
	1,621	1,598	1,477	1,468	1,347
	8,409	1,517	11,392	6,013	(12,103)
	<u>10,772</u>	<u>3,562</u>	<u>13,373</u>	<u>8,076</u>	<u>(10,172)</u>
	2,553	2,344	2,240	2,118	1,972
	185	118	39	10	17
				24	
	<u>2,738</u>	<u>2,462</u>	<u>2,279</u>	<u>2,152</u>	<u>1,989</u>
\$	<u>8,034</u>	<u>\$ 1,100</u>	<u>\$ 11,094</u>	<u>\$ 5,924</u>	<u>\$ (12,161)</u>

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Changes in Fiduciary Net Position, Last Ten Fiscal Years (cont.)

(In thousands)

Fiscal Year	2018	2017	2016	2015	2014
HPORS					
Additions					
Member Contributions ¹	\$ 2,387	\$ 1,950	\$ 1,917	\$ 1,624	\$ 1,458
Employer Contributions ²	5,858	5,782	5,916	5,578	5,474
State Contributions ³	250	263	243	262	262
Investment Income ⁴	12,283	15,101	2,605	5,738	18,684
<i>Total Additions to Net Position</i>	20,778	23,096	10,681	13,202	25,878
Deductions					
Benefits	11,546	11,037	10,482	9,932	9,344
Refunds	322	245	94	69	84
Administrative Expenses ⁵	256	248	199	146	109
Other ⁶					15
<i>Total Deductions to Net Position</i>	12,124	11,530	10,775	10,147	9,552
<i>Change in Net Position</i>	\$ 8,654	\$ 11,566	\$ (94)	\$ 3,055	\$ 16,326
SRS					
Additions					
Member Contributions ¹	\$ 8,469	\$ 7,189	\$ 6,982	\$ 6,623	\$ 6,447
Employer Contributions ²	10,366	7,562	7,317	6,902	6,690
Investment Income ⁴	29,158	35,516	6,064	13,042	41,802
<i>Total Additions to Net Position</i>	47,993	50,267	20,363	26,567	54,939
Deductions					
Benefits	18,053	16,700	15,476	14,019	12,732
Refunds	1,490	1,383	1,029	1,217	1,185
Administrative Expenses ⁵	432	388	326	250	203
Other ⁶	64	33	75	44	27
<i>Total Deductions to Net Position</i>	20,039	18,504	16,906	15,530	14,147
<i>Change in Net Position</i>	\$ 27,954	\$ 31,763	\$ 3,457	\$ 11,037	\$ 40,792
GWPORS					
Additions					
Member Contributions ¹	\$ 5,512	\$ 5,278	\$ 5,036	\$ 4,924	\$ 4,462
Employer Contributions	4,613	4,464	4,278	4,088	3,762
Investment Income ⁴	15,573	18,592	3,167	6,435	20,075
<i>Total Additions to Net Position</i>	25,698	28,334	12,481	15,447	28,299
Deductions					
Benefits	6,523	5,810	5,068	4,550	3,979
Refunds	1,105	1,036	1,066	802	1,187
Administrative Expenses ⁵	369	329	272	203	161
Other ⁶	31		28		63
<i>Total Deductions to Net Position</i>	8,028	7,175	6,434	5,555	5,390
<i>Change in Net Position</i>	\$ 17,670	\$ 21,159	\$ 6,047	\$ 9,892	\$ 22,909

Contributions were made in accordance with statutory requirements.

¹ Includes Interest Reserve Buybacks.

² Includes Retirement Incentive and Miscellaneous Revenue.

³ Includes Percent of Salary.

⁴ Includes Common Stock Dividends.

⁵ Includes OPEB Expenses.

⁶ Includes Refunds to Other Plans and Prior Year Adjustments.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	1,337	\$ 1,299	\$ 1,270	\$ 1,262	\$ 1,035
	4,903	4,966	4,543	4,763	4,151
	274	269	278	287	285
	12,826	2,321	17,912	9,714	(19,978)
	<u>19,340</u>	<u>8,855</u>	<u>24,003</u>	<u>16,026</u>	<u>(14,507)</u>
	8,709	8,223	7,866	7,557	7,127
	51	65	121	56	26
	181	122	56	35	49
		3		37	17
	<u>8,941</u>	<u>8,413</u>	<u>8,043</u>	<u>7,685</u>	<u>7,219</u>
\$	<u>10,399</u>	<u>\$ 442</u>	<u>\$ 15,960</u>	<u>\$ 8,341</u>	<u>\$ (21,726)</u>
\$	5,838	\$ 5,694	\$ 5,831	\$ 5,336	\$ 5,207
	6,273	6,028	6,014	5,637	5,193
	28,154	5,109	37,539	19,470	(38,824)
	<u>40,265</u>	<u>16,831</u>	<u>49,384</u>	<u>30,443</u>	<u>(28,424)</u>
	11,583	10,379	9,237	8,277	7,858
	1,159	1,248	968	766	968
	287	207	121	97	115
	25	23		116	29
	<u>13,054</u>	<u>11,857</u>	<u>10,326</u>	<u>9,256</u>	<u>8,970</u>
\$	<u>27,211</u>	<u>\$ 4,974</u>	<u>\$ 39,058</u>	<u>\$ 21,187</u>	<u>\$ (37,394)</u>
\$	4,210	\$ 4,148	\$ 4,198	\$ 4,340	\$ 3,912
	3,576	3,470	3,523	3,612	3,292
	13,106	2,388	16,335	7,924	(15,133)
	<u>20,892</u>	<u>10,006</u>	<u>24,056</u>	<u>15,876</u>	<u>(7,929)</u>
	3,575	3,203	2,863	2,622	2,521
	841	1,227	993	879	840
	247	173	88	61	79
	23	15		59	
	<u>4,686</u>	<u>4,618</u>	<u>3,944</u>	<u>3,621</u>	<u>3,440</u>
\$	<u>16,206</u>	<u>\$ 5,388</u>	<u>\$ 20,112</u>	<u>\$ 12,255</u>	<u>\$ (11,369)</u>

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Changes in Fiduciary Net Position, Last Ten Fiscal Years (cont.)

(In thousands)

Fiscal Year	2018	2017	2016	2015	2014
MPORS					
Additions					
Member Contributions ¹	\$ 5,046	\$ 4,465	\$ 4,384	\$ 4,292	\$ 4,133
Employer Contributions	7,758	7,091	6,928	6,630	6,459
State Contributions ²	15,840	13,961	13,751	13,433	13,049
Investment Income ³	33,238	39,781	7,113	14,471	45,244
<i>Total Additions to Net Position</i>	61,882	65,298	32,176	38,826	68,885
Deductions					
Benefits	24,567	23,475	21,961	20,560	19,450
Refunds	2,675	1,043	1,240	2,179	1,018
Administrative Expenses ⁴	350	340	276	214	166
Other ⁵	53		129	5	60
<i>Total Deductions to Net Position</i>	27,645	24,858	23,606	22,958	20,694
<i>Change in Net Position</i>	\$ 34,237	\$ 40,440	\$ 8,570	\$ 15,868	\$ 48,191
FURS					
Additions					
Member Contributions ¹	\$ 5,315	\$ 4,925	\$ 4,752	\$ 4,710	\$ 4,698
Employer Contributions	7,053	6,501	6,163	6,100	5,767
State Contributions ²	16,127	14,438	13,970	13,573	13,007
Investment Income ³	34,285	40,844	7,312	14,640	45,478
<i>Total Additions to Net Position</i>	62,780	66,708	32,197	39,023	68,950
Deductions					
Benefits	23,863	22,336	20,896	19,745	18,872
Refunds	173	168	46	2	166
Administrative Expenses ⁴	329	321	262	192	153
Other ⁵					14
<i>Total Deductions to Net Position</i>	24,365	22,825	21,204	19,939	19,205
<i>Change in Net Position</i>	\$ 38,415	\$ 43,883	\$ 10,993	\$ 19,084	\$ 49,745
VFCA					
Additions					
State Contributions	\$ 2,212	\$ 2,065	\$ 2,036	\$ 1,914	\$ 1,818
Investment Income ³	3,127	3,837	622	1,480	4,817
<i>Total Additions to Net Position</i>	5,339	5,902	2,658	3,394	6,635
Deductions					
Benefits	2,944	2,858	2,623	2,369	2,281
Insurance Payments	11	6	12	11	14
Administrative Expenses ⁴	293	290	244	182	135
Other ⁵					
<i>Total Deductions to Net Position</i>	3,248	3,154	2,879	2,562	2,430
<i>Change in Net Position</i>	\$ 2,091	\$ 2,748	\$ (221)	\$ 832	\$ 4,205

Contributions were made in accordance with statutory requirements.

¹ Includes Interest Reserve Buybacks.

² Includes Percent of Salary.

³ Includes Common Stock Dividends.

⁴ Includes OPEB Expenses.

⁵ Includes Refunds to Other Plans and Prior Year Adjustments.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	4,029	\$ 6,055	\$ 3,580	\$ 4,141	\$ 3,186
	6,280	3,791	5,670	6,860	5,056
	12,573	12,274	11,594	10,932	10,186
	30,037	5,717	39,175	19,972	(40,908)
	<u>52,919</u>	<u>27,837</u>	<u>60,019</u>	<u>41,905</u>	<u>(22,480)</u>
	18,463	17,355	17,013	15,728	15,008
	1,833	707	1,000	849	794
	245	178	106	80	98
	5	3		149	62
	<u>20,546</u>	<u>18,243</u>	<u>18,119</u>	<u>16,806</u>	<u>15,962</u>
\$	<u>32,373</u>	<u>\$ 9,594</u>	<u>\$ 41,900</u>	<u>\$ 25,099</u>	<u>\$ (38,442)</u>
\$	4,253	\$ 4,123	\$ 3,748	\$ 4,419	\$ 3,701
	5,499	5,281	5,009	5,129	4,531
	12,358	11,797	11,365	10,872	9,832
	30,035	5,726	38,751	19,606	(39,421)
	<u>52,145</u>	<u>26,927</u>	<u>58,873</u>	<u>40,026</u>	<u>(21,357)</u>
	17,670	16,519	15,605	14,598	13,987
	73	119	128	86	69
	229	163	92	72	98
				85	
	<u>17,972</u>	<u>16,801</u>	<u>15,825</u>	<u>14,841</u>	<u>14,154</u>
\$	<u>34,173</u>	<u>\$ 10,126</u>	<u>\$ 43,048</u>	<u>\$ 25,185</u>	<u>\$ (35,511)</u>
\$	1,711	\$ 1,635	\$ 1,596	\$ 1,575	\$ 1,580
	3,383	592	4,793	2,566	(5,304)
	<u>5,094</u>	<u>2,227</u>	<u>6,389</u>	<u>4,141</u>	<u>(3,724)</u>
	2,819	2,046	1,938	1,857	1,780
	15	13	15	17	17
	206	144	81	58	59
				9	
	<u>3,040</u>	<u>2,203</u>	<u>2,034</u>	<u>1,941</u>	<u>1,856</u>
\$	<u>2,054</u>	<u>\$ 24</u>	<u>\$ 4,355</u>	<u>\$ 2,200</u>	<u>\$ (5,580)</u>

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Changes in Fiduciary Net Position, Last Ten Fiscal Years (cont.)

(In thousands)

Fiscal Year	2018	2017	2016	2015	2014
PERS-DCRP					
Additions					
Member Contributions	\$ 11,899	\$ 11,828	\$ 9,970	\$ 9,369	\$ 8,534
Employer Contributions	12,447	10,752	6,494	4,887	4,410
Investment Income ¹	19,602	22,368	1,428	6,316	18,367
Other ²	909	465	1,035	422	292
<i>Total Additions to Net Position</i>	44,857	45,413	18,927	20,994	31,603
Deductions					
Refunds	9,746	7,038	5,299	6,103	4,738
Administrative Expenses ³	754	836	671	586	558
Other ⁴	267	225	164	198	174
<i>Total Deductions to Net Position</i>	10,767	8,099	6,134	6,887	5,470
<i>Change in Net Position</i>	\$ 34,090	\$ 37,314	\$ 12,793	\$ 14,107	\$ 26,133
DEFERRED COMPENSATION PLAN					
Additions					
Member Contributions	\$ 22,850	\$ 23,770	\$ 21,916	\$ 20,379	\$ 24,255
Employer Contributions	93	77	63	103	81
Investment Income ¹	29,293	35,889	7,308	11,243	35,165
Other ⁵	600	587	195	263	191
<i>Total Additions to Net Position</i>	52,836	60,323	29,482	31,988	59,692
Deductions					
Refunds	29,303	27,329	20,193	24,219	24,250
Administrative Expenses ³	565	621	521	451	406
Other ⁴	898	846	427	457	458
<i>Total Deductions to Net Position</i>	30,766	28,796	21,141	25,127	25,114
<i>Change in Net Position</i>	\$ 22,070	\$ 31,527	\$ 8,341	\$ 6,861	\$ 34,578

¹ Fees paid to Transamerica, PIMCO, Voya, Prudential and State Street are included in the net investment sum.

² Includes Miscellaneous Revenues and Forfeitures remitted to MPERA to pay administrative costs.

³ Includes OPEB Expenses.

⁴ Fees paid to Empower for services provided.

⁵ Miscellaneous Revenue remitted to MPERA to pay administrative costs.

STATISTICAL SECTION

	2013		2012		2011		2010		2009
\$	6,943	\$	6,318	\$	6,100	\$	6,140	\$	5,723
	4,374		4,137		3,965		4,029		3,730
	11,684		2,352		12,698		6,122		(6,801)
	451		616		698		487		468
	23,452		13,423		23,461		16,778		3,120
	4,379		4,000		3,637		1,947		1,903
	585		493		426		416		411
	162		313		299		250		222
	5,126		4,806		4,362		2,613		2,536
\$	18,326	\$	8,617	\$	19,099	\$	14,165	\$	584
\$	20,297	\$	19,381	\$	19,072	\$	18,607	\$	19,661
	79		65		64		61		65
	21,219		13,913		36,906		37,203		(26,444)
	257		628		424		330		335
	41,852		33,987		56,466		56,201		(6,383)
	19,644		15,637		15,416		13,398		11,024
	445		357		288		277		318
	581		1,186		1,007		991		865
	20,670		17,180		16,711		14,666		12,207
\$	21,182	\$	16,807	\$	39,755	\$	41,535	\$	(18,590)

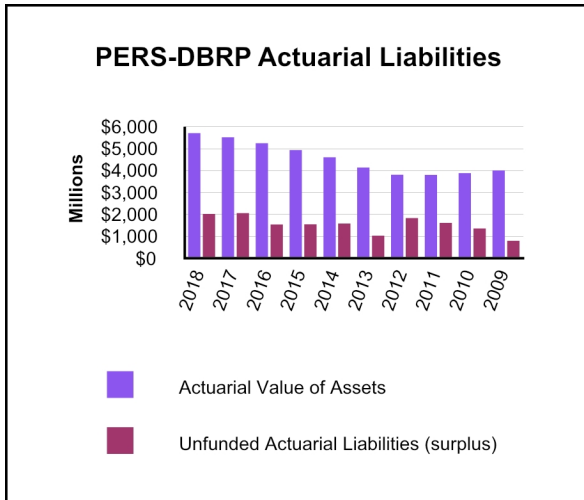
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Public Employees' Retirement Board

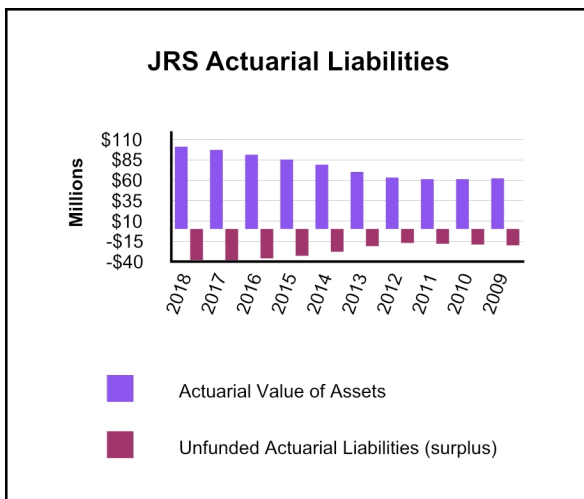
A Component Unit of the State of Montana

History of Actuarial Liabilities

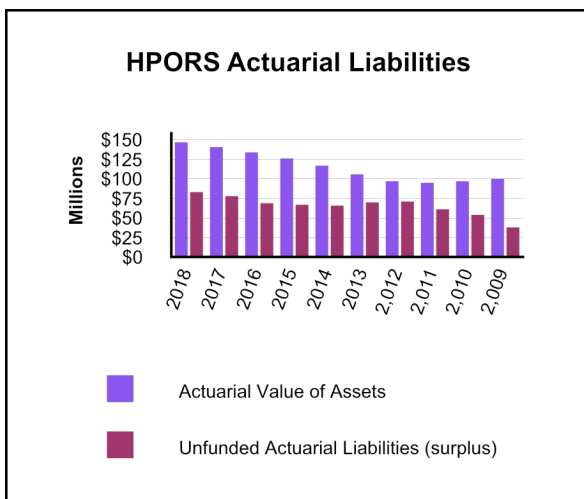
(in millions)



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$5,705	\$2,025
2017	5,514	2,064
2016	5,248	1,540
2015	4,927	1,544
2014	4,596	1,582
2013	4,140	1,021
2012	3,817	1,833
2011	3,801	1,610
2010	3,890	1,352
2009	4,002	791



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$101	\$(38)
2017	97	(39)
2016	91	(36)
2015	85	(33)
2014	79	(28)
2013	70	(21)
2012	63	(17)
2011	61	(18)
2010	61	(19)
2009	62	(20)



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$147	\$83
2017	141	78
2016	134	69
2015	126	67
2014	117	66
2013	106	70
2012	97	71
2011	95	61
2010	97	54
2009	100	38

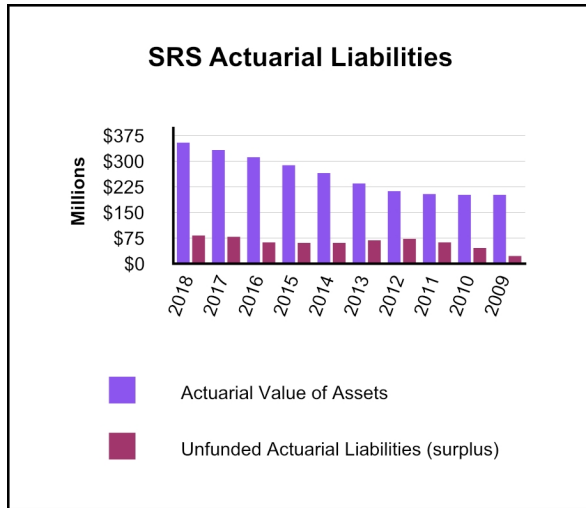
STATISTICAL SECTION

Public Employees' Retirement Board

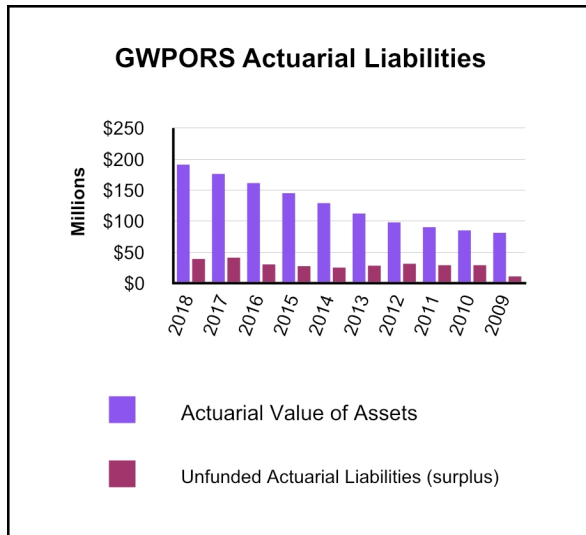
A Component Unit of the State of Montana

History of Actuarial Liabilities (cont.)

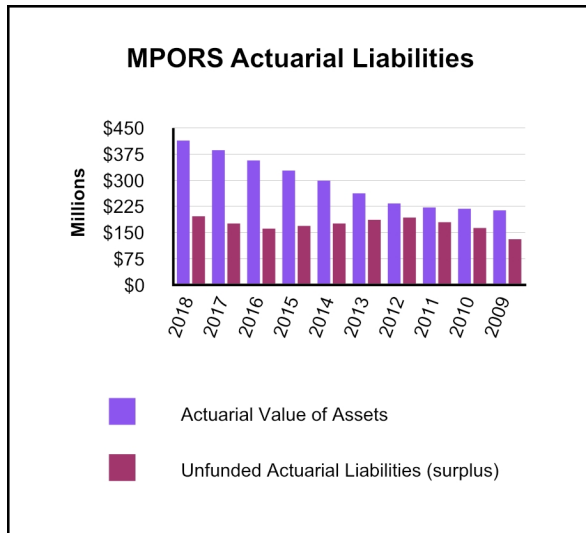
(in millions)



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$354	\$83
2017	332	79
2016	311	63
2015	288	61
2014	265	61
2013	235	69
2012	212	73
2011	204	63
2010	201	46
2009	201	23



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$191	\$39
2017	176	41
2016	161	30
2015	145	27
2014	129	25
2013	112	28
2012	98	31
2011	90	29
2010	85	29
2009	81	11



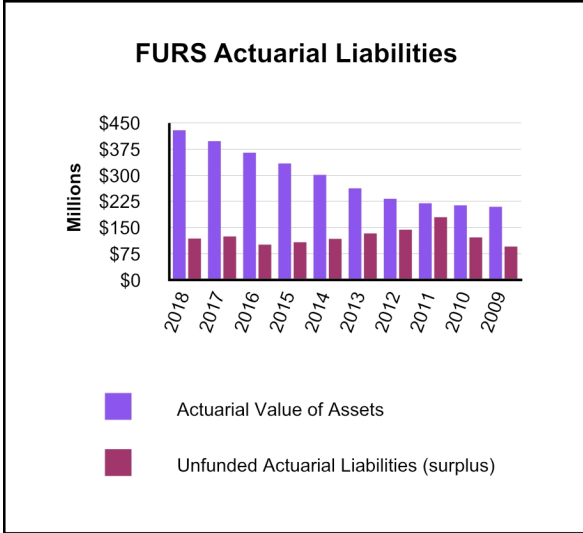
Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$414	\$197
2017	386	176
2016	357	162
2015	328	169
2014	299	176
2013	263	187
2012	234	193
2011	222	180
2010	218	163
2009	214	131

Public Employees' Retirement Board

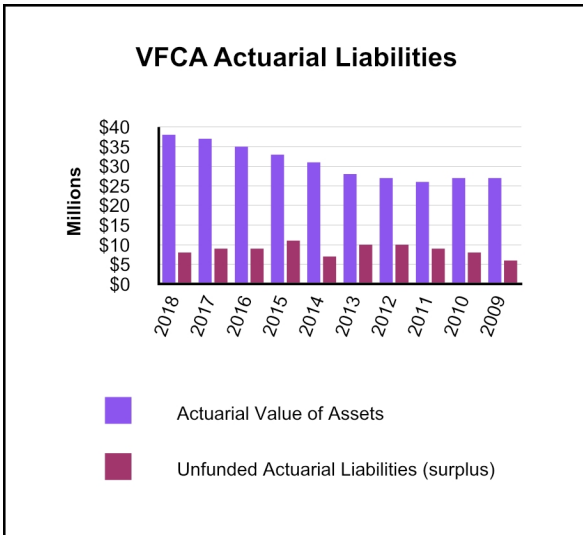
A Component Unit of the State of Montana

History of Actuarial Liabilities (cont.)

(in millions)



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$429	\$119
2017	398	125
2016	365	101
2015	334	108
2014	301	118
2013	263	133
2012	233	144
2011	220	180
2010	214	122
2009	210	96



Fiscal Year	Actuarial Value of Assets	Unfunded Actuarial Liabilities (surplus)
2018	\$38	\$8
2017	37	9
2016	35	9
2015	33	11
2014	31	7
2013	28	10
2012	27	10
2011	26	9
2010	27	8
2009	27	6

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Fair Market Values by Type of Investment, Last Ten Fiscal Years

(in thousands)

System	2018	2017	2016	2015	2014
PERS-DBRP¹					
CAPP Investment Pool ²	\$5,652,706	\$ 5,326,238			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 1,184,758	\$ 1,127,097	\$ 1,069,517
Montana Mortgages					
Short Term Investment Pool (STIP)	111,655	130,510	142,167	89,180	103,602
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			1,893,160	2,004,038	1,933,145
Montana International Equity Pool (MTIP)			774,561	837,968	877,318
Montana Private Equity Pool (MPEP)			559,719	539,912	517,873
<i>Alternative Investments:</i>					
Real Estate Investments (REI)					
Montana Real Estate Pool (MTRP)			463,582	445,360	426,528
Structured Investment Vehicles (SIV)				766	1,179
Total	\$ 5,764,361	\$ 5,456,748	\$ 5,017,947	\$ 5,044,321	\$ 4,929,162
PERS-DCRP DISABILITY OPEB³					
<i>Fixed Income:</i>					
Short Term Investment Pool (STIP)	\$ 309	\$ 287	\$ 265	\$ 2,738	\$ 2,427
<i>Alternative Investments:</i>					
Structured Investment Vehicles (SIV)				24	27
Pooled Investments at Cost	4,111	3,462	2,834		
Total	\$ 4,420	\$ 3,749	\$ 3,099	\$ 2,762	\$ 2,454
JRS					
CAPP Investment Pool ²	\$ 100,269	\$ 93,939			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 20,613	\$ 19,324	\$ 18,164
Short Term Investment Pool (STIP)	1,873	2,233	2,502	1,770	1,940
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			32,938	34,351	32,822
Montana International Equity Pool (MTIP)			13,477	14,358	14,901
Montana Private Equity Pool (MPEP)			9,738	9,255	8,796
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			8,066	7,640	7,251
Structured Investment Vehicles (SIV)				15	22
Total	\$ 102,142	\$ 96,172	\$ 87,334	\$ 86,713	\$ 83,896

¹ Does not include the Defined Benefit Education.

² Effective FY2017, the structure of plan investments was made more efficient by creating and utilizing a Consolidated Asset Pension Pool (CAPP) for all Defined Benefit Plans.

³ Effective FY2014, the DCRP-Disability, included in the PERS-DCRP, was changed to PERS-DCRP Disability OPEB and reported as a separate Defined Benefit Plan.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	950,298	\$ 974,139	\$ 969,119	\$ 939,430	\$ 876,390
				19,185	24,055
	54,005	33,708	59,256	56,727	27,140
	1,643,009	1,455,188	1,434,773	1,114,072	1,070,435
	712,587	621,887	727,765	552,712	494,790
	536,542	512,315	484,324	430,729	338,517
				8,963	8,937
	393,155	315,093	256,368	178,787	145,478
	710	547	1,023	3,640	2,619
\$	4,290,306	\$ 3,912,877	\$ 3,932,628	\$ 3,304,245	\$ 2,988,361

\$	16,034	\$ 16,031	\$ 15,497	\$ 15,034	\$ 14,019
	1,085	848	1,312	1,392	913
	27,759	23,933	23,098	17,608	16,507
	12,036	10,224	11,733	8,732	7,551
	9,064	8,428	7,788	6,725	5,224
	6,641	5,168	4,046	2,820	2,247
	14	14	23	89	83
\$	72,633	\$ 64,646	\$ 63,497	\$ 52,400	\$ 46,544

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Fair Market Values by Type of Investment, Last Ten Fiscal Years (cont.)

(in thousands)

System	2018	2017	2016	2015	2014
HPORS					
CAPP Investment Pool ¹	\$ 145,457	\$ 136,350			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 30,235	\$ 28,714	\$ 27,240
Short Term Investment Pool (STIP)	2,575	3,025	3,972	2,012	2,585
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			48,312	51,060	49,217
Montana International Equity Pool (MTIP)			19,766	21,346	22,336
Montana Private Equity Pool (MPEP)			14,284	13,757	13,184
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			11,830	11,349	10,862
Structured Investment Vehicles (SIV)				17	29
Total	\$ 148,032	\$ 139,375	\$ 128,399	\$ 128,255	\$ 125,453
SRS					
CAPP Investment Pool ¹	\$ 350,935	\$ 321,984			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 70,501	\$ 65,674	\$ 61,417
Short Term Investment Pool (STIP)	6,769	8,276	8,097	6,236	6,984
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			112,653	116,812	110,982
Montana International Equity Pool (MTIP)			46,091	48,818	50,346
Montana Private Equity Pool (MPEP)			33,307	31,447	29,720
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			27,586	25,966	24,475
Structured Investment Vehicles (SIV)				54	77
Total	\$ 357,704	\$ 330,260	\$ 298,235	\$ 295,007	\$ 284,001
GWPORS					
CAPP Investment Pool ¹	\$ 189,125	171,204			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 36,325	\$ 32,954	\$ 29,848
Short Term Investment Pool (STIP)	3,508	3,940	4,716	3,132	3,546
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			58,041	58,608	53,925
Montana International Equity Pool (MTIP)			23,748	24,481	24,482
Montana Private Equity Pool (MPEP)			17,161	15,792	14,481
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			14,213	13,014	11,906
Structured Investment Vehicles (SIV)				27	39
Total	\$ 192,633	\$ 175,144	\$ 154,204	\$ 148,008	\$ 138,227

¹ Effective FY2017, the structure of plan investments was made more efficient by creating and utilizing a Consolidated Asset Pension Plan (CAPP) for all Defined Benefit Plans.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	24,239	\$ 24,653	\$ 24,318	\$ 24,091	\$ 22,471
	1,355	847	1,521	1,461	774
	41,883	36,840	35,969	27,848	26,680
	18,165	15,732	18,258	13,815	12,387
	13,673	12,958	12,136	10,751	8,419
	10,031	7,963	6,313	4,466	3,613
	18	14	26	94	70
\$	109,364	\$ 99,007	\$ 98,541	\$ 82,526	\$ 74,414

\$	53,724	\$ 53,636	\$ 51,323	\$ 49,172	\$ 45,693
	3,986	2,715	4,719	4,473	2,370
	92,868	80,065	76,580	58,159	53,630
	40,321	34,234	38,871	28,703	24,673
	30,325	28,179	25,806	22,037	17,060
	22,245	17,308	13,434	9,259	7,311
	52	44	82	287	215
\$	243,521	\$ 216,181	\$ 210,815	\$ 172,090	\$ 150,952

\$	25,466	\$ 24,510	\$ 22,834	\$ 20,691	\$ 18,518
	1,896	1,476	2,257	2,548	1,514
	44,058	36,685	34,017	24,643	21,722
	19,106	15,697	17,252	12,513	10,000
	14,411	12,940	11,524	9,262	6,949
	10,600	8,036	6,003	3,954	2,981
	25	24	39	164	137
\$	115,562	\$ 99,368	\$ 93,926	\$ 73,775	\$ 61,821

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Fair Market Values by Type of Investment, Last Ten Fiscal Years (cont.)

(in thousands)

System	2018	2017	2016	2015	2014
MPORS					
CAPP Investment Pool ¹	\$ 393,802	\$ 360,476			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 77,621	\$ 71,807	\$ 66,377
Short Term Investment Pool (STIP)	7,757	9,147	9,642	5,189	6,007
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			124,032	127,640	119,961
Montana International Equity Pool (MTIP)			50,746	53,385	54,440
Montana Private Equity Pool (MPEP)			36,671	34,373	32,111
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			30,372	28,401	26,516
Structured Investment Vehicles (SIV)				45	67
Total	\$ 401,559	\$ 369,623	\$ 329,084	\$ 320,840	\$ 305,479
FURS					
CAPP Investment Pool ¹	\$ 408,718	\$ 371,014			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 79,532	\$ 72,899	\$ 66,856
Short Term Investment Pool (STIP)	8,155	9,430	9,563	5,972	6,327
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			127,086	129,543	120,837
Montana International Equity Pool (MTIP)			51,996	54,178	54,855
Montana Private Equity Pool (MPEP)			37,573	34,900	32,332
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			31,120	28,829	26,667
Structured Investment Vehicles (SIV)				51	70
Total	\$ 416,873	\$ 380,444	\$ 336,870	\$ 326,372	\$ 307,944
VFCA					
CAPP Investment Pool ¹	\$ 35,568	\$ 35,427			
<i>Fixed Income:</i>					
Retirement Funds Bond Pool (RFBP)			\$ 7,520	\$ 7,181	\$ 6,834
Short Term Investment Pool (STIP)	2,813	954	2,679	2,350	2,322
<i>Equities:</i>					
Montana Domestic Equity Pool (MDEP)			12,017	12,759	12,354
Montana International Equity Pool (MTIP)			4,917	5,339	5,603
Montana Private Equity Pool (MPEP)			3,553	3,439	3,297
<i>Alternative Investments:</i>					
Montana Real Estate Pool (MTRP)			2,943	2,840	2,726
Structured Investment Vehicles (SIV)				20	26
Total	\$ 38,381	\$ 36,381	\$ 33,629	\$ 33,928	\$ 33,162

¹ Effective FY2017, the structure of plan investments was made more efficient by creating and utilizing a Consolidated Asset Pension Plan (CAPP) for all Defined Benefit Plans.

STATISTICAL SECTION

	2013		2012		2011		2010		2009
\$	57,237	\$	56,431	\$	53,729	\$	51,742	\$	45,995
	2,819		1,472		2,593		2,305		920
	98,916		84,109		79,542		59,532		54,681
	42,936		35,975		40,334		29,350		25,207
	32,305		29,657		26,844		23,192		17,242
	23,681		18,220		13,981		9,547		7,437
	37		24		45		148		83
\$	257,931	\$	225,888	\$	217,068	\$	175,816	\$	151,565

\$	57,369	\$	56,219	\$	53,467	\$	50,657	\$	45,160
	3,077		1,632		2,766		2,649		1,268
	99,213		83,940		78,947		58,543		53,532
	43,017		35,869		40,044		29,067		24,862
	32,423		29,561		26,635		22,703		16,890
	23,771		18,175		13,869		9,403		7,260
	40		26		48		170		115
\$	258,910	\$	225,422	\$	215,776	\$	173,192	\$	149,087

\$	6,092	\$	6,373	\$	6,415	\$	6,379	\$	5,742
	1,949		1,704		1,655		1,385		1,571
	10,544		9,516		9,376		7,245		6,836
	4,559		4,066		4,753		3,567		3,140
	3,436		3,348		3,145		2,806		2,115
	2,491		2,057		1,637		1,124		898
	26		28		29		89		142
\$	29,097	\$	27,092	\$	27,010	\$	22,595	\$	20,444

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Fair Market Values by Type of Investment, Last Ten Fiscal Years (cont.)

(in thousands)

System	2018	2017	2016	2015	2014
PERS-DCRP¹					
<i>Fixed Income:</i>					
Short Term Investment Pool (STIP) ²	\$ 1,192	\$ 1,054	\$ 697	\$ 1,064	\$ 1,206
<i>Alternative Investments:</i>					
Defined Contributions Fixed Annuity	14,996	14,155	12,750	10,197	10,015
Defined Contributions Variable Annuity	210,638	177,998	141,300	131,649	117,713
Structured Investment Vehicles (SIV)				9	13
Total	\$ 226,826	\$ 193,207	\$ 154,747	\$ 142,919	\$ 128,947
DEFERRED COMPENSATION PLAN					
<i>Fixed Income:</i>					
Short Term Investment Pool (STIP) ²	\$ 2	\$ 29	\$ 189	\$ 659	\$ 944
<i>Alternative Investments:</i>					
Deferred Comp Fixed Annuity	226,331	238,058	238,995	232,527	235,981
Deferred Comp Variable Annuity	275,265	241,505	209,135	206,925	196,453
Deferred Comp Life Insurance	12	12	12	12	12
Structured Investment Vehicles (SIV)				6	11
Total	\$ 501,610	\$ 479,604	\$ 448,331	\$ 440,129	\$ 433,401

¹ Effective FY2014, the DCRP-Disability, included in the PERS-DCRP, was changed to PERS-DCRP Disability OPEB and reported as a separate Defined Benefit Plan.

² Effective FY2014, STIP was included as an investment option for the DCRP and Deferred Compensation plans.

STATISTICAL SECTION

2013	2012	2011	2010	2009
\$ 3,742	\$ 3,512	\$ 3,308	\$ 2,774	\$ 2,464
10,573	9,500	7,971	6,725	4,820
90,794	73,769	67,271	49,946	38,198
49	57	56	167	205
\$ 105,158	\$ 86,838	\$ 78,606	\$ 59,612	\$ 45,687
\$ 1,301	\$ 1,405	\$ 953	\$ 808	\$ 763
246,331	246,315	224,800	213,414	189,421
151,259	129,922	135,180	106,893	89,388
12	12	12	12	12
17	23	16	49	63
\$ 398,920	\$ 377,677	\$ 360,961	\$ 321,176	\$ 279,648

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Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Contribution Rate History

PERS-DBRP							
Fiscal Year	<u>State & Universities</u>		<u>Local Government</u>			<u>School Districts</u>	
	Member	Employer	Employer	State	Employer	State	
	Hired <07/01/11		Hired ≥ 07/01/11				
2018	7.900%	7.900%	8.570%	8.470%	0.100%	8.200%	0.370%
2017	7.900%	7.900%	8.470%	8.370%	0.100%	8.100%	0.370%
2016	7.900%	7.900%	8.370%	8.270%	0.100%	8.000%	0.370%
2015	7.900%	7.900%	8.270%	8.170%	0.100%	7.900%	0.370%
2014	7.900%	7.900%	8.170%	8.070%	0.100%	7.800%	0.370%
2012-2013	6.900%	7.900%	7.170%	7.070%	0.100%	6.800%	0.370%
2010-2011	6.900%		7.170%	7.070%	0.100%	6.800%	0.370%
2008-2009	6.900%		7.035%	6.935%	0.100%	6.800%	0.235%
2000-2007	6.900%		6.900%	6.800%	0.100%	6.800%	0.100%
1998-1999	6.800%		6.800%	6.700%	0.100%	6.700%	0.100%
1994-1997	6.700%		6.700%	6.700%		6.700%	
1993	6.550%		6.550%	6.550%		6.550%	
1992	6.417%		6.417%	6.417%		6.417%	
1991	6.300%		6.417%	6.417%		6.417%	
1990	6.150%		6.417%	6.417%		6.417%	
1984-1989	6.000%		6.417%	6.417%		6.417%	
1982-1983	6.000%		6.320%	6.320%		6.320%	
1979-1981	6.000%		6.200%	6.200%		6.200%	
1978	6.000%		5.950%	5.950%		5.950%	
1977	6.000%		5.550%	5.550%		5.550%	
1976	6.000%		5.200%	5.200%		5.200%	
1974-1975	5.750%		4.900%	4.900%		4.900%	
1972-1973	5.750%		4.600%	4.600%		4.600%	
1970-1971	5.750%		4.300%	4.300%		4.300%	
1968-1969	5.750%		3.800%	3.800%		3.800%	
1947-1967*	2.5%-9.6%		3.300%	3.300%		3.300%	
1945-1947*	2.5%-9.6%		3.000%	3.000%		3.000%	

*1945 - 1967 Member Contributions were based on age and gender.

JRS		
Fiscal Year	Member	Employer
1998-2018	7.000%	25.810%
1993-1997	7.000%	6.000%
1968-1992	6.000%	6.000%

Prior to 1998 the employer contributed 6% and additional contributions were received based on a portion of the District Court filing fees. In 1998 the filing fees were eliminated and the employer rate was increased to 25.81%.

The employer contributions have been temporarily suspended for JRS beginning the first full pay period of January 2018 until after the last full pay period of June 2019, when the employer contributions will return to 25.18%.

STATISTICAL SECTION

Public Employees' Retirement Board *A Component Unit of the State of Montana* **Schedule of Contribution Rate History (cont.)**

HPORS

Fiscal Year	Member		Employer	State
	Non-GABA	GABA		
2017-2018	13.000%	13.050 %	28.150%	10.180 %
2016	12.000%	12.050 %	28.150%	10.180 %
2015	11.000%	11.050 %	28.150%	10.180 %
2014	10.000%	10.050 %	28.150%	10.180 %
1998-2013	9.000%	9.050 %	26.150%	10.180 %
1992-1997	9.000%		26.100%	10.180 %
1991	7.590%		26.100%	10.180 %
1986-1990	7.590%		16.570%	10.180 %
1982-1985	6.500%		16.570%	
1976-1981	6.500%		16.000%	
1975	6.500%		15.000%	
1971-1974	5.000%		8.000%	

SRS

Fiscal Year	Member	Employer
2018	10.495%	13.115%
2010-2017	9.245%	10.115%
2008-2009	9.245%	9.825%
1998-2007	9.245%	9.535%
1997	7.865%	8.535%
1996	7.865%	8.535%
1986-1995	7.000%	7.670%
1982-1985	7.000%	7.620%
1975-1981	7.000%	7.550%

GWPORS

Fiscal Year	Member	Employer
2003-2018	10.560%	9.000%
1998-2002	8.500%	9.000%
1996-1997	7.900%	8.150%
1986-1995	7.900%	7.150%
1982-1985	7.000%	7.150%
1964-1981	7.000%	7.000%

Public Employees' Retirement Board
A Component Unit of the State of Montana
Schedule of Contribution Rate History (cont.)

MPORS

Fiscal Year	Member				Employer	State
	Hired <7/1/75	Hired >6/30/75	Hired >6/30/79	Hired >6/30/97 GABA		
2000-2018	5.800%	7.000 %	8.500 %	9.000 %	14.410%	29.370%
1998-1999	7.800%	9.000 %	10.500 %	11.000 %	14.410%	29.370%
1997	7.800%	9.000 %	10.500 %		14.360%	29.370%
1994-1996	7.800%	9.000 %	10.500 %		14.360%	15.660%
1993	7.800%	9.000 %	10.500 %		13.920%	15.660%
1992	6.000%	7.200 %	8.700 %		13.920%	15.660%
1986-1991	6.000%	6.000 %	7.500 %		13.020%	15.060%
1982-1985	6.000%	6.000 %	7.500 %		14.040%	14.040%
1980-1981	6.000%	6.000 %	7.500 %		14.000%	14.000%
1978-1979	6.000%	6.000 %			12.000%	12.000%
1976-1977	6.000%	6.000 %			11.000%	12.000%
1974-1975	6.000%				11.000%	12.000%

FURS

Fiscal Year	Member			
	Non-GABA	GABA	Employer	State
1998-2018	9.500%	10.700%	14.360%	32.610%
1997	7.800%		14.360%	32.610%
1996	7.800%		14.360%	24.210%
1995	6.000%		13.020%	24.210%
1992-1994	6.000%		13.020%	23.270%
1986-1991	6.000%		13.020%	22.980%
1984-1985	6.000%		18.000%	18.000%
1983	6.000%		15.000%	15.000%
1981-1982	6.000%		12.000%	12.000%

PERS-DCRP

Fiscal Year	State & University			Local Government		School Districts	
	Member			Employer	State	Employer	State
	Hired <07/01/11	Hired ≥ 07/01/11	Employer				
2018	7.900%	7.900 %	8.570%	8.470%	0.100%	8.200%	0.370%
2017	7.900%	7.900 %	8.470%	8.370%	0.100%	8.100%	0.370%
2016	7.900%	7.900 %	8.370%	8.270%	0.100%	8.000%	0.370%
2015	7.900%	7.900 %	8.270%	8.170%	0.100%	7.900%	0.370%
2014	7.900%	7.900 %	8.170%	8.070%	0.100%	7.800%	0.370%
2012-2013	6.900%	7.900 %	7.170%	7.070%	0.100%	6.800%	0.370%
2010-2011	6.900%		7.170%	7.070%	0.100%	6.800%	0.370%
2008-2009	6.900%		7.035%	6.935%	0.100%	6.800%	0.235%
2003-2007	6.900%		6.900%	6.800%	0.100%	6.800%	0.100%

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

History of Membership in Retirement Plans, Last Ten Fiscal Years

System	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
PERS-DBRP										
Active	28,646	29,395	28,390	28,237	28,229	28,401	28,548	28,659	28,834	28,983
Retirees/Beneficiaries	22,556	21,805	21,333	20,681	20,081	19,451	18,738	18,123	17,512	17,075
Term-Non-Vested	17,973	16,659	10,031	8,839	7,666	6,712	6,164	5,787	5,402	5,670
Term-Vested	3,793	3,677	3,062	2,925	2,825	2,686	2,560	2,535	2,471	2,476
Total	72,968	71,536	62,816	60,682	58,801	57,250	56,010	55,104	54,219	54,204

The Term-Non-Vested count for fiscal year 2017 forward includes dormant accounts that were previously not counted.

JRS										
Active	55	56	55	55	55	54	54	54	51	51
Retirees/Beneficiaries	70	68	68	67	67	65	56	58	55	55
Term-Non-Vested	1	1								
Term-Vested	3	2	2	2	1				1	1
Total	129	127	125	124	123	119	110	112	107	107

HPORS										
Active	233	238	228	241	229	219	218	214	230	222
Retirees/Beneficiaries	338	331	329	327	322	310	305	302	295	291
Term-Non-Vested	23	17	18	13	14	11	10	9	6	8
Term-Vested	14	16	16	11	11	14	11	11	13	14
Total	608	602	591	592	576	554	544	536	544	535

SRS										
Active	1,429	1,415	1,364	1,336	1,307	1,276	1,241	1,230	1,181	1,185
Retirees/Beneficiaries	681	648	620	577	533	503	469	441	415	406
Term-Non-Vested	539	465	394	342	288	235	212	196	157	155
Term-Vested	129	108	95	81	73	67	60	48	36	41
Total	2,778	2,636	2,473	2,336	2,201	2,081	1,982	1,915	1,789	1,787

Public Employees' Retirement Board

A Component Unit of the State of Montana

History of Membership in Retirement Plans, Last Ten Fiscal Years (cont)

System	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
GWPORS										
Active	1,010	1,012	989	993	955	971	972	951	966	950
Retirees/Beneficiaries	312	276	250	231	203	180	163	145	136	127
Term-Non-Vested	382	304	278	235	175	148	146	113	100	103
Term-Vested	123	114	105	95	87	69	64	61	47	40
Total	1,827	1,706	1,622	1,554	1,420	1,368	1,345	1,270	1,249	1,220
MPORS										
Active	787	775	762	743	743	734	701	739	727	663
Retirees/Beneficiaries	812	791	768	744	716	710	676	676	670	646
Term-Non-Vested	153	143	112	103	90	77	76	71	65	59
Term-Vested	78	75	61	60	55	52	49	40	47	48
Total	1,830	1,784	1,703	1,650	1,604	1,573	1,502	1,526	1,509	1,416
FURS										
Active	691	678	644	627	616	610	590	579	570	558
Retirees/Beneficiaries	652	630	621	609	595	587	571	552	546	542
Term-Non-Vested	66	54	77	71	66	63	62	60	53	49
Term-Vested	41	39	27	21	19	15	13	13	13	9
Total	1,450	1,401	1,369	1,328	1,296	1,275	1,236	1,204	1,182	1,158
VFCA										
Active	2,029	1,957	1,895	1,977	1,935	2,101	2,106	2,105	2,315	2,253
Retirees/Beneficiaries	1,474	1,438	1,425	1,371	1,332	1,285	1,242	1,183	1,149	1,103
Term-Vested	815	824	878	905	939	884	879	870	827	840
Total	4,318	4,219	4,198	4,253	4,206	4,270	4,227	4,158	4,291	4,196

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Benefit Expenses and Refunds by Type, Last Ten Fiscal Years

System	2018	2017	2016	2015	2014
PERS-DBRP					
<i>Benefit Expenses</i>					
Retirees	\$ 365,082	\$ 338,438	\$ 335,806	\$ 311,019	\$ 287,895
Survivors ¹	25,941	24,082	5,119	4,717	4,512
Disability	2,073	1,873	2,045	2,301	2,048
<i>Refunds</i>					
Death	2,243	1,962	1,134	1,465	1,728
Lump Sum	12,619	12,252	10,379	11,688	10,070
Total	\$ 407,958	\$ 378,607	\$ 354,483	\$ 331,190	\$ 306,253
Number of Lump Sum	1,353	1,269	1,717	1,661	1,809
JRS					
<i>Benefit Expenses</i>					
Retirees	\$ 2,708	\$ 2,645	\$ 3,278	\$ 2,928	\$ 2,911
Survivors ¹	954	849	26	113	112
Disability	61	60	109		
<i>Refunds</i>					
Death			3		
Lump Sum	149				
Total	\$ 3,872	\$ 3,554	\$ 3,416	\$ 3,041	\$ 3,023
Number of Lump Sum	1				
HPORS					
<i>Benefit Expenses</i>					
Retirees	\$ 9,793	\$ 9,473	\$ 10,053	\$ 9,498	\$ 8,894
Survivors ¹	1,541	1,386	245	238	238
Disability	212	177	181	196	212
<i>Refunds</i>					
Death			3		
Lump Sum	322	245	94	69	84
Total	\$ 11,868	\$ 11,281	\$ 10,576	\$ 10,001	\$ 9,428
Number of Lump Sum	3	9	4	4	5
SRS					
<i>Benefit Expenses</i>					
Retirees	\$ 16,058	\$ 14,861	\$ 14,123	\$ 12,560	\$ 11,482
Survivors ¹	1,146	1,071	532	471	403
Disability	739	744	792	988	802
<i>Refunds</i>					
Death	110	24	29	1	45
Lump Sum	1,490	1,383	1,029	1,217	1,185
Total	\$ 19,543	\$ 18,083	\$ 16,505	\$ 15,237	\$ 13,917
Number of Lump Sum	107	98	110	115	107

¹ The amount of survivors increased in fiscal year 2017 forward due to the way the newly implemented computer system categorizes survivors.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	267,690	\$ 245,959	\$ 224,108	\$ 204,885	\$ 189,360
	4,240	3,968	3,748	3,692	3,244
	1,922	2,065	2,253	2,481	2,521
	169	770	1,114	1,128	1,277
	11,254	11,991	11,302	10,967	10,821
\$	285,275	\$ 264,753	\$ 242,525	\$ 223,153	\$ 207,223
	2,237	2,307	1,998	2,537	2,751
<hr/>					
\$	2,478	\$ 2,291	\$ 2,190	\$ 2,069	\$ 1,926
	75	53	50	49	46
<hr/>					
\$	2,553	\$ 2,344	\$ 2,240	\$ 2,118	\$ 1,972
<hr/>					
\$	8,270	\$ 7,794	\$ 7,462	\$ 7,198	\$ 6,821
	248	239	233	216	191
	191	188	162	143	115
		2	9		
	51	65	121	58	26
\$	8,760	\$ 8,288	\$ 7,987	\$ 7,615	\$ 7,153
	5	8	5	4	1
<hr/>					
\$	10,430	\$ 9,356	\$ 8,273	\$ 7,291	\$ 6,878
	392	347	292	293	272
	761	676	665	693	670
			7		38
	1,159	1,248	938	766	968
\$	12,742	\$ 11,627	\$ 10,175	\$ 9,043	\$ 8,826
	137	144	102	125	141

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Benefit Expenses and Refunds by Type, Last Ten Fiscal Years (cont.)

(in thousands)

System	2018	2017	2016	2015	2014
GWPORS					
<i>Benefit Expenses</i>					
Retirees	\$ 5,932	\$ 5,233	\$ 4,910	\$ 4,412	\$ 3,789
Survivors ¹	499	487	86	88	61
Disability	49	66	71	50	60
<i>Refunds</i>					
Death	43	24	1		69
Lump Sum	1,105	1,036	1,066	801	1,187
Total	\$ 7,628	\$ 6,846	\$ 6,134	\$ 5,351	\$ 5,166
Number of Lump Sum	75	64	97	103	110
MPORS					
<i>Benefit Expenses</i>					
Retirees	\$ 21,622	\$ 20,628	\$ 20,548	\$ 19,294	\$ 18,245
Survivors ¹	1,928	1,720	747	696	675
Disability	936	850	663	568	530
<i>Refunds</i>					
Death	81	4	3	2	
DROP	772	273	819	1,446	469
Lump Sum	1,903	1,043	421	733	549
Total	\$ 27,242	\$ 24,518	\$ 23,201	\$ 22,739	\$ 20,468
Number of Lump Sum	19	17	29	37	36
Number of DROP	8	2	5	10	5
FURS					
<i>Benefit Expenses</i>					
Retirees	\$ 19,658	\$ 18,470	\$ 20,189	\$ 18,986	\$ 18,106
Survivors ¹	3,919	3,651	478	484	490
Disability	282	211	224	271	252
<i>Refunds</i>					
Death	4	4	5	4	24
Lump Sum	173	168	46	2	166
Total	\$ 24,036	\$ 22,504	\$ 20,942	\$ 19,747	\$ 19,038
Number of Lump Sum	12	8	8	8	9
VFCA					
<i>Benefit Expenses</i>					
Retirees	\$ 2,933	\$ 2,858	\$ 2,623	\$ 2,369	\$ 2,281
Survivors ¹	11				
Disability					
Total	\$ 2,944	\$ 2,858	\$ 2,623	\$ 2,369	\$ 2,281

¹ The amount of survivors increased in fiscal year 2017 forward due to the way the newly implemented computer system categorizes survivors.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
\$	3,497	\$ 3,106	\$ 2,801	\$ 2,566	\$ 2,427
	59	80	54	49	41
	19	7	2	3	
		10	6	4	53
	841	1,227	991	879	840
\$	4,416	\$ 4,430	\$ 3,854	\$ 3,501	\$ 3,370
	122	130	114	143	110
<hr/>					
\$	17,269	\$ 16,195	\$ 15,835	\$ 14,652	\$ 13,960
	656	654	629	613	560
	538	504	546	462	340
		1	3		
	1,177	352	449	407	148
	656	355	498	442	794
\$	20,296	\$ 18,061	\$ 17,960	\$ 16,576	\$ 15,802
	44	37	36	39	42
	7	4	5	5	5
<hr/>					
\$	16,965	\$ 15,884	\$ 12,554	\$ 14,031	\$ 13,428
	478	466	479	427	433
	227	169	2,560	140	126
			12		
	73	119	128	86	70
\$	17,743	\$ 16,638	\$ 15,733	\$ 14,684	\$ 14,057
	6	13	6	8	13
<hr/>					
\$	2,819	\$ 2,046	\$ 1,938	\$ 1,848	\$ 1,779
				9	1
\$	2,819	\$ 2,046	\$ 1,938	\$ 1,857	\$ 1,780

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Distributions Processed, Last Ten Fiscal Years

(in thousands)

System	2018	2017	2016	2015	2014
PERS-DCRP					
Number of Retirements	57	32	27	20	26
Number of Deaths	8	8	11	5	8
Amount of Benefits	\$ 403	\$ 232	\$ 262	\$ 190	\$ 155
Number of Full Refunds	181	167	246	164	147
Amount Refunded	\$ 7,415	\$ 5,554	\$ 4,106	\$ 5,215	\$ 3,616
Number of Partial Refunds	70	45	52	46	57
Amount Refunded	\$ 1,928	\$ 1,251	\$ 931	\$ 698	\$ 967
Number of Forfeitures	117	114	115	91	72
Amount of Contributions Forfeited ¹	\$ 746	\$ 397	\$ 383	\$ 333	\$ 252

¹ Members terminating with less than 5 years of membership service forfeit their employer contributions.

STATISTICAL SECTION

	2013	2012	2011	2010	2009
	35	4	8	35	3
	5	1		2	1
\$	154 \$	573 \$	38 \$	297 \$	24
	179	158	182	116	145
\$	3,759 \$	3,077 \$	3,226 \$	1,438 \$	1,744
	60	35	75	13	3
\$	436 \$	323 \$	393 \$	198 \$	128
	75	98	124	94	121
\$	398 \$	415 \$	417 \$	318 \$	266

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Retired Members by Type of Benefit

As of June 30, 2018

	Amount of Monthly Benefit	# of Retired Members	Type of Retirement		
			Regular	Disability	Survivor ²
PERS-DBRP	\$1-250	1,764	1,716		48
	\$251-500	3,424	3,337	33	54
	\$501-750	2,945	2,864	31	50
	\$751-1,000	2,368	2,304	25	39
	\$1,001-1,250	1,985	1,942	27	16
	\$1,251-1,500	1,501	1,475	8	18
	\$1,501-1,750	1,277	1,255	15	7
	\$1,751-2,000	1,171	1,157	5	9
	Over \$2,000	6,121	6,068	14	39
Total		22,556	22,118	158	280
<hr/>					
	Amount of Monthly Benefit	# of Retired Members	Type of Retirement		
			Regular	Disability	Survivor ²
PERS-DCRP Disability OPEB	\$1-250				
	\$251-500	3		3	
	\$501-750	2		2	
	\$751-1,000	1		1	
	\$1,001-1,250				
	\$1,251-1,500	1		1	
	\$1,501-1,750				
	\$1,751-2,000				
	Over \$2,000				
Total		7		7	
<hr/>					
	Amount of Monthly Benefit	# of Retired Members	Type of Retirement		
			Regular	Disability	Survivor ²
JRS	\$1-250				
	\$251-500				
	\$501-750				
	\$751-1,000	1	1		
	\$1,001-1,250	1			1
	\$1,251-1,500	5	5		
	\$1,501-1,750	4	4		
	\$1,751-2,000				
	Over \$2,000	59	54	1	4
Total		70	64	1	5

¹ Option Selected:

1 - Beneficiary receives lump sum of member's unused contributions

2 - Beneficiary receives 100 percent of member's reduced monthly benefit

3 - Beneficiary receives 50 percent of member's reduced monthly benefit

4 10 yrs - Guaranteed for the life of member or a minimum of 10 years after member's retirement

4 20 yrs - Guaranteed for the life of member or a minimum of 20 years after member's retirement

Statutory - A surviving spouse or dependent child of a member of HPORS, MPORS, or FURS receiving benefits upon the death of the member

Non-Increasing Annuity - An optional death benefit, payable for life to a PERS beneficiary who elects to receive a death payment as defined in §19-3-1202, MCA in lieu of a survivor benefit available under §19-3-1204, MCA

² For the purposes of this schedule, Survivor is anyone receiving a monthly benefit that is not the original member.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Retired Members by Type of Benefit

As of June 30, 2018

	Option Selected ¹							GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory	Non-Increasing Annuity		
PERS-DBRP	1,271	314	57	22	75		25	1,750	14
	2,378	707	136	55	141		7	3,418	6
	1,976	630	149	54	134		2	2,943	2
	1,535	554	153	40	85		1	2,368	
	1,256	454	168	43	63		1	1,985	
	953	352	122	30	44			1,500	1
	783	323	117	28	26			1,277	
	677	338	110	22	24			1,171	
	3,410	1,565	817	143	186			6,121	
	14,239	5,237	1,829	437	778		36	22,533	23

	Option Selected ¹							GABA ³	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory	Non-Increasing Annuity		
PERS-DCRP	3								3
Disability OPEB	2								2
	1								1
	1								1
	7								7

	Option Selected ¹							GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory	Non-Increasing Annuity		
JRS			1						1
							1		1
								1	4
			3	1				3	1
		22	29	5		3			32
	22	33	6		3		1	36	34

³ GABA is not an option for PERS DCRP-Disability OPEB retired members
 GABA - Members covered under the Guaranteed Annual Benefit Adjustment
 NON-GABA - Members not covered under the Guaranteed Annual Benefit Adjustment

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Retired Members by Type of Benefit

As of June 30, 2018

	Amount of Monthly Benefit	# of Retired Members ²	Type of Retirement		
			Regular	Disability	Survivor ³
HPORS	\$1-250	1			1
	\$251-500	7	7		
	\$501-750	7	4		3
	\$751-1,000	8	8		
	\$1,001-1,250	5	3		2
	\$1,251-1,500	3	3		
	\$1,501-1,750	8	7		1
	\$1,751-2,000	19	18		1
	Over \$2,000	280	255	7	18
Total		338	305	7	26
SRS	\$1-250	20	16		4
	\$251-500	42	40	1	1
	\$501-750	49	46	1	2
	\$751-1,000	36	36		
	\$1,001-1,250	33	32		1
	\$1,251-1,500	36	34	1	1
	\$1,501-1,750	42	40	1	1
	\$1,751-2,000	44	36	4	4
	Over \$2,000	379	355	19	5
Total		681	635	27	19
GWPORS	\$1-250	2	2		
	\$251-500	25	23	1	1
	\$501-750	38	36		2
	\$751-1,000	32	29		3
	\$1,001-1,250	30	29		1
	\$1,251-1,500	24	21	1	2
	\$1,501-1,750	27	27		
	\$1,751-2,000	23	22	1	
	Over \$2,000	111	111		
Total		312	300	3	9

¹ Option Selected:

1 - Beneficiary receives lump sum of member's unused contributions

2 - Beneficiary receives 100 percent of member's reduced monthly benefit

3 - Beneficiary receives 50 percent of member's reduced monthly benefit

4 10 yrs - Guaranteed for the life of member or a minimum of 10 years after member's retirement

4 20 yrs - Guaranteed for the life of member or a minimum of 20 years after member's retirement

Statutory - A surviving spouse or dependent child of a member of HPORS, MPORS, or FURS receiving benefits upon the death of the member

Non-Increasing Annuity - An optional death benefit, payable for life to a PERS beneficiary who elects to receive a death payment as defined in §19-3-1202, MCA in lieu of a survivor benefit available under §19-3-1204, MCA

² HPORS does not include DROP members.

³ For the purposes of this schedule, Survivor is anyone receiving a monthly benefit that is not the original member.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Retired Members by Type of Benefit

As of June 30, 2018

	Option Selected ¹						Non-Increasing Annuity	GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory			
HPORS							1	1	
							7	3	4
							7	6	1
							8	5	3
							5	3	2
							3	2	1
							8	6	2
							19	10	9
							280	225	55
							338	261	77

	Option Selected ¹						Non-Increasing Annuity	GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory			
SRS	12	6	2					20	
	15	19	5			3		42	
	22	19	4	1	3			49	
	19	12	3	1	1			36	
	15	13	4	1				33	
	16	15	2	1	2			36	
	17	20	4		1			42	
	19	18	3	1	3			44	
	192	116	39	15	17			379	
	327	238	66	20	30			681	

	Option Selected ¹						Non-Increasing Annuity	GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory			
GWPORS	2							2	
	9	12	1	1	2			25	
	24	10	2		2			38	
	18	9	3		2			32	
	14	7	7	1	1			30	
	12	7	5					24	
	16	7	4					27	
	13	9	1					23	
	51	38	13	2	7			111	
	159	99	36	4	14			312	

GABA - Members covered under the Guaranteed Annual Benefit Adjustment

NON-GABA - Members not covered under the Guaranteed Annual Benefit Adjustment

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Retired Members by Type of Benefit

As of June 30, 2018

	Amount of Monthly Benefit	# of Retired Members ²	Type of Retirement		
			Regular	Disability	Survivor ³
MPORS	\$1-250	22	22		
	\$251-500	15	15		
	\$501-750	20	20		
	\$751-1,000	20	16		4
	\$1,001-1,250	13	13		
	\$1,251-1,500	12	12		
	\$1,501-1,750	29	28		1
	\$1,751-2,000	77	62	2	13
	Over \$2,000	604	550	30	24
Total	812	738	32	42	

	Amount of Monthly Benefit	# of Retired Members	Type of Retirement		
			Regular	Disability	Survivor ³
FURS	\$1-250	10	9		1
	\$251-500	41	40		1
	\$501-750	4	4		
	\$751-1,000	8	8		
	\$1,001-1,250	8	8		
	\$1,251-1,500	7	7		
	\$1,501-1,750	21	19	1	1
	\$1,751-2,000	38	35		3
	Over \$2,000	515	482	8	25
Total	652	612	9	31	

	Amount of Monthly Benefit	# of Retired Members	Type of Retirement		
			Regular	Disability	Survivor ³
VFCA	\$1-250	1,450	1,445	1	4
	\$251-500	24	24		
	\$501-750				
	\$751-1,000				
	\$1,001-1,250				
	\$1,251-1,500				
	\$1,501-1,750				
	\$1,751-2,000				
	Over \$2,000				
Total	1,474	1,469	1	4	

¹ Option Selected (excluding the VFCA):

- 1 - Beneficiary receives lump sum of member's unused contributions
- 2 - Beneficiary receives 100 percent of member's reduced monthly benefit
- 3 - Beneficiary receives 50 percent of member's reduced monthly benefit
- 4 10 yrs - Guaranteed for the life of member or a minimum of 10 years after member's retirement
- 4 20 yrs - Guaranteed for the life of member or a minimum of 20 years after member's retirement
- Statutory - A surviving spouse or dependent child of a member of HPORS, MPORS, or FURS receiving benefits upon the death of the member
- Non-Increasing Annuity - An optional death benefit, payable for life to a PERS beneficiary who elects to receive a death payment as defined in §19-3-1202, MCA in lieu of a survivor benefit available under §19-3-1204, MCA

² MPORS does not include DROP members.

³ For the purposes of this schedule, Survivor is anyone receiving a monthly benefit that is not the original member.

⁴ Option Selected VFCA:

- 1 - Member receiving monthly benefit
- 2 - Non-Increasing Annuity - Benefit paid to survivor equal to member's full or partial benefit. Benefit is limited to 40 months including any pension paid to member before death

Public Employees' Retirement Board

A Component Unit of the State of Montana

Retired Members by Type of Benefit

As of June 30, 2018

	Option Selected ¹							GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory	Non-Increasing Annuity		
MPORS							22	20	2
							15	14	1
							20	19	1
							20	20	
							13	13	
							12	12	
							29	24	5
							77	74	3
							604	561	43
							812	757	55

	Option Selected ¹							GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory	Non-Increasing Annuity		
FURS							10	6	4
							41	37	4
							4	4	
							8	8	
							8	7	1
							7	7	
							21	20	1
							38	37	1
							515	492	23
							652	618	34

	Option Selected ⁴							GABA	NON-GABA
	1	2	3	4 10 yrs	4 20 yrs	Statutory	Non-Increasing Annuity		
VFCA							1,450		1,450
							24		24
							1,474		1,474

GABA - Members covered under the Guaranteed Annual Benefit Adjustment
 NON-GABA - Members not covered under the Guaranteed Annual Benefit Adjustment

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Active Members by Age and Gender

As of June 30, 2018

System	Ages	Male	Female	Unknown ¹	Total	System	Ages	Male	Female	Unknown ¹	Total
PERS-DBRP	Under 20	52	53		105	GWPORS	Under 20	4	1		5
	20 - 29	1,189	1,567		2,756		20 - 29	130	46		176
	30 - 39	2,262	2,994		5,256		30 - 39	208	67		275
	40 - 49	2,657	3,443		6,100		40 - 49	213	63		276
	50 - 59	3,660	4,798		8,458		50 - 59	169	43		212
	60 - 69	2,280	2,834		5,114		60 - 69	46	18		64
	70 & Older	284	232		516		70 & Older	2			2
	Unknown ¹			341	341		Unknown ¹				
Total		12,384	15,921	341	28,646	Total		772	238		1,010
JRS	Under 20					MPORS ²	Under 20	1			1
	20 - 29						20 - 29	127	17		144
	30 - 39	1	2		3		30 - 39	267	25		292
	40 - 49	4	1		5		40 - 49	186	14		200
	50 - 59	11	11		22		50 - 59	77	3		80
	60 - 69	19	3		22		60 - 69	10			10
	70 & Older	2	1		3		70 & Older				
	Unknown ¹						Unknown ¹				12
Total		37	18		55	Total		668	59	12	739
HPORS ³	Under 20					FURS	Under 20				
	20 - 29	33	3		36		20 - 29	99	5		104
	30 - 39	73	10		83		30 - 39	246	16		262
	40 - 49	68	1		69		40 - 49	218	5		223
	50 - 59	28	1		29		50 - 59	75	1		76
	60 - 69	3			3		60 - 69	12			12
	70 & Older						70 & Older	1			1
	Unknown ¹						Unknown ¹				13
Total		205	15		220	Total		651	27	13	691
SRS	Under 20	6	1		7	PERS-DCRP	Under 20		1		1
	20 - 29	282	60		342		20 - 29	87	115		202
	30 - 39	347	66		413		30 - 39	267	378		645
	40 - 49	300	46		346		40 - 49	361	404		765
	50 - 59	196	42		238		50 - 59	342	364		706
	60 - 69	67	5		72		60 - 69	140	186		326
	70 & Older	2	1		3		70 & Older	16	11		27
	Unknown ¹			8	8		Unknown ¹				18
Total		1,200	221	8	1,429	Total		1,213	1,459	18	2,690

¹ Membership data not received as of June 30, 2018.

² MPORS does not include DROP.

³ HPORS does not include DROP.

VFCA not included because membership data not required on members until retirement.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Retired Members by Age and Gender

As of June 30, 2018

System	Ages	Male	Female	Unknown	Total	System	Ages	Male	Female	Unknown	Total
PERS-DBRP	Under 20	1			1	GWPORS	Under 20				
	20 - 29	5	12		17		20 - 29	1	2		3
	30 - 39	25	36		61		30 - 39				
	40 - 49	52	51	2	105		40 - 49	2	1		3
	50 - 59	495	612	3	1,110		50 - 59	59	14		73
	60 - 69	3,948	4,891	7	8,846		60 - 69	108	27		135
	70 & Older	5,098	7,313	5	12,416		70 & Older	75	23		98
	Total	9,624	12,915	17	22,556		Total	245	67		312
JRS	Under 20					MPORS¹	Under 20	4	2		6
	20 - 29						20 - 29				
	30 - 39						30 - 39	5	1		6
	40 - 49						40 - 49	40	15		55
	50 - 59		2		2		50 - 59	164	35	1	200
	60 - 69	11	8		19		60 - 69	223	40		263
	70 & Older	32	17		49		70 & Older	183	99		282
	Total	43	27		70		Total	619	192	1	812
HPORS¹	Under 20	1			1	FURS	Under 20				
	20 - 29						20 - 29				
	30 - 39		1		1		30 - 39	5	1		6
	40 - 49	15	6		21		40 - 49	13	6		19
	50 - 59	57	19		76		50 - 59	115	22		137
	60 - 69	48	20		68		60 - 69	169	26		195
	70 & Older	122	49		171		70 & Older	190	105		295
	Total	243	95		338		Total	492	160		652
SRS	Under 20	1			1	VFCA	Under 20				
	20 - 29		1		1		20 - 29				
	30 - 39		2		2		30 - 39				
	40 - 49	39	9	2	50		40 - 49				
	50 - 59	119	27		146		50 - 59	80	6	5	91
	60 - 69	251	38		289		60 - 69	554	40	13	607
	70 & Older	152	40		192		70 & Older	721	54	1	776
	Total	562	117	2	681		Total	1,355	100	19	1,474

¹ HPORS and MPORS does not include DROP.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years

Retirement Effective Dates	PERS - Defined Benefit Retirement Plan Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
Period 7/1/2017 - 6/30/2018							
Average monthly benefit	\$ 570	\$ 1,269	\$ 2,156	\$ 4,295	\$ 4,095	\$ 6,348	\$ 6,799
Average HAC ¹	6,273	8,102	9,220	13,802	11,511	14,441	9,643
Number of retired members	30	228	234	216	183	244	259
Period 7/1/2016 - 6/30/2017							
Average monthly benefit	355	2,234	4,652	6,169	8,642	10,965	12,058
Average HAC ¹	3,240	16,433	22,696	20,909	25,358	22,552	19,608
Number of retired members	58	332	333	308	302	341	457
Period 7/1/2015 - 6/30/2016							
Average monthly benefit	2,048	837	1,497	2,075	3,082	4,665	3,163
Average HAC ¹	8,873	6,555	6,288	6,519	7,586	8,726	4,769
Number of retired members	20	168	168	181	147	184	263
Period 7/1/2014 - 6/30/2015							
Average monthly benefit	1,930	982	1,334	1,688	1,507	1,972	3,078
Average HAC ¹	1,806	2,320	2,553	2,775	3,066	3,098	3,948
Number of retired members	27	159	189	164	180	196	262
Period 7/1/2013 - 6/30/2014							
Average monthly benefit	3,243	1,233	1,888	2,001	2,247	2,533	3,010
Average HAC ¹	2,004	2,799	3,016	3,326	3,548	4,092	4,849
Number of retired members	45	214	201	186	188	192	199
Period 7/1/2012 - 6/30/2013							
Average monthly benefit	2,508	1,315	1,782	1,950	1,582	2,174	3,229
Average HAC ¹	2,225	2,880	3,137	3,418	3,518	3,972	4,728
Number of retired members	48	183	221	169	186	173	263
Period 7/1/2011 - 6/30/2012							
Average monthly benefit	2,024	2,492	808	1,713	2,193	3,627	3,508
Average HAC ¹	1,634	2,746	2,831	3,232	3,319	4,157	4,543
Number of retired members	51	208	213	170	172	183	241
Period 7/1/2010 - 6/30/2011							
Average monthly benefit	2,529	1,322	1,260	1,238	2,501	2,843	3,125
Average HAC ¹	2,055	2,790	2,962	3,060	3,376	3,862	4,473
Number of retired members	43	170	181	163	148	179	293
Period 7/1/2009 - 6/30/2010							
Average monthly benefit	1,941	1,702	2,512	3,309	2,423	2,306	3,637
Average HAC ¹	2,125	2,480	2,670	4,341	3,373	4,010	4,528
Number of retired members	49	163	150	149	114	137	163
Period 7/1/2008 - 6/30/2009							
Average monthly benefit	4,803	1,082	1,642	2,313	2,136	2,309	3,216
Average HAC ¹	2,164	2,614	2,921	3,052	3,324	3,860	4,377
Number of retired members	23	138	159	147	100	168	210

¹ HAC = Highest Average Compensation during any consecutive 36 months or 60 months dependent upon date member was hired.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	DC Disability OPEB Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
Period 7/1/2017 - 6/30/2018							
Average monthly benefit	\$	344	\$	1,370			
Average HAC ¹		1,302		6,213			
Number of retired members		1		1			
Period 7/1/2016 - 6/30/2017							
Average monthly benefit					2,206		
Average HAC ¹					5,446		
Number of retired members					1		
Period 7/1/2015 - 6/30/2016							
Average monthly benefit				1,243			
Average HAC ¹				5,581			
Number of retired members				1			
Period 7/1/2014 - 6/30/2015							
Average monthly benefit		577					
Average HAC ¹		4,019					
Number of retired members		2					
Period 7/1/2013 - 6/30/2014							
Average monthly benefit							
Average HAC ¹							
Number of retired members							
Period 7/1/2012 - 6/30/2013							
Average monthly benefit							
Average HAC ¹							
Number of retired members							
Period 7/1/2011 - 6/30/2012							
Average monthly benefit		356		553			
Average HAC ¹		3,564		2,714			
Number of retired members		1		1			
Period 7/1/2010 - 6/30/2011							
Average monthly benefit							
Average HAC ¹							
Number of retired members							
Period 7/1/2009 - 6/30/2010							
Average monthly benefit				746			
Average HAC ¹				3,455			
Number of retired members				1			
Period 7/1/2008 - 6/30/2009							
Average monthly benefit					800		
Average HAC ¹					2,506		
Number of retired members					1		

¹ HAC = Highest Average Compensation during any consecutive 36 months or 60 months dependent upon date member was hired.

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The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	Judges' Retirement System Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
Period 7/1/2017 - 6/30/2018							
Average monthly benefit		\$	8,259				
Average HAC ¹			11,173				
Number of retired members			2				
Period 7/1/2016 - 6/30/2017							
Average monthly benefit		4,031		19,862	23,441		
Average HAC ¹		20,225		20,930	39,630		
Number of retired members		2		6	4		
Period 7/1/2015 - 6/30/2016							
Average monthly benefit		1,587		9,917		5,319	6,417
Average HAC ¹		9,870		20,501		10,511	10,511
Number of retired members		1		2		1	1
Period 7/1/2014 - 6/30/2015							
Average monthly benefit						5,600	
Average HAC ¹						9,800	
Number of retired members						2	
Period 7/1/2013 - 6/30/2014							
Average monthly benefit				2,792	4,899	5,088	
Average HAC ¹					9,800	9,800	
Number of retired members				1	1	1	
Period 7/1/2012 - 6/30/2013							
Average monthly benefit			2,893	4,877	6,474	6,018	
Average HAC ¹			9,427	9,703	9,494	9,494	
Number of retired members			3	3	1	3	
Period 7/1/2011 - 6/30/2012							
Average monthly benefit							
Average HAC ¹							
Number of retired members							
Period 7/1/2010 - 6/30/2011							
Average monthly benefit		2,331	3,069	5,290		6,231	
Average HAC ¹		8,906	7,842	9,201		8,906	
Number of retired members		1	1	2		1	
Period 7/1/2009 - 6/30/2010							
Average monthly benefit					5,601		
Average HAC ¹					9,797		
Number of retired members					1		
Period 7/1/2008 - 6/30/2009							
Average monthly benefit		1,449	3,404	5,074	4,982		
Average HAC ¹		8,270	8,270	8,296	8,158		
Number of retired members		1	1	2	1		

¹ HAC = Highest Average Compensation during any consecutive 36 months.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	Highway Patrol Officers' Retirement System Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
Period 7/1/2017 - 6/30/2018							
Average monthly benefit	\$ 1,755	\$ 3,812	\$ 2,087	\$ 5,253	\$ 3,090		
Average HAC ¹		8,186	5,362	8,032			
Number of retired members		1	4	3	8	2	
Period 7/1/2016 - 6/30/2017							
Average monthly benefit			6,942	6,766	8,143		
Average HAC ¹			21,334	10,012	11,677		
Number of retired members			4	5	4		
Period 7/1/2015 - 6/30/2016							
Average monthly benefit			2,825	6,420	4,310		
Average HAC ¹			5,434	11,885	6,079		
Number of retired members			1	7	2		
Period 7/1/2014 - 6/30/2015							
Average monthly benefit	1,581	1,113	2,810	3,475	4,315		
Average HAC ¹	5,049		5,412	2,852	6,227		
Number of retired members	2	1	1	4	2		
Period 7/1/2013 - 6/30/2014							
Average monthly benefit		479	2,348	3,330	5,043		
Average HAC ¹		3,557	4,559	5,859	6,641		
Number of retired members		1	1	9	2		
Period 7/1/2012 - 6/30/2013							
Average monthly benefit	2,021			3,241	3,351		
Average HAC ¹	3,925			5,702	7,273		
Number of retired members	1			7	3		
Period 7/1/2011 - 6/30/2012							
Average monthly benefit		711		3,108	4,119		
Average HAC ¹		4,714		5,440	5,383		
Number of retired members		1		1	2		
Period 7/1/2010 - 6/30/2011							
Average monthly benefit			1,799	2,676	3,220		
Average HAC ¹			4,354	4,815	5,355		
Number of retired members			2	3	3		
Period 7/1/2009 - 6/30/2010							
Average monthly benefit	490	201		2,688	2,615	3,769	
Average HAC ¹	3,731	4,039		4,638	4,494	4,952	
Number of retired members	1	4		2	3	1	
Period 7/1/2008 - 6/30/2009							
Average monthly benefit	2,055	1,880		2,464		2,920	
Average HAC ¹	3,511	3,511		4,263		6,231	
Number of retired members	3	3		1		3	

¹ HAC = Highest Average Compensation during any consecutive 36 months.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	Sheriffs' Retirement System Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
Period 7/1/2017 - 6/30/2018							
Average monthly benefit	\$ 2,598	\$ 651	\$ 758	\$ 5,073	\$ 2,940	\$ 3,819	\$ 6,406
Average HAC ¹	5,197	4,489	3,484	11,366	6,033	5,758	6,886
Number of retired members	1	5	7	8	6	6	1
Period 7/1/2016 - 6/30/2017							
Average monthly benefit	691	1,102	7,149	3,429	5,425	6,681	10,002
Average HAC ¹	6,620	7,553	19,249	8,206	10,888	11,139	13,410
Number of retired members	2	10	14	14	18	4	6
Period 7/1/2015 - 6/30/2016							
Average monthly benefit	2,387	2,464	2,669	5,274	3,000	2,905	4,146
Average HAC ¹	5,026	7,058	7,936	8,886	5,538	4,905	5,596
Number of retired members	3	6	6	11	12	3	2
Period 7/1/2014 - 6/30/2015							
Average monthly benefit	2,050	501	869	2,228	3,224	3,088	2,942
Average HAC ¹	4,100	2,864	2,793	5,059	4,817	5,042	3,913
Number of retired members	1	10	7	9	8	7	3
Period 7/1/2013 - 6/30/2014							
Average monthly benefit	684	507	957	2,261	2,847	2,426	3,786
Average HAC ¹	1,712	3,339	3,627	5,393	5,673	5,549	6,893
Number of retired members	3	8	4	5	6	4	3
Period 7/1/2012 - 6/30/2013							
Average monthly benefit	1,652	618	1,520	1,828	2,945	3,545	5,683
Average HAC ¹	3,559	4,147	4,944	4,423	5,466	4,932	6,428
Number of retired members	1	5	13	5	12	2	1
Period 7/1/2011 - 6/30/2012							
Average monthly benefit	3,764	6,837	1,864	2,762	2,627	3,650	4,214
Average HAC ¹	3,367	3,121	4,944	5,493	4,680	4,873	6,286
Number of retired members	3	6	4	2	9	2	7
Period 7/1/2010 - 6/30/2011							
Average monthly benefit	604	681	1,608	2,888	2,589	4,107	5,814
Average HAC ¹	6,500	4,199	3,890	5,466	4,778	5,912	6,842
Number of retired members	1	4	3	5	12	4	6
Period 7/1/2009 - 6/30/2010							
Average monthly benefit	2,008	1,450	895	1,810	3,363	3,739	4,135
Average HAC ¹	3,464	4,282	3,652	4,674	5,600	4,946	5,878
Number of retired members	1	2	4	2	4	3	1
Period 7/1/2008 - 6/30/2009							
Average monthly benefit	1,326	561		1,882	2,848	4,338	5,571
Average HAC ¹	2,579	3,405		3,745	4,718	6,003	6,204
Number of retired members	1	3		2	2	2	1

¹ HAC = Highest Average Compensation during any consecutive 36 months or 60 months dependent upon date member was hired.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	Game Wardens' and Peace Officers' Retirement System						30+
	Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	
Period 7/1/2017 - 6/30/2018							
Average monthly benefit	\$ 613	\$ 1,709	\$ 1,958	\$ 2,577	\$ 2,551		
Average HAC ¹	3,572	6,898	4,500	5,114	4,507		
Number of retired members	7	8	8	10	1		
Period 7/1/2016 - 6/30/2017							
Average monthly benefit	1,430	2,211	3,453	4,476			8,210
Average HAC ¹	7,477	7,645	8,747	8,736			9,836
Number of retired members	12	12	14	6			6
Period 7/1/2015 - 6/30/2016							
Average monthly benefit	208	2,422	1,143	3,336	2,316	4,129	6,179
Average HAC ¹	1,684	6,650		8,009	4,839	6,493	8,269
Number of retired members	1	8	2	9	3	1	1
Period 7/1/2014 - 6/30/2015							
Average monthly benefit		607	1,213	1,876	2,106	2,671	3,494
Average HAC ¹		2,792	3,588	3,738	4,100		4,848
Number of retired members		7	10	5	5	1	2
Period 7/1/2013 - 6/30/2014							
Average monthly benefit		745	1,151	1,642	2,564	2,109	
Average HAC ¹		3,470	3,809	4,266	4,490	3,695	
Number of retired members		6	6	10	4	1	
Period 7/1/2012 - 6/30/2013							
Average monthly benefit	2,507	5,232	1,118	1,259	3,630	4,007	
Average HAC ¹	2,695	2,595	3,316	3,820	6,679	5,795	
Number of retired members	4	6	4	7	1	1	
Period 7/1/2011 - 6/30/2012							
Average monthly benefit		643	1,233	1,999			4,003
Average HAC ¹		3,164	3,938	4,027			4,693
Number of retired members		6	6	1			3
Period 7/1/2010 - 6/30/2011							
Average monthly benefit	4,914	625	916	1,337		3,428	3,830
Average HAC ¹	3,063	3,257	3,904	3,368		4,427	4,205
Number of retired members	1	4	6	1		1	1
Period 7/1/2009 - 6/30/2010							
Average monthly benefit	5,706	595	1,286				4,140
Average HAC ¹	2,507	3,039	3,888				4,192
Number of retired members	1	3	6				1
Period 7/1/2008 - 6/30/2009							
Average monthly benefit	1,700	632		1,713			3,676
Average HAC ¹	2,925	3,091		3,670			3,904
Number of retired members	3	3		1			3

¹ HAC = Highest Average Compensation during any consecutive 36 months or 60 months dependent upon date member was hired.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	Municipal Police Officers' Retirement System						
	Years of Credited Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
Period 7/1/2017 - 6/30/2018							
Average monthly benefit	\$ 2,200	\$ 3,488	\$ 5,052	\$ 2,873	\$ 2,873	\$ 3,850	
Average FAC ¹	10,729	9,826	14,364	6,073	3,902	6,172	
Number of retired members	5	6	10	3	8	2	
Period 7/1/2016 - 6/30/2017							
Average monthly benefit	561	6,523	6,893	4,481	5,971	6,727	
Average FAC ¹	12,635	16,836	16,646	8,318	9,959	11,229	
Number of retired members	6	12	10	8	16	2	
Period 7/1/2015 - 6/30/2016							
Average monthly benefit	5,280	3,364	4,183	2,889	3,439	3,233	1,483
Average FAC ¹	10,172	7,777	8,040	4,281	4,851	6,703	3,800
Number of retired members	3	4	4	3	9	2	1
Period 7/1/2014 - 6/30/2015							
Average monthly benefit	379	1,319	1,098	2,590	2,903	4,100	5,062
Average FAC ¹	6,224	3,399	3,707	4,269	4,028	5,486	6,452
Number of retired members	4	4	5	4	13	3	3
Period 7/1/2013 - 6/30/2014							
Average monthly benefit		730	1,801	2,850	3,282	4,264	
Average FAC ¹		3,028	4,826	5,699	5,839	6,655	
Number of retired members		1	3	1	8	1	
Period 7/1/2012 - 6/30/2013							
Average monthly benefit	541	1,202	571	2,309	3,057	3,384	
Average FAC ¹	6,801	4,075	2,093	4,664	5,261	5,516	
Number of retired members	5	3	1	6	17	6	
Period 7/1/2011 - 6/30/2012							
Average monthly benefit	124	1,191	1,247	2,466	3,058		5,701
Average FAC ¹	5,411	4,023	4,289	4,648	5,117		6,411
Number of retired members	2	3	1	1	7		2
Period 7/1/2010 - 6/30/2011							
Average monthly benefit	273	2,315	1,810	2,601	2,942	4,498	
Average FAC ¹	5,617	4,113	4,862	4,884	4,831	5,893	
Number of retired members	3	1	1	4	8	1	
Period 7/1/2009 - 6/30/2010							
Average monthly benefit	1,016	1,334	2,365	2,541	2,218	3,078	6,121
Average FAC ¹	3,905	3,325	4,618	4,541	4,224		6,594
Number of retired members	4	5	4	4	9	1	1
Period 7/1/2008 - 6/30/2009							
Average monthly benefit		2,434		2,111	1,951	4,356	5,332
Average FAC ¹		4,199		4,574	4,030	5,120	5,383
Number of retired members		1		5	8	1	2

¹ FAC = Final Average Compensation during the last 36 months.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average FAC may be blank due to system not requiring this information to be updated when a member retires.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years

Retirement Effective Dates	Firefighters' Unified Retirement System Years of Credited Service											
	0-5	5-10	10-15	15-20	20-25	25-30	30+					
Period 7/1/2017 - 6/30/2018												
Average monthly benefit	\$	2,355	\$	1,556	\$	5,482	\$	3,572	\$	4,795	\$	4,964
Average HAC ¹		10,401		5,013		11,286		5,913		5,427		5,188
Number of retired members		1		2		3		10		4		4
Period 7/1/2016 - 6/30/2017												
Average monthly benefit	424	7,343		4,131	8,080	9,989	10,844					
Average HAC ¹		22,235		8,962	14,939	14,869	13,268					
Number of retired members	2	6		6	4	10	16					
Period 7/1/2015 - 6/30/2016												
Average monthly benefit	2,240			2,904	6,969	4,741	5,863					
Average HAC ¹	4,156			4,628	12,003	6,881	7,202					
Number of retired members	2			3	9	4	4					
Period 7/1/2014 - 6/30/2015												
Average monthly benefit		1,375	1,634	1,209	1,936	4,621	5,623					
Average HAC ¹		1,763	4,444	2,713	5,475	5,367	5,217					
Number of retired members		2	1	2	8	4	4					
Period 7/1/2013 - 6/30/2014												
Average monthly benefit		1,423	1,819	2,493	3,335	4,176	5,716					
Average HAC ¹		5,161	5,865	6,698	5,902	5,931	6,580					
Number of retired members		2	1	5	4	2	3					
Period 7/1/2012 - 6/30/2013												
Average monthly benefit	1,472	647	1,441		1,219	4,747	6,167					
Average HAC ¹	2,859	3,637	4,549		2,175	6,656	6,686					
Number of retired members	1	2	2		5	6	5					
Period 7/1/2011 - 6/30/2012												
Average monthly benefit		1,304	3,122		2,942	4,077	480					
Average HAC ¹		5,946	5,885		5,616	6,638	6,837					
Number of retired members		2	1		7	6	5					
Period 7/1/2010 - 6/30/2011												
Average monthly benefit		280		2,334	4,127	3,785	4,107					
Average HAC ¹		1,506		4,814	5,945	5,075	4,481					
Number of retired members		1		1	1	9	5					
Period 7/1/2009 - 6/30/2010												
Average monthly benefit	2,074		2,891	260	2,869	3,918	4,282					
Average HAC ¹	3,686		4,987	448	4,496	5,146	5,433					
Number of retired members	2		1	2	3	4	5					
Period 7/1/2008 - 6/30/2009												
Average monthly benefit		1,158		2,083	4,078	3,324	4,989					
Average HAC ¹		3,989		3,593	5,928	3,897	4,876					
Number of retired members		5		1	5	2	2					

¹ HAC = Highest Average Compensation during any consecutive 36 months.

The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

The Average HAC may be blank due to system not requiring this information to be updated when a member retires.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Average Benefit Payments, Last Ten Fiscal Years (cont.)

Retirement Effective Dates	Volunteer Firefighters' Compensation Act Years of Credited Service						30+					
	0-5	5-10	10-15	15-20	20-25	25-30						
Period 7/1/2017 - 6/30/2018												
Average monthly benefit	\$	88	\$	113	\$	349	\$	194	\$	231	\$	268
Average HAC ¹												
Number of retired members		8		18		18		18		7		8
Period 7/1/2016 - 6/30/2017												
Average monthly benefit		175		238		327		387		464		500
Average HAC ¹												
Number of retired members		8		26		32		34		10		4
Period 7/1/2015 - 6/30/2016												
Average monthly benefit		88		110		160		387		240		269
Average HAC ¹												
Number of retired members		9		25		15		26		10		2
Period 7/1/2014 - 6/30/2015												
Average monthly benefit		75		94		703		172		220		249
Average HAC ¹												
Number of retired members		10		19		21		17		6		4
Period 7/1/2013 - 6/30/2014												
Average monthly benefit		75		94		140		169		210		238
Average HAC ¹												
Number of retired members		9		19		20		15		9		4
Period 7/1/2012 - 6/30/2013												
Average monthly benefit		75		98		143		173		207		253
Average HAC ¹												
Number of retired members		9		22		21		10		10		3
Period 7/1/2011 - 6/30/2012												
Average monthly benefit		75		106		136		169		211		239
Average HAC ¹												
Number of retired members		4		11		28		30		7		5
Period 7/1/2010 - 6/30/2011												
Average monthly benefit		75		96		145		172		211		
Average HAC ¹												
Number of retired members		5		14		24		14		18		
Period 7/1/2009 - 6/30/2010												
Average monthly benefit		76		100		424		168		946		
Average HAC ¹												
Number of retired members		8		21		19		24		12		
Period 7/1/2008 - 6/30/2009												
Average monthly benefit		75		102		145		166		219		
Average HAC ¹												
Number of retired members		1		13		23		16		8		

¹ HAC = Highest Average Compensation is not applicable to the VFCA. Members are unpaid volunteers and do not contribute to the fund. The Average monthly benefit could be skewed in this schedule due to retroactive retirement dates.

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STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Average Monthly Benefit Payments, All Retirees

For the Fiscal Year Ended 2018

System	Years of Service	Recipient's Age									
		< 45	45-49	50-54	55-59	60-64	65-69	70-74	75-79	Over 80	Average
PERS-DBRP	0-4	\$ 201	\$ 275	\$ 801	\$ 736	\$ 575	\$ 347	\$ 274	\$ 311	\$ 255	\$ 426
	5-9	527	400	351	378	377	391	391	362	341	375
	10-14	584	665	586	594	666	717	703	645	564	658
	15-19	763	955	886	814	1,011	1,084	1,027	980	867	987
	20-24	1,103	1,350	1,315	1,177	1,438	1,487	1,456	1,340	1,183	1,373
	25-29	926	2,192	2,234	2,368	2,439	2,327	2,201	1,927	1,715	2,183
	30-34		2,118	3,033	3,183	3,264	3,178	2,987	2,644	2,187	2,950
	35-39				3,441	3,909	3,903	3,818	3,151	2,763	3,601
	40-UP			3,293		4,212	4,466	4,305	4,538	3,546	4,238
	Average	\$ 621	\$ 990	\$ 1,515	\$ 1,841	\$ 1,724	\$ 1,668	\$ 1,533	\$ 1,320	\$ 1,092	\$ 1,476
JRS	0-4				\$ 5,386						\$ 5,386
	5-9					2,279	1,210	2,198	2,076	3,236	2,098
	10-14						3,864	4,991	3,987	4,054	4,214
	15-19				5,145		4,122	3,752	5,426	5,524	4,341
	20-24						6,563	5,865			6,144
	25-29						7,083	6,271	5,932	6,196	6,282
	30-34						6,808		8,024	7,727	7,646
	35-39										
	40-UP										
	Average				\$ 5,145	\$ 3,315	\$ 4,553	\$ 4,461	\$ 5,525	\$ 4,734	\$ 4,670
HPORS	0-4	\$ 1,692	\$ 2,209	\$ 1,790			\$ 1,995				\$ 1,785
	5-9	495	2,226		1,624		2,225	1,620			1,591
	10-14	607	2,538	1,815	2,201	622	1,524	307	423	363	1,187
	15-19		2,750	1,763	2,263	2,267			1,720	914	2,042
	20-24	2,311	3,362	3,460	3,181	2,684	2,722	2,324	2,097	2,119	2,708
	25-29			3,798	4,502	4,435	3,832	3,336	3,078	2,404	3,379
	30-34					4,122	4,435	4,559	3,995	2,988	3,996
	35-39							5,948	5,789	3,833	4,694
	40-UP									4,749	4,749
	Average	\$ 1,505	\$ 3,053	\$ 3,030	\$ 3,111	\$ 3,002	\$ 3,105	\$ 3,156	\$ 2,793	\$ 2,532	\$ 2,614
SRS	0-4	\$ 1,566	\$ 3,165	\$ 2,402	\$ 1,289	\$ 1,417	\$ 334	\$ 1,295		\$ 500	\$ 1,460
	5-9	1,129	2,259	709	1,016	671	782	911	575	886	854
	10-14	3,398	2,452	854	970	1,252	1,496	1,187	1,372	1,030	1,314
	15-19	2,490	2,349	2,262	1,946	2,194	1,997	1,772	1,601	1,272	2,051
	20-24	3,331	3,032	2,966	2,827	2,881	2,839	2,572	2,136	1,502	2,764
	25-29		3,604	3,411	3,655	3,873	3,978	3,915	3,049	2,144	3,502
	30-34			5,163	5,102	6,035	4,883	4,020	4,402	1,582	4,853
	35-39					4,772	5,248	4,681	4,607		4,797
	40-UP					6,406					6,406
	Average	\$ 2,088	\$ 2,800	\$ 2,160	\$ 2,379	\$ 2,348	\$ 2,561	\$ 2,317	\$ 2,268	\$ 1,512	\$ 2,180

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Average Monthly Benefit Payments, All Retirees

For the Fiscal Year Ended 2018

System	Years of Service	Recipient's Age									Average
		< 45	45-49	50-54	55-59	60-64	65-69	70-74	75-79	Over 80	
GWPORS	0-4			\$ 1,357		\$ 353	\$ 417	\$ 602			\$ 685
	5-9		935	920	644	683	623	829	588		705
	10-14			731	1,126	1,269	1,292	1,240	1,260	1,828	1,240
	15-19	742	1,945	1,131	1,830	1,885	1,995	1,682	1,389	870	1,817
	20-24			2,532	2,224	2,689	2,385	2,121	1,884	1,972	2,391
	25-29			2,588	4,380	3,915	2,551	2,818	2,327	1,900	2,791
	30-34				3,925	4,158	3,906	3,897	1,336	3,088	3,603
	35-39				5,370	4,556	5,235	3,560	3,739	3,788	4,358
	40-UP						4,998				4,998
	Average	\$ 742	\$ 1,272	\$ 2,013	\$ 1,607	\$ 1,916	\$ 1,623	\$ 1,975	\$ 1,726	\$ 2,712	\$ 1,705
MPORS	0-4	\$ 2,278	\$ 1,958	\$ 1,648	\$ 339	\$ 649	\$ 459	\$ 1,633	\$ 1,237		\$ 1,024
	5-9	2,264	2,430	1,157	1,038	1,221	1,584	1,066	2,031	2,137	1,650
	10-14	1,891	2,873	1,428	1,811	2,017	1,851	2,016	1,797	2,182	1,931
	15-19	2,867	2,897	2,391	2,536	2,736	2,311	2,231	2,047	2,244	2,462
	20-24	3,429	3,213	3,004	3,345	2,928	2,795	2,618	2,345	2,227	2,797
	25-29			4,199	4,583	3,958	4,679	4,843	3,141	3,001	4,162
	30-34				5,430	6,002	4,816	6,268	4,469	3,179	5,218
	35-39						5,284			3,128	4,206
	40-UP										
	Average	\$ 2,291	\$ 2,835	\$ 2,481	\$ 2,750	\$ 2,582	\$ 2,763	\$ 2,979	\$ 2,369	\$ 2,372	\$ 2,361
FURS	0-4	\$ 2,014		\$ 227	\$ 1,044	\$ 2,674	\$ 1,609	\$ 2,243			\$ 1,655
	5-9	2,382		2,486	951	1,215	1,170	1,030	2,391		1,506
	10-14	2,366	1,558	2,024	1,999	1,956	2,028	1,189	2,266	2,154	1,919
	15-19	2,786	2,175	3,030	1,992	2,196	2,300	1,773	1,071	1,773	2,155
	20-24	2,868	3,885	2,859	3,151	2,731	2,851	2,326	1,932	2,023	2,578
	25-29		2,154	3,767	4,443	4,259	3,745	3,987	3,164	2,016	3,610
	30-34			4,709	5,521	5,565	5,880	5,066	5,024	2,612	5,207
	35-39					6,664	7,046	6,291	5,232	4,030	5,767
	40-UP								273	271	272
	Average	\$ 2,384	\$ 2,767	\$ 2,931	\$ 3,400	\$ 3,708	\$ 3,780	\$ 3,414	\$ 3,059	\$ 2,197	\$ 2,987
VFCA	0-4					\$ 88		\$ 166			\$ 127
	5-9									105	105
	10-14					105	99	102	97	101	101
	15-19					143	146	146	147	145	145
	20-24				186	184	184	183	182	183	183
	25-29				222	225	225	225	225	223	224
	30-34				258	253	253	252	253	250	254
	35-39				288	306	273	250		250	268
	40-UP										
	Average				\$ 206	\$ 177	\$ 164	\$ 162	\$ 163	\$ 157	\$ 167

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Principal Participating Employers

Current Year and Nine Years Ago

	As of June 30, 2018			As of June 30, 2009		
	Covered Employees ¹	Rank	Percentage of Total System	Covered Employees ¹	Rank	Percentage of Total System
Participating Government						
PERS - DBRP						
STATE OF MONTANA ²	9,997	1	35.46	10,857	1	35.46
UNIVERSITY OF MONTANA	1,185	2	4.20	1,253	2	4.2
MONTANA STATE UNIVERSITY - BOZEMAN	1,049	3	3.72	1,012	3	3.72
MISSOULA COUNTY	680	4	2.41	588	4	2.41
CITY OF BILLINGS	589	5	2.09	557	5	2.09
FLATHEAD COUNTY	412	6	1.46	396	7	1.46
SCHOOL DISTRICT 2 - BILLINGS	410	7	1.45	372	8	1.45
CITY OF GREAT FALLS	372	8	1.32	361	10	1.32
BUTTE SILVERBOW	355	9	1.26			1.26
CITY OF MISSOULA	351	10	1.25			1.25
CASCADE COUNTY	345	11		362	9	1.22
GREAT FALLS PUBLIC SCHOOLS	325	13		430	6	1.17
"All other" *	12,121		45.38	12,427		42.99
Total (520 Employers)	28,191		100.00	28,615		100.00

* In 2018, "all other" consisted of:		
Type	Number	Employees
Cities & Towns	98	1,880
Counties	52	4,038
Other Agencies	117	1,189
School Districts	238	4,682
Universities	3	332
Total	508	12,121

¹ Employee counts are based on June payrolls. Differences in employee counts in this schedule as compared to other CAFR schedules are due to members with multiple employers, June 30th refunded members and members with dual retirement system elections.

² For the purposes of this schedule the State of Montana is considered one employer. There are a total of 34 State of Montana agencies reporting to PERS-DBRP.

A ten year analysis may not be available for all employers, due to the employer not being a participating employer at the time.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Principal Participating Employers (cont.)

Current Year and Nine Years Ago

<u>Participating Government</u>	As of June 30, 2018			As of June 30, 2009		
	Covered Employees ¹	Rank	Percentage of Total System	Covered Employees ¹	Rank	Percentage of Total System
JRS						
STATE OF MONTANA ²	55	1	100.00	51	1	100.00
TOTAL (1 EMPLOYER)	55		100.00	51		100.00
HPORS						
STATE OF MONTANA ²	233	1	100.00	220	1	100.00
TOTAL (1 EMPLOYER)	233		100.00	213		100.00
SRS						
MISSOULA COUNTY	150	1	10.65	114	1	10.65
YELLOWSTONE COUNTY	120	2	8.52	100	2	8.52
CASCADE COUNTY	112	3	7.95	96	3	7.95
GALLATIN COUNTY	105	4	7.46	75	5	7.46
FLATHEAD COUNTY	94	5	6.68	86	4	6.68
LEWIS & CLARK COUNTY	69	6	4.9	58	6	4.9
STATE OF MONTANA ²	55	7	3.91	46	7	3.91
RAVALLI COUNTY	49	8	3.48	43	8	3.48
DAWSON COUNTY	44	9	3.13	44	9	3.13
LAKE COUNTY	41	10	2.91	41	10	2.91
In 2018 "All other" consists of 47 Counties	569		40.41	456		40.41
TOTAL (57 EMPLOYERS)	1,408		100.00	1,159		100.00
GWPORS						
STATE OF MONTANA ²	952	1	95.58	902	1	95.58
MONTANA STATE UNIVERSITY - BOZEMAN	22	2	2.21	15	3	2.21
UNIVERSITY OF MONTANA	15	3	1.51	13	2	1.51
MONTANA STATE UNIVERSITY - BILLINGS	7	4	0.70	6	4	0.70
TOTAL (4 EMPLOYERS)	996		100.00	936		100.00

¹ Employee counts are based on June payrolls. Differences in employee counts in this schedule as compared to other CAFR schedules are due to members with multiple employers, June 30th refunded members and members with dual retirement system elections.

² For the purposes of this schedule the State of Montana is considered one employer. For JRS, HPORS and SRS there is only one State of Montana agency. There are four State of Montana agencies reporting under GWPORS.

A ten-year analysis may not be available for all employers, due to the employer not being a participating employer at the time.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Principal Participating Employers (cont.)

Current Year and Nine Years Ago

Participating Government	As of June 30, 2018			As of June 30, 2009		
	Covered Employees ¹	Rank	Percentage of Total System	Covered Employees ¹	Rank	Percentage of Total System
MPORS						
CITY OF BILLINGS	119	1	17.89	112	1	19.01
CITY OF MISSOULA	89	2	13.38	91	2	14.91
CITY OF GREAT FALLS	68	3	10.23	64	3	12.13
CITY OF BOZEMAN	45	4	6.77	40	4	7.31
MISSOULA RURAL FIRE	40	5	6.02	24	8	7.75
BUTTE SILVER BOW	34	6	5.11	32	6	6.29
CITY OF HELENA	33	7	4.96	35	5	5.56
CITY OF KALISPELL	27	8	4.06	32	7	2.34
CENTRAL VALLEY FIRE DISTRICT	25	9	3.76			
STATE OF MONTANA	21	10	3.16			
BIG SKY FIRE DEPARTMENT	21	10	3.16			
CITY OF WHITEFISH	18			18	9	2.71
CITY OF HAVRE	15			17	10	2.26
All Others	110		21.50	112		24.70
TOTAL (33 EMPLOYERS)	665		100.00	577		100.00
FURS						
CITY OF BILLINGS	119	1	18.17	113	1	21.36
CITY OF MISSOULA	89	2	13.59	87	2	16.45
CITY OF GREAT FALLS	68	3	10.38	65	3	12.29
CITY OF BOZEMAN	46	4	7.02	34	6	6.43
MISSOULA RURAL FIRE DISTRICT	41	5	6.26	22	8	4.16
BUTTE SILVER BOW	34	6	5.19	33	7	6.24
CITY OF HELENA	34	7	5.19	35	4	6.62
CITY OF KALISPELL	30	8	4.58	35	5	6.62
STATE OF MONTANA ²	21	9	3.21			
CENTRAL VALLEY FIRE DISTRICT	20	10	3.05			
CITY OF HAVRE	16	13	2.44	17	9	3.21
CITY OF LIVINGSTON	13	16	1.98	15	10.00	2.84
All Others	124		18.94	73		13.78
TOTAL (27 EMPLOYERS)	655		100.00	529		100
VFCA						

Participating employers is not applicable to VFCA because members are unpaid volunteers. In 2018, there were 225 VFCA qualified volunteer fire departments.

¹ Employee counts are based on June payrolls. Differences in employee counts in this schedule as compared to other CAFR schedules are due to members with multiple employers, June 30th refunded members and members with dual retirement system elections.

² For the purposes of this schedule the State of Montana is considered one employer. For FURS there is only one State of Montana agency.

A ten-year analysis may not be available for all employers, due to the employer not being a participating employer at the time.

Public Employees' Retirement Board

A Component Unit of the State of Montana

Principal Participating Employers (cont.)

Current Year and Nine Years Ago

Participating Government	As of June 30, 2018			As of June 30, 2009		
	Covered Employees ¹	Rank	Percentage of Total System	Covered Employees ¹	Rank	Percentage of Total System
PERS-DCRP						
STATE OF MONTANA ²	1,292	1	48.23	905	1	48.23
YELLOWSTONE CITY-COUNTY HEALTH DEPT	93	2	3.47	38	6	3.47
UNIVERSITY OF MONTANA	71	3	2.65	58	2	2.65
MISSOULA COUNTY	70	4	2.61	47	4	2.61
CITY OF BILLINGS	68	5	2.54	49	3	2.54
MONTANA STATE UNIVERSITY - BOZEMAN	58	6	2.16	38	5	2.17
CITY OF MISSOULA	40	7	1.49	26	10	1.49
GALLATIN COUNTY	33	8	1.23	29	9	1.23
BUTTE SILVER BOW	27	9	1.01	30	8	1.01
YELLOWSTONE COUNTY	24	10	0.90			0.9
FLATHEAD COUNTY	20	13	0.75	37	7	0.75
All Others	883		32.96	604		32.96
TOTAL (282 EMPLOYERS)	2,679		100.00	1,861		100.00

* In 2018, "all other" consisted of:		
Type	Number	Employees
Cities & Towns	52	163
Counties	50	292
Other Agencies	46	116
School Dist	120	301
Universities	3	11
Total	271	883

Deferred Compensation Plan						
STATE OF MONTANA ²	4,785	1	86.57	4,340	1	86.58
UNIVERSITY OF MONTANA	124	2	2.24			2.24
CITY OF HELENA	111	3	2.01	117	2	2.01
LEWIS & CLARK COUNTY	99	4	1.79	102	3	1.79
MONTANA STATE UNIVERSITY - BOZEMAN	66	5	1.19	88	4	1.19
FALLON COUNTY	46	6	0.83			0.83
GREAT FALLS TRANSIT	34	7	0.62	35	5	0.62
SANDERS COUNTY	30	8	0.54			0.54
SCHOOL DISTRICT 6 - WIBAUX	19	9	0.34	16	6	0.34
SCHOOL DISTRICT 2 - BILLINGS	16	10	0.29			0.29
MONTANA STATE UNIVERSITY - BILLINGS	15	11	0.27	7	9	0.27
BIG SKY CO WATER & SEWER DIST #363	9	17	0.16	8	8	0.16
MONTANA STATE UNIVERSITY - NORTHERN	6	23	0.11	13	7	0.11
CARTER COUNTY	5	24	0.09	6	10	0.09
All Others	162		2.36	5		2.93
TOTAL (51 EMPLOYERS)	5,527		100.00	4,737		100.00

* In 2018, "all other" consisted of:		
Type	Number	Employees
Cities & Towns	12	55
Counties	1	3
Other Agencies	12	42
School Dist	11	58
Universities	1	4
Total	37	162

¹ Employee counts are based on June payrolls. Differences in employee counts in this schedule as compared to other CAFR schedules are due to members with multiple employers, June 30th refunded members and members with dual retirement system elections.

² For the purposes of this schedule the State of Montana is considered one employer. There are a total of 32 State of Montana agencies reporting to PERS-DCRP.

A ten-year analysis may not be available for all employers, due to the employer not being a participating employer at the time.

STATISTICAL SECTION

Public Employees' Retirement Board

A Component Unit of the State of Montana

Schedule of Participating Employers

As of June 30, 2018

*P - Defined Benefit PERS *J - Judges *G - Game Wardens *H - Highway Patrol *S - Sheriffs *M - Police *F - Firefighters
 *DC - Defined Contribution PERS *D - 457

State Agencies (34)												
Board of Crime Control	P											DC
Board of Public Education	P											DC
Commissioner of Higher Education	P											DC
Commissioner of Political	P											
Consumer Council	P											DC
Dept of Administration	P											DC
Dept of Agriculture	P											DC
Dept of Commerce	P											DC
Dept of Corrections	P	G										DC
Dept of Environmental Quality	P											DC
Dept of Fish, Wildlife & Parks	P	G										DC
Dept of Justice	P		H	S								DC
Dept of Labor & Industry	P											DC
Dept of Livestock	P	G										DC
Dept of Military Affairs	P							F				DC
Dept of Natural Resources &	P											DC
Dept of Public Health & Human	P											DC
Dept of Revenue	P											DC
Dept of Transportation	P	G										DC
Governor's Office	P											DC
Legislative Council	P											DC
Montana Arts Council	P											
Montana Historical Society	P											DC
Montana State Fund	P											DC
Montana State Library	P											DC
Office of Public Defender	P											DC
Office of Public Instruction	P											DC
Public Employee Retirement	P											DC
Public Service Commission	P											DC
School for the Deaf & Blind	P											DC
Secretary of State	P											DC
State Auditor's Office	P											DC
Supreme Court	P	J										DC
Teachers' Retirement System	P											DC
*State of Montana												D

Counties (55)												
Anaconda-Deer Lodge	P			S	M	F						DC
Beaverhead	P			S								DC
Big Horn	P			S								DC
Blaine	P			S								DC
Broadwater	P			S								DC
Carbon	P			S								DC
Carter	P			S								D
Cascade	P			S								DC
Chouteau	P			S								DC
Custer	P			S								DC
Daniels	P			S								DC
Dawson	P			S								DC
Fallon	P			S								D
Fergus	P			S								DC
Flathead	P			S								DC
Gallatin	P			S								DC
Garfield	P			S								DC
Glacier	P			S								DC
Golden Valley	P			S								DC
Granite	P			S								DC
Hill	P			S								DC
Jefferson	P			S								DC
Judith Basin	P			S								
Lake	P			S								DC
Lewis & Clark	P			S								D
Liberty	P			S								DC
Lincoln	P			S								DC
Madison	P			S								DC
McCone	P			S								DC
Meagher	P			S								DC
Mineral	P			S								DC
Missoula	P			S								DC
Musselshell	P			S								DC
Park	P			S								DC
Petroleum	P			S								DC
Phillips	P			S								DC
Pondera	P			S								DC
Powder River	P			S								DC
Powell	P			S								DC
Prairie	P			S								DC
Ravalli	P			S								DC
Richland	P			S								DC
Roosevelt	P			S								DC
Rosebud	P			S								DC
Sanders	P			S								D
Sheridan	P			S								DC
Stillwater	P			S								DC
Sweet Grass	P			S								DC
Teton	P			S								DC
Toole	P			S								DC
Treasure	P			S								DC
Valley	P			S								DC
Wheatland	P			S								DC
Wibaux	P			S								
Yellowstone	P			S								DC

STATISTICAL SECTION

Schedule of Participating Employers (continued)

*P - Defined Benefit PERS *J - Judges *G - Game Wardens *H - Highway Patrol *S - Sheriffs *M - Police *F - Firefighters
 *DC - Defined Contribution PERS *D - 457

Cities & Towns (98)												
Alberton	P											DC
Baker	P				M							
Belgrade	P				M							DC
Belt	P											
Big Sandy	P											
Big Timber	P											DC
Billings	P				M	F						DC
Boulder	P											
Bozeman	P				M	F						DC
Bridger	P											DC
Broadus	P											
Butte-Silver Bow	P				S	M	F					DC
Cascade	P											
Chester	P											DC D
Chinook	P											DC
Choteau	P											DC
Circle	P											DC
Colstrip	P											DC D
Columbia Falls	P				M	F						DC
Columbus	P				M							DC
Conrad	P											DC
Culbertson	P											
Cut Bank	P				M							DC
Deer Lodge	P											DC
Denton	P											DC
Dillon	P				M							DC
Drummond	P											
East Helena	P				M							DC D
Ekalaka	P											D
Ennis	P											DC
Eureka	P											DC
Fairfield	P											DC D
Fairview	P											DC D
Forsyth	P											DC
Fort Benton	P				M							
Fort Peck	P											
Froid	P											
Geraldine	P											
Glasgow	P				M							DC
Glendive	P				M	F						DC
Grass Range	P											
Great Falls	P				M	F						DC
Hamilton	P				M							DC
Hardin	P											DC D
Harlem	P											
Harlowton	P											DC
Havre	P				M	F						DC
Helena	P				M	F						DC D
Hot Springs	P											DC
Hysham	P											
Kalispell	P				M	F						DC
Laurel	P				M							DC
Lewistown	P				M	F						DC
Libby	P				M							DC
Lima	P											
Livingston	P				M	F						DC
Malta	P											DC
Manhattan	P											
Medicine Lake	P											
Melstone	P											
Miles City	P				M	F						DC
Missoula	P				M	F						DC
Moore	P											
Nashua	P											
Phillipsburg	P											DC
Plains	P									M		
Plentywood	P											
Polson	P									M		DC D
Poplar	P											DC D
Red Lodge	P									M		DC
Richey	P											
Ronan	P											DC
Roundup	P											
Ryegate	P											
Saco	P											
Scobey	P											DC
Shelby	P											DC
Sheridan	P											D
Sidney	P											DC D
St Ignatius	P											
Stanford	P											
Stevensville	P											DC
Sunburst	P											
Superior	P											
Terry	P											
Thompson Falls	P									M		DC D
Three Forks	P											
Townsend	P											DC
Troy	P									M		D
Twin Bridges	P											DC
Valier	P											
Westby	P											
West Yellowstone	P									M		DC
White Sulphur Springs	P											DC
Whitefish	P									M	F	DC
Wibaux	P											
Winnett	P											
Wolf Point	P									M		DC

STATISTICAL SECTION

Schedule of Participating Employers (continued)

*P - Defined Benefit PERS *J - Judges *G - Game Wardens *H - Highway Patrol *S - Sheriffs *M - Police *F - Firefighters
 *DC - Defined Contribution PERS *D - 457

Colleges & Universities (5)							
Montana State University - Billings	P	G				DC	D
Montana State University - Bozeman	P	G				DC	D
Montana State University College of	P					DC	D
Montana State University - Northern	P					DC	D
University of Montana - Missoula	P	G				DC	D
High Schools (5)							
Beaverhead County	P					DC	
Jefferson County	P						
Powder River County	P					DC	
Powell County	P					DC	
Sweet Grass County	P					DC	
School Districts (235)							
SD 1, Big Timber	P					DC	
SD 1, Butte	P					DC	
SD 1, Choteau	P						
SD 1, Circle	P					DC	
SD 1, Clancy	P					DC	
SD 1, Corvallis	P					DC	
SD 1, Deer Lodge	P						
SD 1, Fort Benton	P					DC	
SD 1, Glasgow	P					DC	
SD 1, Glendive	P					DC	
SD 1, Heart Butte	P						
SD 1, Helena	P					DC	D
SD 1, Lewistown	P					DC	
SD 1, Miles City	P					DC	
SD 1, Missoula	P					DC	
SD 1, Phillipsburg	P						
SD 1, Plains	P						
SD 1, Red Lodge	P						
SD 1, Scobey	P					DC	
SD 1, Troy	P						
SD 1, West Valley School	P						
SD 1 & 7 Hysham	P						
SD 1 & 7, Townsend	P					DC	
SD 2, Alberton	P						
SD 2, Alder	P						
SD 2, Billings	P					DC	D
SD 2, Bridger	P						
SD 2, Deer Park	P					DC	
SD 2, Dodson	P					DC	
SD 2, Dupuyer	P						
SD 2, Frazer	P						
SD 2, Lavina K-12	P						
SD 2, Stevensville	P					DC	
SD 2, Sunburst	P					DC	
SD 2, Thompson Falls	P						
SD 2 & 3, Pryor	P						
SD 2 & 11, Big Sandy	P					DC	
SD 2 & 27, Lodge Grass	P						
SD 3, Belfry	P					DC	
SD 3, Billings	P						
SD 3, Cascade	P					DC	
SD 3, Fairmont Egan	P						
SD 3, Hamilton	P					DC	
SD 3, Manhattan	P						
SD 3, Ramsey	P						
SD 3, Superior	P					DC	
SD 3, Westby	P					DC	
SD 3, Wolf Point	P						D
SD 3 & 13, Fairview	P					DC	
SD 4, Canyon Creek	P						
SD 4, Divide	P						
SD 4, Forsyth	P					DC	D
SD 4, Hellgate	P					DC	
SD 4, Libby	P						
SD 4, Livingston	P						DC
SD 4, Swan River	P						DC
SD 4, Trinity	P						
SD 4 & 28, Highwood	P						DC
SD 4 & 47, Whitehall	P						
SD 5, Basin	P						
SD 5, Kalispell	P						DC
SD 5, Melrose	P						
SD 5, Park City	P						DC
SD 5, Sand Coulee	P						DC
SD 5, Sheridan	P						DC
SD 5, Sidney	P						
SD 5, Terry	P						DC
SD 6, Columbia Falls	P						DC
SD 6, Columbus	P						DC
SD 6, Lame Deer	P						DC
SD 6, Ryegate	P						DC D
SD 6, Trout Creek	P						
SD 6, Wibaux	P						D
SD 6 & 1, St Regis	P						DC
SD 7, Boulder	P						DC
SD 7, Bozeman	P						DC
SD 7, Charlo	P						DC
SD 7, Gardiner	P						DC
SD 7, Grant	P						
SD 7, Hinsdale	P						DC
SD 7, Joliet	P						D
SD 7, Lolo	P						DC
SD 7, Medicine Lake	P						DC D
SD 7, Twin Bridges	P						DC
SD 7, Victor	P						
SD 7 & 2, Savage	P						DC
SD 7 & 70, Laurel	P						DC
SD 8, Arlee	P						DC
SD 8, Elder Grove	P						DC
SD 8, West Glacier	P						
SD 8, White Sulphur Springs	P						
SD 9, Browning	P						DC
SD 9, Darby	P						DC
SD 9, Dixon	P						
SD 9, East Helena	P						DC D
SD 9, Opheim	P						
SD 9, Poplar	P						DC D
SD 9 & 9, Reed Point	P						
SD 10, Anaconda	P						DC
SD 10, Cayuse	P						
SD 10, Chinook	P						
SD 10, Conrad	P						DC
SD 10, Dillon	P						
SD 10, Noxon	P						DC
SD 11, Brorson	P						
SD 11, Ovando Elementary School	P						
SD 11, Potomac	P						
SD 11, Wise River	P						
SD 11 & 2, Drummond	P						
SD 12, Baker	P						D
SD 12, Harlem	P						DC
SD 12, Havre	P						
SD 12, Lima	P						DC
SD 12, Rosebud	P						
SD 12, Saco	P						DC
SD 12, Stanford	P						
SD 12 & 12, Molt	P						
SD J12-5, Shields Valley	P						
SD 13, Box Elder	P						

STATISTICAL SECTION

Schedule of Participating Employers (continued)

*P - Defined Benefit PERS *J - Judges *G - Game Wardens *H - Highway Patrol *S - Sheriffs *M - Police *F - Firefighters
 *DC - Defined Contribution PERS *D - 457

School Districts (continued)												
SD 13, Eureka	P											DC
SD 13, Fishtail	P											
SD 13, Lone Rock	P											DC
SD 13, Nashua	P											
SD 14, Bonner	P											DC
SD 14, Fortine	P											
SD 14, Hot Springs	P											
SD 14, Malta	P											
SD 14, Shelby	P											
SD 15, Custer	P											DC
SD 15, Cut Bank	P											DC
SD 15, Ekalaka	P											DC D
SD 15, Kalispell	P											DC
SD 15 & 6, Florence-Carlton	P											
SD 15 & 17, Willow Creek	P											
SD 16, Harlowton	P											DC
SD 17, Culbertson	P											DC
SD 17, Morin	P											
SD 17H, Hardin	P											DC
SD 18, Valier	P											
SD 18, Woodman	P											
SD 19, Colstrip	P											DC
SD 20, Garrison	P											
SD 20, Kila	P											
SD 20, Plentywood	P											DC
SD 20, Whitewater	P											
SD 21, Broadview	P											
SD 21, Fairfield	P											
SD 21, Galata	P											DC
SD 22, Cottonwood	P											
SD 23, Billings	P											
SD 23, Harrison	P											
SD 23, Lustre	P											
SD 23, Missoula	P											DC
SD 23, Polson	P											DC
SD 23, Roberts	P											
SD 24, Huntley Project	P											
SD 24, Three Forks	P											DC
SD 25, Hobson	P											DC
SD 26, Lockwood	P											DC
SD 26, Reichle	P											
SD 27, Elliston	P											DC
SD 27, Grass Range	P											
SD 27, Monforton	P											
SD 27, Montana City	P											
SD 28, St. Ignatius	P											DC
SD 28C, Dutton	P											
SD 29, Belt	P											
SD 29, Somers	P											
SD 29, Wyola	P											
SD 30, Power	P											
SD 30, Ronan	P											DC
SD 30 & 6, Fromberg	P											DC
SD 32, Clinton	P											DC
SD 32, Rapelje	P											DC
SD 32J, Ashland	P											DC
SD 33, Gold Creek	P											
SD 33, Swan Valley Elem	P											
SD 34, Seeley Lake	P											
SD 35, Gallatin Gateway	P											
SD 37, Shepherd	P											DC
SD 38, Big Fork	P											DC
SD 38, Lincoln	P											DC
SD 40, Frenchtown	P											DC
SD 41, Anderson	P											DC
SD 41, Pioneer	P											
SD 43, Lamotte	P											DC
SD 43, Turner	P											DC
SD 44, Belgrade	P											DC
SD 44, Geraldine	P											DC D
SD 44, Moore	P											
SD 44, Whitefish	P											
SD 45, Augusta	P											
SD 45, Golden Ridge	P											DC
SD 45, Wolf Point	P											DC
SD 47, Malmborg	P											
SD 48-1J & 48-2J, Chester	P											
SD 50, East Glacier	P											DC
SD 50, Evergreen	P											DC
SD 50, Hays	P											DC
SD 52, Absarokee	P											DC
SD 52, Ennis	P											DC
SD 52, Independent	P											DC
SD 55, Brockton	P											DC
SD 55, Plevna	P											DC D
SD 55, Roundup	P											DC
SD 55F, Sun River Valley	P											
SD 57, Havre	P											
SD 58, Geyser	P											
SD 58, Whitefish	P											
SD 58, Yellowstone	P											
SD 64, Bainville	P											DC
SD 64J, Melstone	P											
SD 65, Froid	P											
SD 69, West Yellowstone	P											DC
SD 72, Big Sky	P											DC
SD 73, Swan Lake	P											
SD 74, Roy	P											DC
SD 74, Vaughn	P											DC
SD 75, Amsterdam	P											
SD 75, Arrowhead	P											
SD 75, Greenfield	P											
SD 78J & 2, Richey	P											
SD 84, Denton	P											
SD 85, Ulm	P											DC
SD 86 & 4, Lambert	P											
SD 87, Rocky Boy	P											
SD 89, Smith Valley	P											DC
SD 99, North Star Schools	P											
SD 104, Spring Creek	P											
SD 115, Winifred	P											
SD 159, Winnett	P											
Great Falls Public Schools	P											DC
Jordan Public Schools	P											
Judith Gap Schools	P											
Havre Public Schools	P											DC D

STATISTICAL SECTION

Schedule of Participating Employers (continued)

*P - Defined Benefit PERS *J - Judges *G - Game Wardens *H - Highway Patrol *S - Sheriffs *M - Police *F - Firefighters
 *DC - Defined Contribution PERS *D - 457

Other Agencies (121)												
Anaconda Housing Authority	P											
Arlee-Lake County Water & Sewer	P											
Bear Paw Cooperative	P											
Bert Mooney Airport Authority	P									DC		
Big Country Educational Cooperative	P											
Big Fork County Water & Sewer	P											
Big Horn Cemetery District #1	P											
Big Sky County Water & Sewer District #363	P									DC	D	
Big Sky Resort Area District											D	
Big Sky Economic Development Authority	P									DC		
Big Sky Fire Department	P									DC		
Big Sky Special Education Cooperative	P											
Billings Housing Authority	P										D	
Bitterroot Conservation District	P											
Bitterroot Public Library	P									DC		
Bitterroot Valley Special Education Cooperative	P									DC	D	
Buffalo Rapids Irrigation District #1	P											
Buffalo Rapids Irrigation District #2	P											
Butte Housing Authority	P									DC		
Cascade County Conservation District	P											
Center for Mental Health	P											
Central Montana Learning Resource Ctr	P									DC		
Central Valley Fire District	P											
Chouteau County Conservation District	P											
Colstrip Park & Recreation Districts											D	
Corvallis County Sewer District	P											
Crown Hill Cemetery District	P											
Daly Ditches Irrigation District	P									DC		
Dawson County Urban Transportation District	P											
Dawson Community College	P									DC	D	
Deer Lodge County Head Start Program	P											
Drummond School & Community Library District	P											
Dry Prairie Rural Water District	P											
Dry Redwater Regional Water Authority	P											
Eastern Yellowstone County Special Education Cooperative	P											
Fallon Medical Complex	P											
Fergus County Conservation District	P											
Flathead County Special Education Cooperative										DC		
Flathead Conservation District	P									DC	D	
Flathead Emergency Communications Center	P									DC		
Flathead Municipal Airport Authority	P									DC		
Flathead Valley Community College	P									DC		
Fort Shaw Irrigation District	P									DC		
Lewis & Clark Library	P											DC
Liberty County Conservation District	P											
Lincoln Conservation District	P											
Lincoln County Rural Fire District	P											
Lockwood Rural Fire District #8	P											
Lockwood Water & Sewer District	P										DC	
Madison Conservation District	P										DC	
Malta Cemetery District	P											
Malta Irrigation District	P											
Meagher County Conservation District	P											
Miles Community College	P										DC	D
Milk River Joint Board Control	P											
Missoula Area Special Education Cooperative	P											
Missoula County Airport	P										DC	
Missoula Rural Fire District	P										DC	
North Central Learning Special Education Cooperative	P											
North Lake County Public Library	P										DC	
North Valley Public Library District	P											D
Northern Montana Joint Refuse Disposal District	P										DC	D
Northwest Montana Education Cooperative	P											
Pablo-Lake County Water District	P											
Park County Rural Fire District #1	P											
Park County Special Education Cooperative	P											
Petroleum County Conservation District	P											
Phillips Conservation District												DC
Pondera County Canal & Reservoir	P										DC	
Pondera County Cemetery District 2	P											
Port of Montana — Port Authority	P											
Prairie County Hospital District	P										DC	
Prairie View Special Services Coop												DC
Prickley Pear Special Services Cooperative	P										DC	
Rae Water & Sewer District	P											
Red Lodge Rural Fire District 7	P										DC	
Richland County Housing Authority	P										DC	
Riverside County Water & Sewer District No. 310	P											
Ronan Library District	P											
Roundup Community Library	P											
Sanders Special Education Cooperative	P											
Seeley Lake Missoula County Water District	P										DC	
Seeley Lake Rural Fire District	P											
Sheridan-Daniels Special Education Cooperative												DC
Sidney-Richland Airport Authority	P											
Somers County Water & Sewer District											DC	

STATISTICAL SECTION

Frenchtown Rural Fire District	P								
Gallatin Airport Authority	P					DC	D		
Gallatin Conservation District	P								
Gallatin-Madison Special Education Cooperative	P								
Gardiner-Park County Water District	P								
Glasgow Housing Authority	P								
Glasgow Irrigation District	P					DC			
Granite County Hospital & Nursing Home	P					DC			
Granite Conservation District	P								
Great Divide Education Services	P								
Great Falls International Airport	P					DC			
Great Falls Transit								D	
Greenfields Irrigation District	P					DC			
Hebgen Basin Rural Fire	P								
Helena Housing Authority	P					DC	D		
Helena Regional Airport Authority	P					DC	D		
Helena Valley Irrigation District	P								
Hill County Public Cemetery District	P					DC			
Hinsdale Water and Sewer District	P								
Human Resources Council District XI	P					DC			
Human Resources Council District XII	P					DC			
Hyalite Rural Fire District						DC			
Judith Basin Conservation District	P								
Lakeside County Water & Sewer	P							D	
Lakeview Cemetery District	P								
Larchmont Golf Course	P								
Lewis & Clark Conservation District	P								

Teton County Conservation District	P								
Thompson Falls Public Library	P							DC	
Upper Musselshell Conservation District	P								
Valley County Conservation District	P								
Victor Water & Sewer	P								
Whitefish Housing Authority	P								
Yellowstone City-County Health Dept	P							DC	
Yellowstone-West Carbon Special Education Cooperative	P								
Rural Fire Districts (11)									
Big Mountain Fire District								F	
Big Sky Fire Department								F	
Central Valley Fire District								F	
Columbus Rural Fire District #3								F	
Frenchtown Rural Fire District								F	
Hebgen Basin Rural Fire District								F	
Hyalite Rural Fire District								F	
Lockwood Rural Fire District #8								F	
Missoula Rural Fire District								F	
Red Lodge Rural Fire District 7								F	
Seeley Lake Rural Fire District								F	

Volunteer Fire Departments (235)*

Absarokee Volunteer Fire Dept	Fisher River Valley Volunteer Fire Dept	Phillips County Volunteer Fire Dept
Absarokee-Nye Volunteer Fire Dept	Floral Park Volunteer Fire Dept	Plains/Paradise Rural Volunteer Fire Dept
Alder Volunteer Fire Dept	Florence Volunteer Fire Dept	Plentywood Rural Volunteer Fire Dept
Amsterdam Rural Volunteer Fire Dept	Fort Benton Rural Volunteer Fire Dept	Plevna Volunteer Fire Dept
Arlee Volunteer Fire Dept	Fort Ellis Rural Volunteer Fire Company	Polson Rural Fire Company
Ashland Volunteer Fire Dept	Fort Shaw Rural Volunteer Fire Dept	Power Rural Volunteer Fire Dept
Augusta Volunteer Fire Dept	Frenchtown Rural Volunteer Fire Dept, Station 1	Racetrack Valley Fire District
Avon Volunteer Fire Dept	Frenchtown Rural Volunteer Fire Dept, Station 2	Racetrack Volunteer Fire Dept
Bad Rock Volunteer Fire Dept	Frenchtown Rural Volunteer Fire Dept, Station 3	Red Lodge Rural Volunteer Fire Dept, Company 1
Bainville Volunteer Fire Dept Dist #64	Frenchtown Rural Volunteer Fire Dept, Station 4	Red Lodge Luther Company 2
Baker Rural Volunteer Fire Dept	Frenchtown Rural Volunteer Fire Dept, Station 5	Redstone Rural Volunteer Fire Dept
Basin Volunteer Fire Dept	Gallatin Gateway Rural Volunteer Fire Dept	Roberts Rural Fire District #6
Baxendale Volunteer Fire Dept	Gallatin River Ranch Rural Fire District	Rocker Volunteer Fire Dept
Bear Paw Volunteer Fire Dept	Garrison Volunteer Fire Dept	Rollins Volunteer Fire Dept
Belfry Volunteer Fire Dept	Gateway Hose Volunteer Fire Company	Ronan Volunteer Fire Dept, Station 1
Belt Rural Volunteer Fire Dept	Georgetown Lake Fire Service Area	Ronan Volunteer Fire Dept, Station 2 (Pablo)
Big Arm Volunteer Fire Company	Geraldine Volunteer Fire Dept	Rudyard Volunteer Fire Dept
Big Butte Volunteer Fire Dept	Gore Hill Volunteer Fire Dept	Sand Coulee Volunteer Fire Dept
Big Sandy Volunteer Fire Dept	Grant Volunteer Fire Company	Savage Volunteer Fire Dept
Bigfork Volunteer Fire Dept, Company A	Grasshopper Valley Volunteer Fire Company	Seeley Lake Volunteer Fire Dept
Bigfork Volunteer Fire Dept, Company B	Greenough/Potomac Volunteer Fire Dept	Shepherd Volunteer Fire Dept
Birdseye Volunteer Fire Dept	Harrison Volunteer Fire Dept	Sheridan Volunteer Fire Dept
Black Eagle Volunteer Fire Dept	Hawk Creek Rural Volunteer Fire Dept	Simms Volunteer Fire Dept
Blaine County Rural Fire District, Chinook	Heath Rural Fire District	Smith Valley Volunteer Fire Dept
Blaine County Rural Fire District, Harlem	Helmville Volunteer Fire Dept	Somers Volunteer Fire Dept
Blaine County Rural Fire District, Hogeland	Heron Rural Fire District	Somers Volunteer Fire Dept, Lakeside Company
Blankenship Rural Volunteer Fire Dept	Highwood Volunteer Fire Dept	South Kalispell Volunteer Fire Dept
Blue Creek Volunteer Fire Dept	Hilger Rural Fire District	South Toole County Volunteer Fire Dept
Boulevard Volunteer Fire Dept	Hobson Rural Volunteer Fire Dept	St Ignatius Rural Volunteer Fire Dept
Brady Volunteer Fire Dept	Home Atherton Volunteer Fire Dept	St Labre Volunteer Fire Dept
Bridger Canyon Volunteer Fire Dept	Hot Springs Rural Fire District	St Marie Rural Volunteer Fire Dept
Broadwater County Rural Fire District, Duck Creek	Hungry Horse Volunteer Fire Dept	St Regis Volunteer Fire Dept
Broadwater County Rural Fire District, Radersburg	Hyalite Volunteer Fire Dept	Stevensville, Burnt Fork Company
Broadwater County Rural Fire District, Toston	Inerness Volunteer Fire Dept	Stevensville, Etna Company
Broadwater County Rural Fire District, Townsend	Irvine Flats Fire Company	Stevensville, Sunset Company
Broadwater County Rural Fire District, Winston	Jefferson City-Community Volunteer Fire Dept	Stevensville, Westside Company
Bull Lake Volunteer Fire Dept	Jefferson Valley Volunteer Fire Dept	Stockett Volunteer Fire Dept

STATISTICAL SECTION

Volunteer Fire Departments (continued)		
Canyon Creek Fire District	Joliet Volunteer Fire Dept	Sula Rural Volunteer Fire Dept
Carter Volunteer Fire Dept	Knees Volunteer Fire Dept	Sun River Volunteer Fire Dept
Cascade Rural Volunteer Fire Dept	Lewis & Clark County Rural Volunteer Fire Dept	Superior Volunteer Fire Dept
Centerville Volunteer Fire Dept	Libby Rural Volunteer Fire Dept	Swan Lake Volunteer Fire Dept
Central Valley Fire Dept, Company A	Libby Rural Volunteer Fire Dept, Company 2	Swan Valley Volunteer Fire Company
Central Valley Fire Dept, Company B	Lima Rural Volunteer Fire Dept	Sweet Grass Volunteer Fire Dept, Company A
Central Valley Fire Dept, Company C	Lincoln Volunteer Fire Dept	Sweet Grass, Volunteer Fire Dept, Company B
Charlo-Moiese Volunteer Fire Dept	Little Basin Creek Volunteer Fire Dept	Terra Verde Heights Volunteer Fire Dept
Chouteau Rural Volunteer Fire Dept	Lockwood Rural Fire District #8	Trego-Fortine-Stryker (TFS) Volunteer Fire Dept
Clancy Volunteer Fire Dept	Loma Rural Volunteer Fire Dept	Thompson Falls Rural Volunteer Fire Dept
Clarks Fork Rural Volunteer Fire Dept	Lost Creek/Antelope Gulch Volunteer Fire Dept	Three Forks Rural Volunteer Fire Dept
Clinton Volunteer Fire Dept	Manchester Volunteer Fire Dept	Three Mile Volunteer Fire Dept - Stevensville
Columbia Falls Rural Volunteer Fire Dept	Manhattan Rural Volunteer Fire Dept	Treasure County Rural Volunteer Fire Dept
Columbus Rural Volunteer Fire Dept	Marion Volunteer Fire Dept	Tri-Lakes Volunteer Fire Dept, Company A
Conrad Rural Volunteer Fire Dept	Martin City Volunteer Fire Dept	Tri-Lakes Volunteer Fire Dept, Company B
Cooke City-Silver Gate Volunteer Fire Dept	Marysville Volunteer Fire Dept	Trout Creek Rural Volunteer Fire Dept
Coram-West Glacier Volunteer Fire Dept	McCormick Rural Volunteer Fire Dept	Troy Rural Volunteer Fire Dept
Corvallis Rural Fire District	Medicine Lake Volunteer Fire Dept	Turner Volunteer Fire Dept
Craig Volunteer Fire Dept	Melrose Volunteer Fire Dept	Twin Bridges Volunteer Fire Company
Creston Volunteer Fire Dept, Company #1	Missoula Volunteer Fire Dept, Pumper Company 1	Ulm Volunteer Fire Dept
Creston Volunteer Fire Dept, Company #2 Lake Blaine	Missoula Volunteer Fire Dept, Pumper Company 2	Upper Yak Fire Service
Culbertson Volunteer Fire Dept	Missoula Volunteer Fire Dept, Pumper Company 3	Valier Volunteer Fire Dept
Darby Volunteer Fire Dept	Missoula Volunteer Fire Dept, Tanker Company 1	Valley County Long Run Volunteer Fire Dept
Dean Creek Volunteer Fire Dept	Missoula Volunteer Fire Dept, Tanker Company 2	Vaughn Rural Volunteer Fire Dept
Dearborn Volunteer Fire Dept	Missoula Volunteer Fire Dept, Tanker Company 3	Victor Rural Volunteer Fire Dept
Del Bonita Rural Volunteer Fire Company	Molt Volunteer Fire Dept	West Fork Rural Fire District
Denton Volunteer Fire Dept	Monarch Volunteer Fire Dept	West Glendive Volunteer Fire Dept
Dillon Rural Volunteer Fire Dept, Company A	Montana City Volunteer Fire Dept, Company 1	West Helena Valley Volunteer Fire Dept
Dillon Rural Volunteer Fire Dept, Company B	Montana City Volunteer Fire Dept, Company 2	West Valley Anaconda Volunteer Fire Dept
Dixon Rural Volunteer Fire Dept	Monteclito Volunteer Fire District	West Valley Kalispell Volunteer Fire Dept
Dutton Rural Volunteer Fire Dept	Moore Rural Volunteer Fire Dept	Wheatland County Volunteer Fire Dept
East Glacier Park Volunteer Fire Dept	Musselshell County Rural Volunteer Fire Dept	Wibaux Volunteer Fire Dept
East Missoula Rural Volunteer Fire Dept	North Toole County Volunteer Fire Dept	Willow Creek Rural Volunteer Fire Dept
East Valley Volunteer Fire Dept	Noxon Rural Fire District	Wilsall Fire Department
Eastgate Volunteer Fire Dept	Olney Rural Volunteer Fire Dept	Winifred Rural Volunteer Fire Dept
Edgar Volunteer Fire Dept	Opportunity Volunteer Fire Dept	Wisdom Rural Volunteer Fire Dept
Elk Park Volunteer Fire Dept	Ovando Volunteer Fire Dept	Wise River Volunteer Fire Company
Elliston Volunteer Fire Dept	Painted Rocks Fire & Rescue Volunteer Fire Company	Wolf Creek Volunteer Fire Dept
Ennis & Madison Valley Rural Volunteer Fire Dept	Paradise Valley Fire Service	Wolf Point Rural Volunteer Fire Dept
Eureka Rural Volunteer Fire Dept	Park City Rural Volunteer Fire Dept #2	Worden Fire Dept - Company 1
Evergreen Volunteer Fire Dept	Park County Fire Volunteer Dept	York Fire Service Area
Fairfield Rural Volunteer Fire Dept	Park County Rural Volunteer Fire Dept #1	
Ferndale Volunteer Fire Dept	Pendroy Rural Volunteer Fire Dept	



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