A Report
to the
Montana
Legislature

Financial-Compliance Audit

Teachers' Retirement Board

For the Fiscal Year Ended June 30, 2018

January 2019

Legislative Audit Division

18-09A

Legislative Audit Committee

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Financial-Compliance Audits

Financial-compliance audits are conducted by the Legislative Audit Division to determine if an agency's financial operations are properly conducted, the financial reports are presented fairly, and the agency has complied with applicable laws and regulations. In performing the audit work, the audit staff uses standards set forth by the American Institute of Certified Public Accountants and the United States Government Accountability Office. Financial-compliance audit staff members hold degrees with an emphasis in accounting. Most staff members hold Certified Public Accountant (CPA) certificates.

The Single Audit Act Amendments of 1996 and the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards require the auditor to issue certain financial, internal control, and compliance reports in addition to those reports required by *Government Auditing Standards*. This individual agency audit report is not intended to comply with these reporting requirements and is therefore not intended for distribution to federal grantor agencies. The Legislative Audit Division issues a statewide biennial Single Audit Report which complies with the above reporting requirements. The Single Audit Report for the two fiscal years ended June 30, 2017, was issued March 23, 2018. The Single Audit Report for the two fiscal years ended June 30, 2019, will be issued by March 31, 2020.

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LEGISLATIVE AUDIT DIVISION

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Deputy Legislative Auditors
Cindy Jorgenson
Joe Murray

January 2019

The Legislative Audit Committee
of the Montana State Legislature:

This is our financial-compliance audit report on the Teachers' Retirement Board, a component unit of the state of Montana, for the fiscal year ended June 30, 2018. Included in this report is the Independent Auditor's Report which contains an unmodified opinion, meaning the reader can rely on the information presented. This report contains one recommendation to the board related to compliance with state law in calculating the state's supplemental contributions to the system.

Also included in this report are the board prepared financial statements, related notes to the financial statements, required supplementary information, and supplementary information. Additional information about the Teachers' Retirement System's total and net pension liability, investments, contributions, and expense data is included in the required supplementary information and supplementary information.

The board's written response to the audit is included in the audit report at page C-1. We thank the executive director and his staff for their cooperation and assistance throughout the audit.

Respectfully submitted,

/s/ Angus Maciver

Angus Maciver
Legislative Auditor

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Appointed and Administrative Officials

			Term Expires
Teachers' Retirement Board	Kari Peiffer, Chair	Kalispell	July 2022
	Scott Dubbs, Vice Chair	Lewistown	July 2023
	Daniel Trost	Helena	July 2019
	Daniel Chamberlin	Helena	July 2020
	Janice Muller	Hamilton	July 2021
	Jeff Greenfield	Shepherd	July 2021

Administrative Officials

Shawn Graham, Executive Director

Tammy Rau, Deputy Executive Director

Nolan Brilz, Accounting and Fiscal Manager

Denise Pizzini, Chief Legal Counsel

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Montana Legislative Audit Division

Financial-Compliance Audit
Teachers' Retirement Board
For the Fiscal Year Ended June 30, 2018

January 2019 18-09A Report Summary

The state's general fund provides supplemental contributions to the system monthly based on the earned compensation of system members at specific employer types. Since July 1, 2009, the system has incorrectly included education cooperative and county employers when calculating the amount to be transferred from the state's general fund for the supplemental contributions. This has resulted in the general fund paying approximately $2.7 million more to the system than it is required to under state law.

Context

The Teachers' Retirement Board (board) administers the Teachers' Retirement System (system) which is a multiple-employer, cost-sharing, defined-benefit, public pension plan. The board is a fiduciary component unit of the state of Montana. Full-time members of the public teaching profession, including administrative and professional staff, are required, by law, to be members of the system. Certain employees of the Montana University Systems, hired after July 1, 1993, are not required to be members. These employees can choose between the Montana University System Retirement Program and the Teachers' Retirement System.

The total and net pension liabilities for fiscal year 2018 were approximately $6.0 billion and $1.9 billion, respectively. Employers participating in the system will report their proportionate share of this net pension liability in their financial statements. The total and net pension liabilities for fiscal year 2017 were approximately $5.6 billion and $1.7 billion, respectively.

In fiscal year 2018, the approximately 19,250 active members contributed $75.6 million while employers contributed $94.2 million, and supplemental contributions from the state totaled $45 million. In total, $214.8 million was contributed to the system. Approximately 15,930 retirees and beneficiaries received a total of $352.9 million in benefits. Net investment income of $343.7 million is used to make up the difference between contributions received and benefits paid. In fiscal year 2018 the market rate of return was 8.82 percent.

The Montana Constitution requires the system to be actuarially sound, but "actuarially sound" is not defined in the Constitution or in any state law applicable to the system. Board policy requires any unfunded liability of the system to amortize over a closed period of no more than 30 years. The most recent actuarial valuation, performed as of July 1, 2018, found the unfunded liability of the system amortizes within 31 years. Per the actuarial valuation, this increase in the amortization period is primarily due to changes in the actuarial assumptions and methods adopted by the board as a result of the experience study completed for the five-year period ended June 30, 2017. The remaining increase in the amortization period is because the actuarial return on assets was less than the actuarial assumption due to the smoothing of gains and losses over four years. Additionally,

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the actuary projects the amortization period will fall back below 30 years by the next valuation date, July 1, 2019, without any contribution rate increase.

Our audit work included reviewing support for contribution receipts and benefit payments, and considering the reasonableness of investment balances. We considered the control systems throughout the audit and evaluated compliance with selected laws and regulations. We reviewed the system's financial statements and note disclosures to determine if they were supported by the underlying accounting records and actuarial valuation as of June 30, 2018. Additional testing was performed over key employee data for retirement system members used by the actuary to calculate the total pension liability.

Results

The report contains one recommendation related to the system's compliance with the statutory requirements in calculating the state's required supplemental contribution to the system. Since July 1, 2009, the system has incorrectly included education cooperative and county employers when calculating the amount to be transferred from the state's general fund for the supplemental contributions. This has resulted in the general fund paying approximately $2.7 million more to the system than it is required to under state law.

We identified one instance of material noncompliance related to the system's unfunded liability amortization period exceeding 30 years, which is included in the Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards* on page B-1. We issued an unmodified opinion on the system's financial statements for fiscal year 2018. A reader can rely on the information presented in the statements.

Recommendation Concurrence	
Concur	0
Partially Concur	1
Do Not Concur	0

Source: Agency audit response included in final report.

For a complete copy of the report (18-09A) or for further information, contact the Legislative Audit Division at 406-444-3122; e-mail to **lad@mt.gov**; or check the web site at
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Call toll-free 1-800-222-4446, or e-mail **lad@mt.gov.**

Chapter I – Introduction

Audit Scope

We performed a financial-compliance audit of the Teachers' Retirement Board (board) for the fiscal year ended June 30, 2018. The objectives of our audit were to:

1. Determine if the Teachers' Retirement System's (system) financial statements present fairly, in all material respects, the financial position of the system and the results of operations for the fiscal year ended June 30, 2018.
2. Obtain an understanding of the board's controls to the extent necessary to support our audit of the system's financial statements and, if appropriate, make recommendations for improvement in the internal and management controls of the board.
3. Determine compliance with selected state laws and regulations.

Our audit work included reviewing support for contribution receipts and benefit payments, and considering the reasonableness of investment balances. We considered the control systems throughout the audit and evaluated compliance with selected laws and regulations. This included performing work over the computer system used by the board to electronically process contributions and benefits to determine the reasonableness of the data in this system. We reviewed the system's financial statements and note disclosures to determine if they were supported by the underlying accounting records and the actuarial valuation as of June 30, 2018. We also hired an independent actuary to provide actuarial expertise during the audit, including reviewing the actuarial valuation for reasonableness.

We traveled to 34 cities across the state and completed testing at approximately 39 different employers to determine the accuracy and completeness of important member data such as gender, birthdate, hire date, salary, and employment status that is used by the actuary to calculate the total pension liability. This is the fifth year we have performed such testing and we have visited a different group of individual employers each year. No material errors were identified in the testing of the census data that indicate the calculation of the total pension liability is inaccurate. We issued an unmodified opinion on the system's financial statements for fiscal year 2018, meaning a reader can rely on the information presented in the financial statements. This report contains one recommendation to the board.

Background

The board is a fiduciary component unit of the state of Montana. A component unit is a legally separate organization for which the state of Montana is financially accountable. The six-member board, appointed by the governor for five-year terms, governs the system. In addition to providing oversight to system personnel, the board's responsibilities include establishing rules and regulations necessary for the administration and operation of the system and hiring an actuary to provide consultation on the technical actuarial aspects of the retirement system. The executive director and board personnel are responsible for the daily administration of the system. At June 30, 2018, 20.50 full-time equivalent (FTE) positions were authorized for the system.

The system is defined as a multiple-employer, cost-sharing, defined-benefit, public pension plan. Full-time members of the public teaching profession, including administrative and professional staff, are required to be members of the system. Certain employees of the Montana University System hired after July 1, 1993, are not required to be members. The system had approximately 19,250 active contributing members and 15,700 terminated employees not yet receiving benefits at July 1, 2018. There were 15,933 retirees or their beneficiaries receiving retirement, disability, or survivor benefits as of July 1, 2018.

Actuarial Soundness

Article VIII, Section 15, of the Constitution of the state of Montana requires public retirement systems to be funded on an actuarially sound basis, but "actuarially sound" is not defined in the Constitution or in any state law applicable to the system. Teachers' Retirement Board policy further requires any unfunded liability of the system to amortize over a closed period of no more than 30 years. The most recent actuarial valuation, performed as of July 1, 2018, found the unfunded liability of the system amortizes within 31 years. We considered this to be material noncompliance as noted in the report on internal control and compliance starting on page B-1. Table 1 shows the amortization period for the system at June 30 for the past five years.

Table 1

Teachers' Retirement System
Amortization Periods

	Amortization Period
June 30, 2018	31
June 30, 2017	22
June 30, 2016	24
June 30, 2015	26
June 30, 2014	28

Source: Compiled by the Legislative Audit Division from Teachers' Retirement System actuarial information.

Per the actuarial valuation, the increase in the amortization period from 2017 to 2018 is primarily due to changes in the actuarial assumptions and methods adopted by the board as a result of the experience study completed for the five-year period ended June 30, 2017. This experience study is discussed further in the Pension Liability section below. The remaining increase in the amortization period is because the actuarial return on assets was less than the actuarial assumption due to the smoothing of gains and losses over four years. When determining the amortization period, the actuary smooths recent actuarial gains and losses on investments to reduce volatility in the valuation results as a portion of the actuarial gain or loss is recognized in each of the four years. For example, when the actuary calculated the amortization period for the fiscal year ended June 30, 2018, they considered one-fourth of the actuarial gains and losses for each of the fiscal years ended June 30, 2015, through June 30, 2018. An actuarial gain or loss on investments is the difference between the expected return on investments and the actual return on investments. If the actual return on investments is greater than the expected return on investments, then there is an actuarial gain. The smoothing methodology in the most recent valuation primarily considered losses. As a result, both the board and the actuary anticipate the valuations in the coming years to consider more gains than losses, and the actuary projects the amortization period will fall back below 30 years by the next valuation date, July 1, 2019, without any contribution rate increase.

It is important to note that the expectation for the amortization period to decrease in the next valuation is based on assumptions by the board and the actuary. If the actual experience differs from the assumptions due to market volatility, the amortization period may not decline.

Since board officials are monitoring the funding status of the system and the amortization period increase is expected to self-correct within the next year without any increases in contribution rates, we make no recommendation at this time. We will continue to monitor and report on the board's compliance with the constitutional requirement.

Pension Liability

The financial statement notes and required supplementary information disclose the total and net pension liabilities for the system as well as additional investment and contribution data. The total pension liability is the actuarial present value of projected benefit payments attributable to past periods of member service. The net pension liability is a measure of the extent to which the total pension liability is not covered by the fiduciary net position of the pension plan. The total pension liability and net pension liability for the system at June 30, 2018, were approximately $6.0 billion and $1.9 billion, respectively. Table 2 (see page 4) shows the total and net pension liabilities for the system at June 30, 2017, and 2018.

Table 2

Teachers' Retirement System Total and Net Pension Liability

(in thousands)

	Total Pension Liability	Net Pension Liability
June 30, 2018	$6,004,434	$1,856,110
June 30, 2017	$5,636,842	$1,686,080
Increase between years	$367,592	$170,030

Source: Compiled by the Legislative Audit Division from Teachers' Retirement System actuarial information.

During fiscal year 2018, the board had an experience study completed. The experience study looked at economic and demographic experience for the five-year period from July 1, 2013, to July 1, 2017. As a result of the study, the board adopted new actuarial assumptions. Significant assumption changes include decreasing the discount rate from 7.75 percent to 7.50 percent and the inflation rate from 3.25 percent to 2.50 percent. The board also updated salary increase, termination, retirement, and mortality rates.

Chapter II – Findings and Recommendations

Supplemental Contributions

The system paid state supplemental contributions for education cooperative and county employers that were not required by law.

The Teachers' Retirement System (system) is funded through contributions paid by active, working members of the system, employers of those members, and the state of Montana. In fiscal year 2018, the total amount for each type of contributions were approximately $75.6 million, $94.2 million, and $45 million, respectively.

The system has historically been solely funded by member and employer contributions, which are calculated based on a level percentage of each employee's pay. These contributions, along with investment income, are used to fund retirement benefits paid to current and future members as they retire.

During the 2007 Legislative Session, both the system and the legislature recognized that the current level of member and employer contributions were insufficient to appropriately fund the system. As one measure of addressing the system's funding, §19-20-607, MCA, was enacted to provide for supplemental contributions from the state of Montana. This law required the state's general fund to pay a monthly contribution of approximately 2 percent of the total employee compensation for active school district and community college members to the pension trust fund. Chapter 389, Section 9, Laws of 2013, amended this section to add an additional, yearly contribution of $25 million from the general fund.

The state law specifically states the supplemental contribution is to be paid on compensation of school district and community college members. In fiscal year 2018, the system included the compensation for 24 education cooperatives and 17 counties in the calculation. This resulted in the general fund paying approximately $300,000 more to the pension trust fund than it was required to in fiscal year 2018.

System staff stated that the law was intended to cover all employers whose contributions to the system are funded through county property tax assessments, which includes education cooperatives and counties. Staff further stated, in the 2009 Legislative Session, §19-20-605, MCA, was amended to clarify that education cooperatives and counties were subject to the employer contribution rate; and, while §19-20-607, MCA, was not amended to extend the state supplemental contribution to education cooperatives and counties, the intent was for this amendment to occur.

We reviewed documentation for past legislative sessions for evidence of the Legislature's intent. During the 2009 Legislative Session, the system proposed a housekeeping bill to make administrative changes to the system's laws. Included in the system's Executive Director's testimony for this bill was an item to clarify that the state general fund is also paying the supplemental contributions for education cooperatives and counties. Both the bill text and testimony discussed this item as part of changes to §19-20-605, MCA. This law outlines the employer contribution rates, but does not mention the state supplemental contributions. Additionally, §§19-20-605 and 19-20-607, MCA, do not reference each other; meaning the employers listed in one law cannot be applied to the other law. Although the system may have intended to amend the supplemental contributions in §19-20-607, MCA, to specifically include education cooperatives and counties, they neither proposed nor testified about an amendment to that section. We found no other documentation of the Legislature's intent to include the education cooperatives and counties in the supplemental contributions. Additionally, the system has not sought to amend this law to include the additional employers in any subsequent legislative session. As such, the education cooperative and county employers should not be included in the calculation for the state supplemental contribution.

Although the amount paid for education cooperative and county employers is approximately $300,000 in fiscal year 2018, the system has included the education cooperatives and counties in the state supplemental contribution calculation since the law went into effect on July 1, 2007. Between July 1, 2007, and June 30, 2009, the general fund paid approximately $600,000 in supplemental contributions to the pension trust fund. Given that the system specifically recognized education cooperatives and counties as separate employer types in 2009, these entities should not have been included in the state supplemental contribution calculation since July 1, 2009. This means the general fund has paid an approximate $2.7 million more than it was required to over the last nine fiscal years. Furthermore, §19-20-1202, MCA, requires the system to correct errors and, to the extent practicable, refund excess contributions. While the system could seek legislation to authorize the supplemental contributions for education cooperatives and counties, this would not remove their responsibility to reimburse the general fund for the overpaid contributions unless the law was made retroactive.

Recommendation #1

We recommend the Teachers' Retirement System:

A. *Reimburse the General Fund $2.7 million in improperly collected supplemental state contributions as required by §19-20-1202, MCA, and*

B. *Comply with state law by not including educational cooperatives and counties when determining the amount of the supplemental contribution to be paid by the state, or*

C. *Seek legislation to amend §19-20-607(1) to include educational cooperatives and counties.*

Independent Auditor’s Report and Board Financial Statements

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 of the Teachers' Retirement System (system), prepared by the Teachers' Retirement Board (board), a fiduciary component unit of the state of Montana, as of June 30, 2018, the related Statement of Changes in Fiduciary Net Position for the fiscal year then ended, and the related notes which collectively comprise the system's basic 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

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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 financial position of the Teachers' Retirement System as of June 30, 2018, and the changes in 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 the Change in Accounting Method on Investment Earnings section of Note B to the financial statements, there was a change in how investment income is recorded in fiscal year 2018. The board's investments are primarily held in the Consolidated Asset Pension Pool (CAPP) managed by the Montana Board of Investments (BOI), which was established by BOI in March 2017 by consolidating five previously existing pension asset pools. Unlike the prior pools and the Short-Term Investment Pool, CAPP investment earnings are reinvested in the pool instead of being distributed to participants, which increases the value of board's investment in CAPP. As a result, there is significantly less interest income in fiscal year 2018 than prior years, and there is no dividend income reported in fiscal year 2018.

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 this activity in Investment Earnings. 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 and Analysis, Schedule of Changes in Net Pension Liability-TRS Plan, Schedule of the Net Pension Liability-TRS Plan, Schedule of Investment Returns-TRS Plan, Schedule of Employer and Non-Employer Contributing Entities Contributions-TRS Plan, Schedule of Proportionate Share of the Net Pension Liability-TRS as Employer of PERS Plan, Schedule of Contributions-TRS as Employer of PERS Plan, Other Post-employment Benefits Plan Information, and the 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 Schedule of Administrative Expenses, Schedule of Investment Expenses, and Schedule of Payments to Consultants are presented for purposes of additional analysis and are not a required part of the financial statements. 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 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.

Respectfully submitted,

/s/ Cindy Jorgenson

Cindy Jorgenson, CPA
Deputy Legislative Auditor
Helena, MT

December 14, 2018

Management's Discussion and Analysis

The following discussion and analysis of the Montana Teachers' Retirement System's (TRS or the System) provides a narrative overview of TRS's financial activities for the fiscal year ended June 30, 2018.

Overview of the Financial Statements

The TRS financial statements, notes to the financial statements, and required supplementary information as of June 30, 2018 were prepared in conformity with GASB Statement No. 67, Financial Reporting for Pension Plans and Statement No. 68, Accounting and Financial Reporting for Pensions.

Because of the long-term nature of a defined benefit pension plan, financial statements alone cannot provide sufficient information to properly reflect the System's ongoing plan perspective. The Statement of Fiduciary Net Position reflects the resources available to pay benefits to retirees and beneficiaries. The Statement of Changes in Fiduciary Net Position presents the changes that occurred in those resources for the fiscal year ended June 30, 2018.

The Notes to the Basic Financial Statements provide additional information that is essential to gain a full understanding of the data provided in the basic financial statements. The required supplementary information (RSI) consists of the following four schedules of the defined benefit pension plan administered by TRS: changes of employers' net pension liability, employers' net pension liability, employer contributions, and the money-weighted rate of investment returns. The RSI also contains the following two schedules of the defined benefit pension plan that TRS participates in as an employer: proportionate share of the net pension liability, employer contributions.

Financial Highlights

- The TRS fiduciary net position increased by $293.9 million from $3.951 billion at 06/30/17 to $4.148 billion at 06/30/18, representing an increase of 7.8% from year to year.
- The TRS plan net investment income was $343.7 million at 06/30/18 compared to $427.0 million at 06/30/17.
- The TRS plan rate of return on investments during FY 2018 was 8.8% compared with FY 2017 rate of return of 11.9%.
- The TRS benefit payments paid to benefit recipients increased 5.7% from $333.6 million to $352.9 million for FY 2018, which is consistent with previous increases.
- Withdrawals from the System decreased by 28.4% from $7.4 million in FY 2017 to $5.3 million in FY 2018.

Condensed Financial Information

For comparative purposes, the Condensed Financial Information below for the fiscal year ended June 30, 2018 is presented with the previous fiscal year's financial information.

Fiduciary Net Position
(in millions)

	FY2018	FY2017	Percent Change
Cash/Short-Term Investments	$ 93.5	$ 108.5	(13.8%)
Receivables	21.7	21.0	3.3%
Investments (Fair Value)	4,058.5	3,842.8	5.6%
Other Assets (Net)	2.5	2.6	(3.9%)
Total Assets	4,176.2	3,974.9	5.1%
Deferred Outflows	0.5	0.3	33.3%
Liabilities	28.4	24.5	15.9%
Deferred Inflows	0.1	0.1	0.0%
Net Position	$ 4,148.3	$ 3,950.7	5.0%

Change in Fiduciary Net Position
(in millions)

	FY2018	FY2017	Percent Change
Additions:			
Employer Contributions	$ 94.2	$ 91.9	2.5%
Plan Member Contributions	75.6	74.3	1.8%
Other Contributions	45.0	44.4	1.4%
Net Investment Income	343.7	427.0	(19.5%)
Total Additions	558.5	637.6	(12.4%)
Deductions:			
Benefit Payments	352.9	333.6	5.8%
Withdrawals	5.3	7.4	(28.4%)
Administrative and Other Expenses	3.0	2.7	11.1%
Total Deductions	361.2	343.7	5.1%
Change in Net Position	$ 197.3	$ 293.9	(32.9%)

Financial Analysis

- The increase in Employer Contributions was due in part to HB 377 provisions that took effect in FY 2014, which increase Employer contribution rates by 0.10% each year for ten years.
- The increase in Employer, Plan Member, and Other Contributions are also due do to an increase in Reportable Compensation of the System as a whole.
- The US economy and capital market conditions experienced another strong year in FY 2018. However, FY 2017 was much stronger for capital market conditions. Therefore the Net Investment Income decreased year over year.
- Net investment income for FY 2018 was down from the previous fiscal year largely due to lower returns in foreign equities and fixed income securities.
- The increase in benefit payments from year-to-year reflects an increase in the number of retirees and beneficiaries,

plus the 1.5% guaranteed annual benefit adjustment. The increase is comparable to previous fiscal years, although it is trending upward.

- Administrative Expenses for FY 2018 were 0.81% of Benefit Payments. By the laws set forth in the Montana Code Annotated, TRS is required to keep Administrative Expenses under 1.5% of Benefit Payments.

Overview of the Actuarial Funding

An actuarial valuation of the System is performed annually. As of July 1, 2018, the date of the most recent actuarial valuation, the funded ratio of the System was 68.19%. This was an decrease from the System's July 1, 2017 valuation funded ratio of 70.49%. At July 1, 2018 the amortization period of the System was 31 years, as compared to 22 years at July 1, 2017.

In determining contribution rates, an actuarial value of assets is used rather than a market value of assets. The actuarial value of assets is based on a smoothed income investment rate. The TRS plan experienced an actuarial asset loss over the last year. The market value of assets had a positive return of 8.82% net of investment and operating expenses. The actuarial value of assets earned 6.85%, which is 0.90% less than the actuarial assumption of 7.75%. Actuarial gains or losses result when the return on the actuarial value of assets differs from the actuarial investment return assumption.

MCA §19-20-201 requires the actuarial report to show how market performance is affecting the actuarial funding of the retirement system. The July 1, 2018 market value of assets is $53.9 million greater than the actuarial value of assets. This is due to the smoothing of investment gains and losses over a four year period. This $53.9 million in unrecognized asset gains will either offset any future investment losses or if there are none, decrease the amortization period of the UAAL in future valuations. If the market value of assets was used, the amortization period of the System would be 29 years, and the funded ratio would be 69.09%.

The following table compares the annual returns for the past three fiscal years.

Fiscal Year	Market Return	Actuarial Return	Actuarial Return Over/(Under) 7.75%
7/01/2015-6/30/2016	2.08%	8.79%	1.04%
7/01/2016-6/30/2017	11.92%	8.24%	0.49%
7/01/2017-6/30/2018	8.82%	6.85%	(0.90)%

As of July 1, 2018, the System's Actuarial Value of Assets increased by $121 million from $3.974 billion at July 1, 2017 to $4.094 billion at July 1, 2018. The Actuarial Accrued Liability at July 1, 2018 was $6.004 billion. This resulted in an Unfunded Actuarial Accrued Liability (UAAL) of $1.910 billion at July 1, 2018. This was a net increase in the unfunded position of $247 million compared to July 1, 2017.

TEACHERS' RETIREMENT SYSTEM
A COMPONENT UNIT OF THE STATE OF MONTANA
STATEMENT OF FIDUCIARY NET POSITION
AS OF JUNE 30, 2018

	2018
Assets	
Cash/Cash Equivalents-Short Term Investment Pool (Note B)	$93,460,641
Receivables:	
Accounts Receivable	21,518,287
Interest Receivable	159,755
Total Receivables	$21,678,041
Investments, at Fair Value: (Note B)	
Equity in Pooled Investments	$4,032,277,147
Securities Lending Collateral (Note B)	26,245,686
Total Investments	$4,058,522,833
Assets Used in Plan Operations:	
Land and Buildings	$193,844
Less: Accumulated Depreciation	(150,545)
Equipment and Intangible Assets	1,721,073
Less: Accumulated Depreciation	(16,286)
Construction Work in Progress	786,729
Total Other Assets	2,534,815
Total Assets	$4,176,196,331
Pension Deferred Outflows (Note E)	$436,537
OPEB Deferred Outflows (Note G)	$121,739
Liabilities	
Accounts Payable	$130,252
Securities Lending Liability (Note B)	26,245,686
Compensated Absences (Note B)	156,460
OPEB Implicit Rate Subsidy (Note G)	138,145
Net Pension Liability (Note E)	1,745,607
Total Liabilities	$28,416,150
Pension Deferred Inflows (Note E)	$14,251
OPEB Deferred Inflows (Note G)	-
Net Position Restricted for Pension Benefits	$4,148,324,206

The accompanying Notes to the Financial Statements is an integral part of this financial statement.

TEACHERS' RETIREMENT SYSTEM
A COMPONENT UNIT OF THE STATE OF MONTANA
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED JUNE 30, 2018

	2018
Additions	
Contributions:	
Employer	$94,233,469
Plan member	75,594,333
Other	45,005,672
Total Contributions	$214,833,474
Miscellaneous Income	$31,829
Investment Income:	
Net Appreciation/(Depreciation) in Fair Value of Investments	$366,893,815
Investment Earnings	1,543,369
Security Lending Income (Note B)	794,534
Investment Income/(Loss)	369,231,719
Less: Investment Expense	(25,250,712)
Less: Security Lending Expense (Note B)	(317,054)
Net Investment Income/(Loss)	343,663,953
Total Additions	558,529,256
Deductions	
Benefit Payments	$352,854,025
Withdrawals	5,322,642
Administrative Expense	2,849,527
OPEB Expense (Note G)	(89,962)
Pension Expense (Note E)	247,739
Total Deductions	$361,183,972
Net Increase (Decrease) in Fiduciary Net Position	$197,345,284
Net Position Restricted for Pension Benefits Beginning of the Year	$3,950,761,443
Prior Period Adjustment (Note B)	217,479
Net Position End of Year	$4,148,324,206

The accompanying Notes to the Financial Statements is an integral part of this financial statement.

TEACHERS' RETIREMENT SYSTEM
A COMPONENT UNIT OF THE STATE OF MONTANA
NOTES TO THE FINANCIAL STATEMENTS
FISCAL YEAR ENDED JUNE 30, 2018

Note A. Description of the Plan

Teachers' Retirement System (TRS or the System) is a mandatory-participation multiple-employer cost-sharing defined-benefit public pension plan that provides retirement services to individuals employed as teachers, administrators, and in other professional and skilled positions employed in public education in Montana.

The Teachers' Retirement System Board (the Board) and staff administer the retirement system in conformity with the laws set forth in Title 19, chapter 20 of the Montana Code Annotated, and administrative rules set forth in Title 2, chapter 44 of the Administrative Rules of Montana. Additional information pertaining to membership, benefit structure, and prior years' actuarial valuations, as well as links to applicable statutes and administrative rules may be obtained by visiting the TRS web site at www.trs.mt.gov.

The Board is the governing body of the System. The System was established by the State of Montana in 1937 to provide retirement, death, and disability benefits to individuals employed in public education in Montana. TRS as an employer does not participate in the plan and acts only as the administrator of the plan.

Board Composition

The Board consists of six members, all appointed by the Governor. Three Board members must be teaching professionals who, when appointed, are active members of TRS; at least one of the active members must be an active classroom teacher. One Board member must be a retired teacher who was a member of TRS at the time of retirement. Two Board members are appointed from the public at large. TRS Board members serve staggered five-year terms. Three Board members constitutes a quorum.

Reporting Entities

At June 30, 2018, the number and type of reporting entities participating in the system were as follows:

Local School Districts and Co-ops	352
Community Colleges	3
University System Units	2
State Agencies	8
Total	365

System Membership

At July 1, 2018, the date of the most recent actuarial valuation, system membership consisted of the following:

Retirees and Beneficiaries Currently Receiving Benefits	15,933
Terminated Members:	
Vested	1,772
Non-vested	13,967
Active Plan Members:	
Full-Time	13,027
Part-Time	6,240
Total Membership	50,939

Summary of Benefits

Through June 30, 2013, all members enrolled in TRS participated in a single-tiered plan (Tier One). In the Tier One plan, employees with a minimum of 25 years of service or who have reached age 60 with 5 years of service are eligible to receive an annual retirement benefit equal to creditable service years divided by 60 times the average final compensation. Final compensation is the average of the highest three consecutive years of earned compensation. Benefits fully vest after 5 years of creditable service. Vested employees may retire at or after age 50 and receive reduced retirement benefits.

Beginning July 1, 2013, new members in TRS participate in a second benefit tier (Tier Two), which differs from Tier One as follows:

- Tier Two uses a 5-year average final compensation (AFC) (as opposed to 3-year AFC in Tier One);
- Tier Two provides for unreduced service retirement benefits at age 60 with 5 years of creditable service or at age 55 with at least 30 years of creditable service (rather than at age 60 with 5 years of service or at any age with creditable service in 25 years in Tier One);
- Tier Two provides for early retirement benefits with 5 years of creditable service at age 55 (rather than age 50 in Tier One);
- Tier Two has a one percent higher normal employee contribution rate (though a temporary 1% supplemental employee contribution rate is also now currently in place for Tier One members), and
- Tier Two provides for an enhanced benefit calculation - 1.85% x AFC x years of creditable service — for members retiring with at least 30 years of creditable service and at least 60 years of age (rather than 1.6667% x AFC x years of creditable service).

A guaranteed annual benefit adjustment (GABA) is payable on January 1st of each calendar year for each retiree who has received at least 36 monthly retirement benefit payments prior to that date. The GABA is applicable to both Tier One and Tier Two members. The GABA is calculated at 1.5% of the benefit payable as of January 1st. For Tier Two members, the GABA to be calculated each year may vary from 0.5% to 1.5% based on the retirement system's funding status and the period required to amortize any unfunded accrued actuarial liability as determined in the prior actuarial valuation.

Overview of Contributions

The TRS funding policy provides for monthly employee and employer contributions at rates specified by state law. Plan members, for the fiscal year ending June 30, 2018, were required to contribute 8.15% of their earned compensation. School district and community college employers were required to contribute 8.87% of earned compensation. University System and State Agency employers were required to contribute 11.25% of earned compensation.

The TRS funding policy also provides for monthly supplemental contributions at rates specified by state law. The State's general fund contributes an additional 2.38% of earned compensation for school district and community college employers each month. The State's general fund also contributes an additional 0.11% of total earned compensation for all TRS members each month. These monthly general fund contributions along with an annual lump-sum contribution of $25 million from the general fund make up the "Other" contribution category on the financial statements.

Each employer in the Montana University System contributes to TRS a supplemental employer contribution currently at a rate of 4.72% of the total compensation for employees participating in the Montana University System Retirement Program (MUS-RP).

Contribution rates for FY 2017, 2018, and 2019 for school district and community college employers are listed below.

Fiscal Year	Members	Employers	General Fund	Total
July 1, 2016– June 30, 2017	8.15%	8.77%	2.49%	19.41%
July 1, 2017– June 30, 2018	8.15%	8.87%	2.49%	19.51%
July 1, 2018– June 30, 2019	8.15%	8.97%	2.49%	19.61%

Contribution rates for FY 2017, 2018, and 2019 for state agencies and university system employers are listed below.

Fiscal Year	Members	Employers	General Fund	Total
July 1, 2016– June 30, 2017	8.15%	11.15%	0.11%	19.41%
July 1, 2017– June 30, 2018	8.15%	11.25%	0.11%	19.51%
July 1, 2018– June 30, 2019	8.15%	11.35%	0.11%	19.61%

Pursuant to §19-20-609, MCA, the employer contribution rate will increase by 0.10% each year beginning July 1, 2014 through fiscal year 2024.

Note B. Summary of Significant Accounting Policies

Basis of Accounting

TRS, a fiduciary component unit Pension Trust Fund of the State of Montana financial reporting entity, prepares its financial statements using the accrual basis of accounting. Employee and employer contributions are recognized as revenues in the period when due pursuant to statutory requirements and investment income is recognized when earned. Benefit and withdrawal payments are recorded in the period in which the liabilities are due and payable.

The System adheres to all applicable Governmental Accounting Standards Board (GASB) Statements.

GASB Statement No. 67 which was adopted during the year ended June 30, 2014, addresses accounting and financial reporting requirements for pension plans. The statement required changes in presentation of the financial statements, notes to the financial statements, and required supplementary information. Significant changes included an actuarial calculation of total and net pension liability. It also included comprehensive footnote disclosures regarding the pension liability, the sensitivity of the net pension liability to the discount rate, and increased investment activity disclosures. The implementation of GASB Statement No. 67 did not significantly impact the accounting for accounts receivable and investment balances. The total pension liability, determined in accordance with GASB Statement No. 67, is presented in Note D.

GASB Statement No. 68 which was adopted during the year ended June 30, 2015, addresses accounting and financial reporting requirements for public pension plan employers. As an active employer in the Public Employees' Retirement System (PERS), TRS is required to comply with GASB Statement No. 68. The statement requires additional notes to the financial statements and required supplementary information. Significant changes include recording and reporting of pension amounts including: Net Pension Liability, Pension Expense, and Deferred Inflows and Outflows of resources. The GASB Statement No. 67 actuarial calculation of total and net pension liability for PERS was allocated to each employer of PERS based on the employer contributions. The allocated pension amounts, determined in accordance with GASB Statement No. 68, are presented in Note E.

GASB Statement No 75 was adopted for the year ended June 30, 2018. In accordance with GASB Statement No. 75, Accounting and Financial Reporting for Post employment Benefits Other than Pensions, TRS 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 employers' proportionate share of the collective Total OPEB Liability, OPEB Expense, and Deferred Outflows and Deferred Inflows of Resources associated with OPEB. The allocated OPEB amounts, determined in accordance with GASB Statement No. 75, are presented in Note G.

Prior Period Adjustments

Prior period adjustments relate to corrections of errors and changes in accounting policy from prior periods. The System 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 Post employment 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 TRS. Due to the GASB 75 implementation the State of Montana's Total OPEB Liability was drastically reduced from the previous OPEB liability measurement. This reduction in the Total OPEB Liability created an increase to the TRS Net Position in the amount of $217,479.

Compensated Absences

Compensated absences represent 100 percent of accrued vacation and 25 percent of accrued sick leave for TRS personnel. Compensated absences were recorded as a liability of $156,460 at June 30, 2018.

Investments

The Montana Board of Investments (BOI) manages the State's Unified Investment Program, which includes the TRS plan investments as required by §19-20-501, MCA. Per the Montana Constitution, Article VIII Section 13(3), investment of TRS assets shall be managed in a fiduciary capacity in the same manner that a prudent expert acting in a fiduciary capacity and familiar with the circumstances would use in the conduct of an enterprise of a similar character with similar aims. Investments administered by BOI for TRS are subject to BOI's investment risk policies. BOI's stand-alone financial statements and information on investment policies, investment activity, investment management fees, and a listing of specific investments owned by the pooled asset accounts can be obtained from the Board of Investments, P.O. Box 200126, Helena, MT 59620-0126. The BOI website can be found at investmentmt.com.

At June 30, 2018, TRS investments include the Short-Term Investment Pool (STIP) and the Consolidated Asset Pension Pool (CAPP).

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

Consolidated Asset Pension Pool (CAPP)
CAPP invests directly in the underlying Pension Asset Classes (PACs) on behalf of the nine retirement systems within the BOI Board-approved asset allocation ranges. Each PAC has an underlying set of investment objectives and investment guidelines. Below is a short description of each PAC within the CAPP. 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 Board established guidelines.

Domestic Equity PAC
Invests primarily in US 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.

Diversified Strategies PAC
The Diversifying Strategies Asset Class 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).

TRS Investment Portfolio
June 30, 2018

Investment		Book Value		Fair Value
Short-Term Investment Pool	$	83,243,943	$	83,249,895
Consolidated Asset Pension Pool		3,590,314,956		4,032,277,147
Total	$	3,673,558,899	$	4,115,527,042

Consolidated Asset Pension Pool (CAPP)
CAPP is an internal investment pool managed and administered under the direction of the Montana Board of Investments (BOI) as statutorily authorized by the Unified Investment Program. CAPP is a commingled internal investment pool and only the retirement systems can participate in CAPP. As necessary, 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 NAV per share (or its equivalent) of the investment.

Short Term Investment Pool (STIP)
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 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. The hierarchy is no longer specific to pools. BOI displays the hierarchy in the aggregate for all investment pools.

Investments Measured at Fair Value

Investments		6/30/2018	Fair Value Measurements Using "Quoted Prices in Active Markets for Identical Assets (Level 1)"	"Significant Other Observable Inputs (Level 2)"	"Significant Unobservable (Level 3)"
Total Investments by fair value level	$	-	$ -	$ -	$ -
Investments measured at the NAV					
Consolidated Asset Pension Pool (CAPP)		4,032,277,147			
Short Term Investment Pool (STIP)		83,249,895			
Total investments measured at the NAV		4,115,527,042			
Total investments measured at fair value	$	4,115,527,042			

Investments Measured at Net Asset Value

Investments		Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Consolidated Asset Pension Pool (CAPP)		4,032,277,147	-	Monthly	30 days
Short Term Investment Pool (STIP)		83,249,895	-	Daily	1 day
Total investments measured at the NAV	$	4,115,527,042			

Investment Risks

The investment risks for the pooled investments that TRS participates in are described in the following paragraphs. Investments are administered by BOI for TRS as part of the State of Montana's Unified Investment Program, and BOI is responsible for setting investment risk policies. BOI's stand-alone financial statements detail the investment risks associated with the securities held by the pools.

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 pool has 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 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-US securities in a foreign currency.

CAPP includes assets subject to foreign currency risk. TRS' position in CAPP is approximately 35.7% at June 30, 2018. The Montana BOI CAPP investments in EURO currency had a fair value of approximately $192,114,000 at June 30, 2018. The Montana BOI CAPP had cash and securities with a foreign currency value of approximately $713,128,000 at June 30, 2018.

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:

- 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 TRS investments subject to credit and interest rate risk at June 30, 2018 are categorized in the following table:

Investment	Fair Value 6/30/18	Credit Quality Rating 6/30/18	Weighted Average Maturity 6/30/18
STIP	83,249,895	NR	0.13 yrs

With the exception of the U.S. Government securities, the fixed income instruments have credit risk as measured by major credit rating services. Obligations of the U.S. Government or obligation explicitly guaranteed by the U.S. Government are not considered to have credit risk and do not require disclosure of credit quality. STIP investments have been rated by investment security type. However, STIP as an external investment pool, has not been rated.

Securities Lending
The Board is authorized by law to lend its securities and has contracted with the custodial bank, to lend the Board'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. On any day, including June 30th, the markets may move in a positive or negative direction resulting in under or over collateralization. The custodial bank compensates for market movement by recalculating on the following business day to meet the collateralization requirements. The Board and the custodial bank split the earnings 80% and 20% respectively, on securities lending activities. The Board retains all rights and risks of ownership during the loan period. The custodial bank indemnifies the Board's credit risk exposure to the borrowers.

Change in Accounting Method on Investment Earnings
Prior to June 30, 2018 TRS included investment gains/losses as Investment Earnings on the Statement of Changes in Fiduciary Net Position. However, according to GASB Codification I50.131, realized gains and losses should not be displayed separately from the net increase/(decrease) in fair value of investments. Also, due to the BOI decision to move from the five investment pools to the one CAPP pool in March 2017, Investment Earnings from the sale of investments and dividend payments are no longer distributed to TRS as earnings. Rather, those earnings are immediately reinvested and therefore never truly realized as Investment Earnings. Therefore, at June 30, 2018, the decision was made to include investment gains/losses with the line labeled Net Appreciation/Depreciation in Fair Value of Investments. This resulted in a large increase in Net Appreciation/(Depreciation) in Fair Value of Investments and an equal decrease in Investment Earnings. The Net Investment Income/(Loss) was not affected due to this change in accounting methodology.

Note C. Property and Equipment

Property and equipment consist of the amounts shown in the following table as of June 30, 2018. Assets under $5,000 are expensed in the year purchased. Assets valued at $5,000 or more are recorded at cost less straight-line depreciation over the estimated useful life of five to ten years. There were no significant leases as of June 30, 2018. TRS completed Phase II of its upgrade to the pension administration system project (M-Trust) in FY 2017. The system upgrade was implemented on a modular basis with all modules completed by February 2017. The cost of implementing Phase II of the M-Trust project less Accumulated Depreciation as of June 30, 2018 is shown below and on the Basic Financial Statements in the Intangible Assets line item.

In FY 2017 TRS initiated Phase III of the upgrade to the pension administration system project (M-Trust). The system upgrade will be completed by December 2019. The cost of implementing Phase III of the M-Trust project as of June 30, 2018 is shown below and on the Basic Financial Statements in the Construction Work In Progress line item. The upgrade will be amortized once the project is complete. The Board approved a $1.3 million investment in the Phase III system upgrade in the spring of 2017. The Board approved an additional $0.5 million in the summer of 2018 bringing the Phase III total budget to $1.8 million.

		2018
Land and Buildings	$	193,844
Less: Accumulated Depreciation		(150,545)
Equipment		16,286
Less: Accumulated Depreciation		(16,286)
Intangible Assets		1,704,787
Construction Work in Progress	$	786,729
Net Property and Equipment	$	2,534,815

Note D. Net Pension Liability — TRS Plan Reporting

Net Pension Liability — TRS Plan

Fiscal Year Ending June, 30 2018		
Total Pension Liability	$	6,004,434,112
Fiduciary Net Position	$	4,148,234,206
Net Pension Liability	$	1,856,109,906
Ratio of Fiduciary Net Position to Total Pension Liability		69.09%

The net pension liability, the retirement system's total pension liability (TPL) determined in accordance with GASB No. 67 less the fiduciary net position (FNP), as of June 30, 2018, is as shown above. July 1, 2018 is the date of the actuarial valuation upon which the TPL is based. Roll forward procedures were not used.

Actuarial valuation of the ongoing System involves estimates of the reported amounts and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The most recent experience study was performed in the spring of 2018 for the five year period ending July 1, 2017. The Schedule of Net Pension Liability presents multi-year trend information about whether the plan's fiduciary net position is increasing or decreasing over time relative to the total pension liability. This schedule is presented in the Required Supplementary Information section.

Summary of Actuarial Assumptions – TRS Plan

The TPL as of June 30, 2018, is based on the results of an actuarial valuation date of July 1, 2018. There were several significant assumptions and other inputs used to measure the total pension liability. The actuarial assumptions used in the July 1, 2018, valuation were based on the results of the last actuarial experience study, dated May 3, 2018. Among those assumptions were the following:

Salary Increases*	3.25% to 7.76%
Investment Return	7.50%
Price Inflation	2.50%
Growth in Membership	0.00%
Post-retirement Benefit Increases (Starting Three Years After Retirement)	1.50%
Interest on Member Accounts	5.00%

**Total Wage Increases include 3.25% general wage increase assumption and a range of 0.00% to 4.51% merit and longevity increases based on years of service.*

Target Allocations – TRS Plan

Asset Class	Target Asset Allocation (a)	Long-Term Expected Real Rate of Return Arithmetic Basis (b)	Portfolio Long-Term Expected Rate of Return* (a) x (b)
Domestic Equity	35.00%	6.68%	2.34%
International Equity	18.00%	6.98%	1.26%
Private Equity	10.00%	10.15%	1.02%
Natural Resources	3.00%	4.09%	0.12%
Core Real Estate	7.00%	5.38%	0.38%
TIPS	3.00%	1.78%	0.05%
Intermediate Duration Bonds	19.00%	2.15%	0.41%
High Yield Bonds	3.00%	4.36%	0.13%
Cash	2.00%	0.81%	0.02%
Totals	100.00%		5.73%
		Inflation	2.50%
		Portfolio long-term expected rate of return	*8.23%*

**The portfolio long-term expected rate of return above of 8.23% differs from the total TRS long-term rate of return assumption of 7.50% (Discount Rate). The assumed rate of 7.50% is comprised of a 2.50% inflation rate and an expected long-term real rate of return of 5.00%.*

The long-term expected return on plan assets is reviewed as part of the regular experience studies prepared for the System. The most recent analysis, performed for the period covering fiscal years 2013 through 2017, is outlined in a report dated May 3, 2018. 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 System's investment consultant. These 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 long-term rate of return assumption is intended to be a long-term assumption (30 to 50 years) and 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 average long term capital market assumptions published in the Survey of Capital Market Assumptions 2017 Edition by Horizon Actuarial Service, LLC, yield a median real return of 5.07%. Our recommended assumption of 5.00% for the real return reflects granting each source some degree of credibility. Combined with the 2.50% inflation assumption, the resulting nominal return is 7.50%.

The discount rate (long-term rate of return assumption) used to measure the total pension liability was 7.50%. The projection of cash flows used to determine the discount rate assumed that contributions from participating plan members, employers, and non-employer contributing entities will be made based on the Board's funding policy, which establishes the contractually required rates under Montana State Code. These rates are shown in the following tables. In addition to these contributions the State general fund will contribute $25 million annually to the System payable July 1st of each year.

Based on those assumptions, the System's fiduciary net position was projected to be adequate to make all the projected future benefit payments of current plan members through the year 2126. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability. No municipal bond rate was used in determining the discount rate.

History of Legislated Contributions – School District and Other Employers
by percent of covered payroll

	Members	Employers	General Fund	Total Employee
Prior to July 1, 2007	7.15%	7.47%	0.11%	14.73%
July 1, 2007 to June 30, 2009	7.15%	7.47%	2.11%	16.73%
July 1, 2009 to June 30, 2013	7.15%	7.47%	2.49%	17.11%
July 1, 2013 to June 30, 2014	8.15%	8.47%	2.49%	19.11%
July 1, 2014 to June 30, 2015	8.15%	8.57%	2.49%	19.21%
July 1, 2015 to June 30, 2016	8.15%	8.67%	2.49%	19.31%
July 1, 2016 to June 30, 2017	8.15%	8.77%	2.49%	19.41%
July 1, 2017 to June 30, 2018	8.15%	8.87%	2.49%	19.51%
July 1, 2018 to June 30, 2019	8.15%	8.97%	2.49%	19.61%
July 1, 2019 to June 30, 2020	8.15%	9.07%	2.49%	19.71%
July 1, 2020 to June 30, 2021	8.15%	9.17%	2.49%	19.81%
July 1, 2021 to June 30, 2022	8.15%	9.27%	2.49%	19.91%
July 1, 2022 to June 30, 2023	8.15%	9.37%	2.49%	20.01%
July 1, 2023 to June 30, 2024	8.15%	9.47%	2.49%	20.11%

State and University Employers

	Members	Employers	General Fund	Total
Prior to July 1, 2007	7.15%	7.47%	0.11%	14.73%
July 1, 2007 to June 30, 2009	7.15%	9.47%	0.11%	16.73%
July 1, 2009 to June 30, 2013	7.15%	9.85%	0.11%	17.11%
July 1, 2013 to June 30, 2014	8.15%	10.85%	0.11%	19.11%
July 1, 2014 to June 30, 2015	8.15%	10.95%	0.11%	19.21%
July 1, 2015 to June 30, 2016	8.15%	11.05%	0.11%	19.31%
July 1, 2016 to June 30, 2017	8.15%	11.15%	0.11%	19.41%
July 1, 2017 to June 30, 2018	8.15%	11.25%	0.11%	19.51%
July 1, 2018 to June 30, 2019	8.15%	11.35%	0.11%	19.61%
July 1, 2019 to June 30, 2020	8.15%	11.45%	0.11%	19.71%
July 1, 2020 to June 30, 2021	8.15%	11.55%	0.11%	19.81%
July 1, 2021 to June 30, 2022	8.15%	11.65%	0.11%	19.91%
July 1, 2022 to June 30, 2023	8.15%	11.75%	0.11%	20.01%
July 1, 2023 to June 30, 2024	8.15%	11.85%	0.11%	20.11%

Pursuant to §19-20-609, MCA, the employer contribution rate will increase by 0.10% each year beginning July 1, 2014, through fiscal year 2024.

Sensitivity Analysis – TRS Plan

	1.0% Decrease (6.50%)	Current Discount Rate	1.0% Increase (8.50%)
Net Pension Liability	$ 2,552,207,461	$ 1,856,109,906	$ 1,273,072,812

In accordance with GASB 67 regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the above table presents the net pension liability calculated using the discount rate of 7.50%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1.00% lower (6.50%) or 1.00% higher (8.50%) than the current rate.

Schedule of Investment Returns – TRS Plan

TRS Plan Schedule of Investment Returns

	2018
Annual Money Weighted Rate Return, Net of Investment Expense	8.880%

The annual money-weighted rate of return on pension plan investments expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested.

Note E. Net Pension Liability – Employer Reporting

In accordance with GASB Statement 68, Accounting and Financial Reporting for Pensions, TRS is required to recognize and report certain amounts associated with their participation in the Public Employees' Retirement System (PERS). Statement 68 includes requirements to record and report employers' proportionate share of the collective Net Pension Liability, Pension Expense, Deferred Inflows and Deferred Outflows of resources associated with pensions.

In accordance with Statement 68, the State of Montana has a funding situation that is not Special Funding whereby the State General Fund provides contributions from the Coal Severance Tax and interest. All employers are required to report the portion of Coal Severance Tax and interest attributable to the employer as grant revenue. However, since TRS does not receive any other contributions from the state as a result of being an employer of PERS, the State of Montana Proportionate share is $0 as seen below.

Net Pension Liability – TRS as an Employer of PERS Plan

	Net Pension Liability as of 6/30/18	Net Pension Liability as of 6/30/17	Percent of Collective NPL as 6/30/18	Percent of Collective NPL as 6/30/17	Change in Percent of Collective NPL
TRS Proportionate Share	$ 1,745,607	$ 1,502,397	0.0896%	0.0882%	0.0014%
State of Montana Proportionate Share Associated with TRS	$ 0	$ 0	0.0000%	0.0000%	0.0000%
Total	$ 1,745,607	$ 1,502,397	0.0896%	0.0882%	0.0014%

At June 30, 2018, TRS recorded a liability of $1,745,607 for its proportionate share of the Net Pension Liability. The Net Pension Liability was measured as of June 30, 2017, and the Total Pension Liability (TPL) used to calculate the Net Pension Liability was determined by an actuarial valuation as of June 30, 2016, with update procedures to roll forward the TPL to the measurement date of June 30, 2017. TRS' proportion of the Net Pension Liability was based on the employer contributions received by PERS during the measurement period July 1, 2016 through June 30, 2017, relative to the total employer contributions received from all of PERS' participating employers. At June 30, 2018, the TRS' proportion was 0.0896 percent.

Summary of Actuarial Assumptions – PERS Plan

Changes in actuarial assumptions and methods:

Effective July 1, 2017 the following assumption changes were implemented:

- Lowered the discount rate assumption from 7.75% to 7.65%
- Lowered the inflation rate assumption from 3.00% to 2.75%
- Updated non-disabled mortality to the RP-2000 Combined Employee and Annuitant Mortality Table projected to 2020 using scale BB, males set back 1 year.
- Increased assumed rates of withdrawal.
- Lowered the merit component of the total salary increase assumption.
- Lowered the base wage component of the total salary increase from 4.00% to 3.50%.
- Decreased the administrative expense load from 0.27% to 0.26%.

Effective July 1, 2017 the following method changes were implemented:

- Administrative expenses are recognized by an additional amount added to the normal cost contribution rate for the System. This rate will vary from year to year based on the prior year's actual administrative expenses.
- To be consistent with the base wage growth change, the payroll growth assumption for amortization as a level percent of pay was reduced from 4.00% to 3.50%.

Changes in benefit terms:

Effective July 1, 2017 the following benefit changes were implemented:

- The interest rate credited to member accounts increased from 0.25% to 0.77%
- Lump sum payouts in all systems are limited to the member's accumulated contributions rather than the present value of the member's benefit

Changes in proportionate share:

- There were no changes between the measurement date of the collective Net Pension Liability and TRS's reporting date that are expected to have a significant effect on the TRS's proportionate share of the collective NPL.

Pension Expense – TRS as an Employer of PERS Plan

	Pension Expense as of 6/30/18	
TRS Proportionate Share	$	222,768
Proportionate Share of Coal Severance Tax Contributions Associated with TRS	$	24,971
Total	$	247,739

At June 30, 2018, TRS recognized a Pension Expense of $247,739 for its proportionate share of the PERS' pension expense. TRS also recognized grant revenue of $24,971 for the support provided by the State of Montana for the proportionate share of the Coal Severance Tax contributions made to PERS that are associated with TRS.

Deferred Inflows and Outflows - TRS as an Employer of PERS Plan

At June 30, 2018, TRS reported its proportionate share of deferred outflows of resources and deferred inflows of resources related to TRS from the following sources:

		Deferred Outflows of Resources		Deferred Inflows of Resources
Differences Between Expected and Actual Economic Experience	$	42,989	$	2,527
Changes in Actuarial Assumptions	$	238,606	$	0
Difference Between Projected and Actual Investment Earnings	$	0	$	11,724
Changes in Proportion and Differences Between TRS Contributions and Proportionate Share of Contributions	$	57,475	$	0
*Contributions Paid to PERS Subsequent to the Measurement Date—FY 2018 Contributions	$	95,649	$	0
Total	$	434,719	$	14,251

**Amounts reported as deferred outflows of resources related to pensions resulting from TRS's contributions in FY 2018 subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2019. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:*

Fiscal Year Ended June 30:		Amount Recognized as an Increase (or Decrease) to Pension Expense in Future Years
2019	$	61,834
2020	$	136,499
2021	$	106,166
2022	$	(37,154)
2023		–
Thereafter		–

Plan Description – PERS Plan

The PERS-Defined Benefit Retirement Plan (DBRP), administered by the Montana Public Employee Retirement Administration (MPERA), is a multiple-employer, cost-sharing plan established July 1, 1945, and governed by Title 19, chapters 2 and 3, MCA. This plan provides retirement benefits to covered employees of 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 contribution and defined benefit 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). For members that choose to join the PERS-DCRP or the MUS-RP, a percentage of the employer contributions will be used to pay down the liability of the PERS-DBRP.

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.

Summary of Benefits – PERS Plan

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.

For PERS-DCRP Plan members are eligible for benefit at termination of 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

Five years of membership service

For PERS-DCRP Plan, members are vested immediately for participant's contributions and attributable income. Member's must have 5 years of membership to become eligible for the employer's contributions to individual accounts and attributable income.

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.

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.

For PERS-DCRP Plan member's benefit depend entirely on vesting and individual account balance. Various payout options are available, including: taxable lump-sum payouts, periodic payments, per member instructions and IRS permitted rollovers.

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 other adjustments to the member's benefit.
- GABA is 3% for members hired prior to July 1, 2007.
- GABA is 1.5% for members hired on or after July 1, 2007

Overview of Contributions – PERS Plan

Rates are specified by state law for periodic member and employer contributions and are a percentage of the member's compensation. Contributions are deducted from each member's salary and remitted by participating employers. The State legislature has the authority to establish and amend contribution rates to the plan.

1. Member contributions to the system of 7.9% are temporary and 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.

2. Employer contributions to the system:
   a. Effective July 1, 2014, following the 2013 Legislative Session, PERS-employer contributions increase an additional 0.1% a year and will continue over 10 years through 2024. The additional employer contributions including the 0.27% added in 2007 and 2009, will terminate on January 1, following an actuary valuation that shows the amortization period of the PERS-DBRP has dropped below 25 years and remains below the 25 years following the reduction of both the additional employer and member contributions rates.
   b. Effective July 1, 2013, employers are required to make contributions on working retirees' compensation. Member contributions for working retirees are not required.

3. Non-employer Contributions:
   a. Special Funding
      i. The State contributes 0.1% of members' compensation on behalf of local government entities.
      ii. The State contributes 0.37% of members' compensation on behalf of school district entities.
   b. Not Special Funding
      i. The State contributes a portion of Coal Severance Tax income and earnings from the Coal Trust Permanent Trust fund.

Stand-Alone Statements – PERS Plan

The PERS financial information is reported in the Public Employees' Retirement Board's (PERB) Comprehensive Annual Financial Report for the fiscal year ended. It is available from the PERB at 100 North Park, PO Box 200131, Helena MT 59620-0131, 406-444-3154.

CAFR information including PERS stand-alone financial statements and the GASB 68 report can be found on their website at http://mpera.mt.gov

The latest actuarial valuation and experience study can also be found at their website at http://mpera.mt.gov

Actuarial Assumptions – PERS Plan

The Total Pension Liability measured as of June 30, 2017, is based on the results of an actuarial valuation date of June 30, 2016, with update procedures to roll forward the TPL to June 30, 2017. There were several significant assumptions and other inputs used to measure the TPL. The actuarial assumptions used in the June 30, 2017, valuation were based on the results of the last actuarial experience study, dated May 2017, for the six year period July 1, 2010, to June 30, 2016. Among those assumptions were the following:

General Wage Growth*	3.50%
*Includes Inflation at	2.75%
Admin Expense as % of Payroll	0.26%
Merit Wage Increases	0% to 6.30%
Investment Return	7.65%
Post-retirement Benefit Increases	
3% for Members hired prior to July 1, 2007	
1.5% for Members hired on or after July 1, 2007	
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 other adjustments to the member's benefit.	
• GABA is 3% for members hired prior to July 1, 2007.	
• GABA is 1.5% for members hired on or after July 1, 2007	
Mortality assumptions among contributing members, terminated vested members, service retired members and beneficiaries based on RP 2000 Combined Employee and Annuitant Mortality Tables projected to 2020 with scale BB, males set back 1 year.	
Mortality assumptions among disabled members are based on RP 2000 Combined Mortality Tables with no projections. .	

Discount Rate – PERS Plan

The discount rate used to measure the Total Pension Liability was 7.65%. The projection of cash flows used to determine the discount rate assumed that contributions from participating plan members, employers, and non-employer contributing entities will be made based on the PERS Board's funding policy, which establishes the contractually required rates under Montana Code Annotated. The State contributes 0.10% of salaries for local governments and 0.37% for school districts. In addition, the State contributes coal severance tax and interest money from the general fund. The interest is contributed monthly, and the severance tax is contributed quarterly. Based on those assumptions, the PERS' fiduciary net position was projected to be adequate to make all the projected future benefit payments of current plan members through the year 2121. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability. No municipal bond rate was incorporated in the discount rate.

Target Allocations – PERS Plan

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%

The long-term expected return on pension plan assets is reviewed as part of the regular experience studies prepared for the PERS. The most recent analysis, performed for the period covering fiscal years 2011 through 2016, is outlined in a report dated May 2017, which is located on the MPERA website. Several factors are considered in evaluating the long-term rate of return assumption including historical rates of return, rates of return adopted by similar public sector systems, and by using a building block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense, and inflation) are developed by the investment consultant for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and then adding expected inflation. The assumption is intended to be a long term assumption and 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. Best estimates are presented as the arithmetic real rates of return for each major asset class included in the PERS target asset allocation as of the measurement date, June 30, 2017, is summarized in the Target Allocations - PERS Plan table above.

Sensitivity Analysis – TRS as an Employer of PERS Plan

	1.0% Decrease (6.65%)	Current Discount Rate	1.0% Increase (8.65%)
TRS' Proportion of Net Pension Liability	$ 2,542,326	$ 1,745,606	$ 1,076,820

In accordance with GASB 68 regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the above table presents the net pension liability calculated using the discount rate of 7.65%, as well as what the net pension liability 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.

Summary of Significant Accounting Policies – PERS Plan

The Montana Public Employee Retirement Administration (MPERA) prepares its financial statements using the accrual basis of accounting. For the purposes of measuring the Net Pension Liability, deferred inflows of resources and deferred outflows of resources related to pensions, Pension Expense, information about the fiduciary net position, and additions to/deductions from fiduciary net position have been determined on the same accrual basis as they are reported by MPERA. For this purpose, 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 they are earned and become measurable. Benefit payments and refunds are recognized in the accounting period when due and payable in accordance with the benefit terms. Expenses are recognized in the period incurred. Investments are reported at fair value. MPERA adheres to all applicable Governmental Accounting Standards Board (GASB) statements.

Defined Contribution Plan – PERS Plan

TRS contributed to the state of Montana Public Employee Retirement System Defined Contribution Retirement Plan (PERS-DCRP) for TRS employees that have elected the DCRP. The PERS-DCRP is administered by the Public Employees Retirement Board and is reported as a multiple-employer plan established July 1, 2002, and governed by Title 19, chapters 2 & 3, MCA.

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 participants of both the defined benefit and defined contribution retirement plans.

Member and employer contribution rates are specified by state law and are a percentage of the member's compensation. Contributions are deducted from each member's salary and remitted by participating employers. The Montana Legislature has the authority to establish and amend contribution rates. For the year ended June 30, 2018 member contributions were 7.9% of gross compensation and employers contributed 8.57% of gross compensation on behalf of DCRP members.

Benefits are dependent upon eligibility and individual account balances. Participants are vested immediately in their own contributions and attributable income. Participants are vested after 5 years of membership service for the employer's contributions to individual accounts and the attributable income. Non-vested contributions are forfeited upon termination of employment per 19-3-2117(5), MCA. Such forfeitures are used to cover the administrative expenses of the PERS-DCRP.

At the plan level for the measurement period ended June 30, 2017, TRS did not recognize any net pension liability or pension expense for the defined contribution plan. Plan level non-vested forfeitures for the 300 employers that have participants in the PERS-DCRP totaled $396,650.

Note F. TRS Plan Contributions

The TRS funding policy provides for monthly employee and employer contributions at rates specified by state law. Plan members, for the fiscal year ending June 30, 2018, were required to contribute 8.15% of their earned compensation and the employer contribution rate for the fiscal year ending June 30, 2018, was 8.87% of earned compensation. For State Agency and University System employers, the employer contribution rate was 11.25% of members' earned compensation.

The State's general fund contributed an additional 2.38% of earned compensation for school district and community college employers. In addition, the State's general fund contributed .11% of earned compensation for all TRS members. Each employer in the Montana University System contributed 4.72% of earned compensation for all employees participating in the Montana University System Retirement Program (MUS-RP).

The TRS actuary determines the actuarial implications of the funding requirement in annual actuarial valuations. The actuarial method used to determine the implications of the statutory funding level is the entry age actuarial cost method, with both normal cost and amortization of the accrued liability determined as a level percentage of earned compensation. Contribution rates consist of an amount for normal cost, the estimated amount necessary to finance benefits earned by the members during the current year, and an amount for amortization of the unfunded actuarial accrued liability.

Contributions made by employers and members were in accordance with actuarially computed funding requirements. Information with regard to contributions to the System, for the year ended June 30, 2018, is indicated in the Required Supplemental Information, Schedule of Employer Contributions.

Note G. Other Post-Employment Benefits

Plan Description

TRS through the State of Montana provides optional post employment healthcare benefits in accordance with Section 2-18-704, MCA to the following employees and dependents who elect 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. Medical, dental, and vision benefits are available through this plan. In accordance with GASB Statement No. 75, Accounting and Financial Reporting for Post employment Benefits Other than Pensions, TRS 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 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 OPEB plan is not administered through a trust; as such, 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 plan members, The State's creditors and non-employer contributing entities. There are no assets accumulated to offset the Total OPEB liability.

The State of Montana pays for post employment healthcare benefits on a pay-as-you-go basis. Section 2-18-811, MCA gives authority for establishing and amending the funding policy to the Department of Administration for the State group health insurance plan. 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 TRS is considered to be a participating employer in the plan.

As of June 2018, the State Plan's administratively established retiree medical contributions vary between $439 and $1,633 per month depending on the medical plan selected, family coverage, and Medicare eligibility. Administratively established dental contributions vary between $41.10 and $70 and vision hardware contributions vary between $7.64 and $22.26 depending on the coverage selected.

The contribution requirements of plan members are established and may be amended by the MDOA. The monthly premium for plan members ranges from $1,084 to $1,633 for calendar year 2018, depending on the options selected, family coverage, and Medicare eligibility. The plan is financed on a pay-as-you-go basis. Therefore, there are no investment objectives of the OPEB plan.

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.

Employees covered by benefit terms: At June 30, 2018 the following TRS employees were covered by the benefit terms: 20 Active employees; 7 Retired employees, spouses, surviving spouses; totaling 27 employees.

The following estimates were prepared based on an actuarial valuation prepared as of the year ending December 31, 2017 for the Department of Administration, with update procedures to roll forward the OPEB amounts to the measurement date of March 31, 2018. The resulting State of Montana Actuarial Valuation of Other Post-Employment Benefits (OPEB) contains the TRS 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

Total OPEB Liability and Changes in Total OPEB Liability

TRS' total OPEB liability as of June 30, 2018 was $138,145. TRS proportionate share of the collective Total OPEB Liability was 0.27378%. The basis on which TRS' proportionate share was calculated was by taking TRS calculated OPEB Liability as a percentage of the Total OPEB Liability.

The following table presents the Changes in the Total OPEB Liability:

Schedule of Changes in Total OPEB Liability

	TRS
Balance as of 06/30/17*	$ 151,730
Changes for the Year:	
Service Cost	(43,547)
Interest	(46,415)
Diff b/w Expected and Actual Experience	108,863
Changes of Assumptions and other inputs	6,812
Benefit Payments (Contributions)	(39,299)
Net Changes	(13,585)
Balance as of 06/30/18	$ 138,145

* Balance as of 06/30/17 is restated as a result of a Prior Period Adjustment - See Note B

Actuarial assumptions and other inputs:

The total OPEB liability in the latest actuarial valuation dated December 31, 2017, the following assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

- Contributions: $ (39,299)
- 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 60.00%
- Marital status at retirement: 70.00%

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

Mortality - Health: For TRS, healthy mortality is assumed to follow the RP 2000 Healthy Annuitant Mortality Table for ages 50 and above and the RP 2000 Combined Healthy Annuitant Mortality Table for ages below 50, set back four years for males, set back two years for females, with mortality improvements projected by Scale BB to 2018.

Changes in actuarial assumptions and methods since last measurement date:

- Changes in actuarial methods were the amortization period and actuarial cost method have been adjusted to conform to the new GASB Statement No. 75 requirements.
- Changes in actuarial assumptions were revised rates per the Retirement System pension valuations as of July 1, 2017 and interest rate based upon the March 31, 2018, 20-year municipal bond index per GASB 75 requirements and 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 effective 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 table presents the total OPEB liability of TRS, as well as what TRS' total OPEB liability would be if it were 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	1% Decrease (2.89%)	Discount Rate (3.89%)	1% Increase (4.89%)
Total OPEB Liability	$160,304	$138,145	$120,926

Sensitivity of the total OPEB liability to changes in the healthcare cost trend rates:
The following table presents the total OPEB liability of TRS, as well as what TRS' total OPEB liability would be if it were 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	1% Decrease (6.50%)	Healthcare Rate (7.50%)	1% Increase (8.50%)
Total OPEB Liability	$121,107	$138,145	$160,519

OPEB Expense

For the year ended June 30, 2018, TRS recognized an OPEB expense of $(89,962).

Deferred Outflow of Resources and Deferred Inflows of Resources Related to OPEB

At June 30, 2018, TRS recorded deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflow of Resources
Difference between expected and actual experience	$108,863	*$0*
Changes of assumptions of other inputs	$6,813	*$0*
*Benefit Payments associated with transactions subsequent to the measurement date of the total OPEB liability	$6,063	*$0*
Total	$121,739	*$0*

*Amounts reported as deferred outflows of resources related to OPEB resulting from TRS' 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 OPEB expense as follows:

Fiscal Year	**Amount recognized as Increase or (Decrease) to OPEB Expense**
2019	$(9,543)
2020	$(9,543)
2021	$(9,543)
2022	$(9,543)
2023	$(9,543)
Thereafter	$(67,961)

Note H. Pending Litigation

As of June 30, 2018, TRS had no pending litigation that would significantly affect the information presented in this financial report.

TEACHERS' RETIREMENT SYSTEM
A COMPONENT UNIT OF THE STATE OF MONTANA REQUIRED SUPPLEMENTARY INFORMATION AND NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
FISCAL YEAR ENDED JUNE 30, 2018

Schedule of Changes in the Net Pension Liability – TRS Plan

	2018*	2017*	2016*	2015*	2014*
Total Pension Liability					
Service Cost	$ 76,009,950	$ 71,429,117	$ 73,530,938	$ 73,820,438	$ 77,006,174
Interest	428,866,673	417,307,148	402,339,969	390,555,879	373,456,442
Benefit Changes		-	-	-	-
Difference Between Expected and Actual Experience	14,571,084	5,420,919	(5,245,998)	9,660,152	20,297,029
Changes of Assumptions	206,321,172	-	(12,445,656)	(4,670,553)	46,502,421
Benefit Payments	(352,854,025)	(333,633,717)	(320,810,259)	(303,675,300)	(285,182,358)
Refunds of Contributions	(5,322,642)	(7,355,344)	(5,086,816)	(5,368,359)	(4,788,688)
Net Change in Total Liability	367,592,212	153,168,123	132,282,178	160,322,257	227,291,020
Total Pension Liability Beginning	$ 5,636,841,900	$ 5,483,673,777	$ 5,351,391,599	$ 5,191,069,342	$ 4,963,778,322
Total Pension Liability Ending	$ 6,004,434,112	$ 5,636,841,900	$ 5,483,673,777	$ 5,351,391,599	$ 5,191,069,342
Fiduciary Net Position					
Contributions - Employer	$ 94,233,469	$ 91,853,678	$ 88,643,646	$ 87,290,863	$ 83,439,612
Contributions - Member	74,594,333	74,253,046	72,740,665	72,215,797	70,468,354
Contributions - Non-Employer Contributing Entities	45,005,672	44,414,109	43,902,606	43,389,534	64,923,320
Miscellaneous Income	31,829	27,504	29,123	27,297	6,000
Net Investment Income	343,720,833	427,042,359	71,487,661	165,684,953	540,277,362
Benefit Payments	(352,854,025)	(333,633,717)	(320,810,259)	(303,675,300)	(285,182,358)
Administrative Expenses	(2,849,527)	(2,459,458)	(2,318,818)	(2,035,081)	(2,022,636)
Refund of Contributions	(5,322,642)	(7,355,344)	(5,086,816)	(5,368,359)	(4,788,688)
Other	(157,777)	(211,532)	(142,849)	(140,631)	(58,073)
Net Change in Fiduciary Net Position	197,402,165	293,930,645	(51,555,041)	57,389,073	467,062,894
Fiduciary Net Position - Beginning	3,950,761,443	3,656,830,798	3,708,385,838	3,652,220,265	3,185,064,406
Prior Period Adjustment	160,598	–	–	(1,223,501)	92,965
Fiduciary Net Position - Ending (b)	$ 4,148,324,206	$ 3,950,761,443	$ 3,656,830,798	$ 3,708,385,838	$ 3,652,220,265
Net Pension Liability - Ending (a - b)	$ 1,856,109,906	$ 1,686,080,457	$ 1,826,842,979	$ 1,643,005,761	$ 1,538,849,077

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

Note to RSI - Schedule of Changes in the Net Pension Liability and Schedule of Net Pension Liability

The TPL contained in these schedules was provided by the Systems actuary, Cavanaugh Macdonald Consulting, LLC. The NPL is measured as the TPL less the amount of the FNP of the Retirement System. Prior to the fiscal year ended June 30, 2018, the Net Investment Income, Net Change in Fiduciary Net Position, and Prior Period Adjustment items in the Schedule of Changes in Fiduciary Net Position matched the Statement of Changes in Net position. However, there was a CAFR only adjustment in FY2018 that was issued by the BOI after the Schedule of Changes in Fiduciary Net Position above had been complete. The adjustment affected the Net Investment Income, Net Change in Fiduciary Net Position, and Prior Period Adjustment items by $56,880 (the amount of the CAFR only adjustment).

Schedule of the Net Pension Liability – TRS Plan

	2018*	2017*	2016*	2015*	2014*
Total Pension Liability	$ 6,004,434,112	$ 5,636,841,900	$ 5,483,673,777	$ 5,351,391,599	$ 5,191,069,342
Fiduciary Net Position	4,148,324,206	3,950,761,443	3,656,830,798	3,708,385,838	3,652,220,265
Net Pension Liability	$ 1,856,109,906	$ 1,686,080,457	$ 1,826,842,979	$ 1,643,005,761	$ 1,538,849,077
Ratio of Fiduciary Net Position to Total Pension Liability	69.09%	70.09%	66.69%	69.30%	70.36%
Covered Payroll	$ 829,708,595	$ 818,122,561	$ 795,920,906	$ 768,718,699	$ 750,604,063
Net Pension Liability as a Percentage of Covered-Employee Payroll	223.71%	206.09%	229.53%	213.73%	205.01%

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

Schedule of Investment Returns – TRS Plan

	2018*	2017*	2016*	2015*	2014*
Annual Money Weighted Rate Return, Net of Investment Expense	8.880%	11.919%	1.986%	4.618%	17.18%

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

Schedule of Employer and Non-employer Contributing Entities Contributions – TRS Plan

	2018	2017	2016	2015	2014
Actuarially Determined Employer Contributions	$ 139,239,141	$ 136,267,787	$ 132,546,252	$ 130,680,397	$ 148,362,932
Actual Contributions:					
Employers	94,233,469	91,853,678	88,643,646	87,290,863	83,439,612
Non-Employer Contributing Entities	$ 45,005,672	$ 44,414,109	$ 43,902,606	$ 43,389,534	$ 64,923,320
Total	$ 139,239,141	$ 136,267,787	$ 132,546,252	$ 130,680,397	$ 148,362,932
Annual Contribution Deficiency/ (Excess)	–	–	–	–	–
Covered Payroll	829,708,595	818,122,561	795,920,906	768,718,699	750,604,063
Actual Contributions as a Percentage of Covered-Employee Payroll	16.78%	16.66%	16.65%	17.00%	19.77%

	2013	2012	2011	2010	2009
Actuarially Determined Employer Contributions	$ 130,533,530	$ 108,993,492	$ 91,879,263	$ 90,967,180	$ 80,997,968
Actual Contributions:					
Employers	74,113,191	72,422,404	72,879,950	72,179,128	66,850,644
Non-Employer Contributing Entities	$ 17,521,347	$ 16,843,766	$ 17,437,366	$ 17,241,610	$ 14,147,324
Total	$ 91,634,538	$ 89,266,170	$ 90,317,316	$ 89,420,738	$ 80,997,968
Annual Contribution Deficiency/ (Excess)	38,898,992	19,727,322	1,561,947	1,546,442	–
Covered Payroll	742,608,987	735,586,961	746,694,434	747,037,330	683,235,462
Actual Contributions as a Percentage of Covered-Employee Payroll	12.34%	12.14%	12.10%	11.97%	11.86%

Note to RSI - Schedule of Employer Contributions

The actuarially determined employer contributions and amount of those contributions actually made are presented in the schedule.

Note to RSI - Actuarial Assumptions – TRS Plan

The information presented in the required supplementary schedules was used in the actuarial valuation for purposes of determining the actuarially determined contribution rate. The assumptions and methods used for this actuarial valuation were recommended by the actuary and adopted by the Board. Additional information as of the latest actuarial valuation follows.

Changes of Benefit Terms – TRS Plan

The following changes to the plan provision were made as identified:

2013

The 2013 Montana Legislature passed HB 377, which provides additional revenue and creates a two-tier benefit structure. A Tier One Member is a person who first became a member before July 1, 2013, and has not withdrawn their member's account balance. A Tier Two Member is a person who first becomes a member on or after July 1, 2013, or after withdrawing their member's account balance, becomes a member again on or after July 1, 2013.

The GABA for Tier 1 members: permanent injunction limits application of the GABA reduction passed under HB 377.

The second tier benefit structure for members hired on or after July 1, 2013 is summarized below.

1. Final Average Compensation: average of earned compensation paid in five consecutive years of full-time service that yields the highest average.

2. Service Retirement: Eligible to receive a service retirement benefit if the member has been credited with at least five full years of creditable service and has attained the age of 60; or has been credited with 30 or more years of full-time or part-time creditable service and has attained age 55.

3. Early Retirement: Eligible to receive an early retirement allowance if a member is not eligible for service retirement, but has at least five years of creditable service and attained age 55.

4. Professional Retirement Option: if the member has been credited with 30 or more years of service and has attained the age of 60, the member is eligible for an enhanced allowance equal to 1.85% of average final compensation times all service at retirement. Otherwise, the multiplier used to calculate the retirement allowance will be equal to 1.67%.

5. Annual Contribution: 8.15% of member's earned compensation.

6. Supplemental Contribution Rate: On or after July 1, 2023, the TRS Board may require a supplemental contribution up to 0.5% if the following three conditions are met:
   a. The average funded ratio of the System based on the last three annual actuarial valuations is equal to or less than 80%, and
   b. The period necessary to amortize all liabilities of the System based on the latest annual actuarial valuation is greater than 20 years, and
   c. A State or employer contribution rate increase or a flat dollar contribution to the Retirement System Trust fund has been enacted that is equivalent to or greater than the supplemental contribution rate imposed by the TRS Board.

7. Disability Retirement: A member will not be eligible for a disability retirement if the member is or will be eligible for a service retirement on the date of termination.

8. Guaranteed Annual Benefit Adjustment (GABA):
   a. If the most recent actuarial valuation shows that Retirement System liabilities are at least 90% funded and the provision of the increase is not projected to cause the System's liabilities to be less than 85% funded, the GABA may increase from the 0.5% floor up to 1.5%, as set by the Board.

HB 377 increased revenue from the members, employers, and the State by means of the following changes:

- An annual State contribution equal to $25 million paid to the System in monthly installments.
- A one-time contribution payable to the Retirement System by the trustees of a school district maintaining a retirement fund. The one-time contribution to the Retirement System shall be the amount earmarked as an operating reserve in excess of 20% of the adopted retirement fund budget for the fiscal year 2013. The amount received was $22 million in FY 2014.
- A 1% supplemental employer contribution, which will increase the current employer rates as follows:
  - School district contributions will increase from 7.47% to 8.47%.
  - Montana University System and State agency contributions will increase from 9.85% to 10.85%.
  - Supplemental employer contributions will increase by 0.1% each fiscal year for fiscal year 2014 through fiscal year 2024. For fiscal years beginning after June 30, 2024, the total supplemental employer contribution will be equal to 2%.
- Members hired prior to July 1, 2013, (Tier One) under HB 377 are required to contribute a supplemental contribution equal to an additional 1% of the member's earned compensation.
- Each employer is required to contribute 9.85% of total compensation paid to all re-employed TRS retirees employed in a TRS reportable position to the System.

Changes in Actuarial Assumptions and Methods – TRS Plan

The following changes to the actuarial assumptions were adopted in 2018:

- Assumed rate of inflation was reduced from 3.25% to 2.50%
- Payroll growth assumption was reduced from 4.00% to 3.25%
- Investment return assumption was changed was reduced from 7.75% to 7.50%.
- Wage growth assumption was reduced from 4.00% to 3.25%
- Mortality among contributing members, service retired members, and beneficiaries was updated to the following:
  o For Males and Females: RP-2000 Healthy Combined Mortality Table projected to 2022 adjusted for partial credibility setback for two years.
  The tables include margins for mortality improvement which is expected to occur in the future.
- Mortality among disabled members was updated to the following:
  o For Males: RP 2000 Disabled Mortality Table, set back three years, with mortality improvements projected by Scale BB to 2022.
  o For Females: RP 2000 Disabled Mortality Table, set forward two years, with mortality improvements projected by Scale BB to 2022.
- Retirement rates were updated
- Termination rates were updated
- Rates of salary increases were updated

The following changes to the actuarial assumptions were adopted in 2016:

- The normal cost method has been updated to align the calculation of the projected compensation and the total present value of plan benefits so that the normal cost rate reflects the most appropriate allocation of plan costs over future compensation.

The following changes to the actuarial assumptions were adopted in 2015:

- Correctly reflect the proportion of members that are assumed to take a refund of contributions upon termination and appropriately reflect the three year COLA deferral period for Tier 2 Members.
- The 0.63% load applied to the projected retirement benefits of the university members "to account for larger than average annual compensation increases observed in the years immediately preceding retirement" is not applied

to benefits expected to be paid to university members on account of death, disability and termination (prior to retirement eligibility.

- The actuarial valuation was updated to reflect the assumed rate of retirement for university members at age 60 is 8.50% as stated in the actuarial valuation report.
- The actuarial valuation was updated to reflect the fact that vested terminations are only covered by the $500 death benefit for the one year following their termination and, once again when the terminated member commences their deferred retirement annuity (they are not covered during the deferral period). Additionally, only the portion of the terminated members that are assumed to "retain membership in the System" are covered by the $500 death benefit after termination.

The following changes to the actuarial assumptions were adopted in 2014:
- Assumed rate of inflation was reduced from 3.50% to 3.25%.
- Payroll Growth Assumption was reduced from 4.50% to 4.00%.
- Assumed real wage growth was reduced from 1.00% to 0.75%.
- Investment return assumption was changed from net of investment and administrative expenses to net of investment expenses only.
- Mortality among contributing members, service retired members, and beneficiaries was updated to the following:
  - For Males: RP 2000 Healthy Annuitant Mortality Table for ages 50 and above and the RP 2000 Combined Healthy Annuitant Mortality Table for ages below 50, set back four years, with mortality improvements projected by Scale BB to 2018.
  - For Females: RP 2000 Healthy Annuitant Mortality Table for ages 50 and above and the RP 2000 Combined Healthy Annuitant Mortality Table for ages below 50, set back two years, with mortality improvements projected by Scale BB to 2018.
- Mortality among disabled members was updated to the following:
  - For Males: RP 2000 Disabled Mortality Table for Males, set forward one year, with mortality improvements projected by Scale BB to 2018.
  - For Females: RP 2000 Disabled Mortality Table for Females, set forward five years, with mortality improvements projected by Scale BB to 2018.

Note to RSI - Method and Assumptions Used in Calculations of Actuarially Determined Contributions – TRS Plan

Actuarial Cost Method	Entry Age
Amortization Method	Level Percentage of Pay, Open
Remaining Amortization Period	31 years
Asset Valuation Method	4-year Smoothed Market
Inflation	2.50 Percent
Salary Increase	3.25 – 7.76 Percent, Including Inflation for Non-University Members and 4.25 Percent for University Members;
Investment Rate of Return	7.50 Percent, Net of Pension Plan Investment Expense, and Including Inflation

Schedule of Proportionate Share of the Net Pension Liability – TRS as Employer of PERS Plan

	2018	2017	2016	2015
TRS' Proportion of the Net Pension Liability	0.0896%	0.0882%	0.0843%	0.08102%
TRS' Proportionate Share of the Net Pension Liability	$1,745,606	$1,502,397	$1,177,820	$1,009,567
State of Montana's Proportionate Share of the Net Pension Liability Associated With the TRS	$0	$0	$0	$0
Total NPL	$1,745,606	$1,502,397	$1,177,820	$1,009,567
TRS' Covered-Employee Payroll	$1,098,725	$1,043,891	$971,504	$905,963

Schedule of Proportionate Share of the Net Pension Liability – TRS as Employer of PERS Plan

	2018	2017	2016	2015
TRS' Proportionate Share of the Net Pension Liability as a Percentage of Its Covered-Employee Payroll	158.9%	143.9%	121.2%	111.4%
Fiduciary Net Position as a Percentage of the Total Pension Liability	73.8%	74.7%	78.4%	79.9%

The amounts presented above for each fiscal year were determined as of June 30th, the measurement date. Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Schedule of Contributions – TRS as Employer of PERS Plan

	2018	2017	2016	2015
Contractually Required Contributions	$95,649	$93,731	$89,396	$82,288
Contributions in Relation to the Contractually Required Contributions	$95,649	$93,731	$89,396	$82,288
Contribution Deficiency (Excess)	$0	$0	$0	$0
Employer's Covered-Employee Payroll	$1,177,300	$1,137,315	$1,043,891	$971,504
Contributions as a Percentage of Covered-Employee Payroll	8.12%	8.24%	8.56%	8.47%

The amounts presented above for each fiscal year were determined as of June 30th, the most recent fiscal year end. Schedule is intended to show information for 10 years. Additional years will be displayed as they become available

Note to RSI - Changes of Benefit Terms – PERS Plan

The following changes to the plan provision were made as identified:

2013 Legislative Changes:

Working Retirees - House Bill 95
- The law requires employer contributions on working retiree compensation.
- Member contributions are not required.
- Working retiree limitations are not impacted. PERS working retirees may still work up to 960 hours a year, without impacting benefits.

Highest Average Compensation (HAC) Cap - House Bill 97, effective July 1, 2013
- All PERS members hired on or after July 1, 2013, are subject to a 110% annual cap on compensation considered as part of a member's highest or final average compensation.
- All bonuses paid to PERS members on or after July 1, 2013, will not be treated as compensation for retirement purposes.

House Bill 454 - Permanent Injunction Limits Application of the GABA Reduction passed under HB 454

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

2015 Legislative Changes:

General Revisions - House Bill 101, effective January 1, 2016

Second Retirement Benefit

1. Applies to PERS members who return to active service on or after January 1, 2016. Members who retire before January 1, 2016, return to PERS-covered employment and accumulate less than 2 years of service credit before retiring again:
   - refund of member's contributions from second employment plus regular interest (currently 0.25%);
   - no service credit for second employment;
   - start same benefit amount the month following termination, and
   - GABA starts again in the January immediately following second retirement.

2. For members who retire before January 1, 2016, return to PERS-covered employment and accumulate two or more years of service credit before retiring again:
   - member receives a recalculated retirement benefit based on laws in effect at second retirement, and
   - GABA starts in the January after receiving recalculated benefit for 12 months.

3. For members who retire on or after January 1, 2016, return to PERS-covered employment and accumulate less than 5 years of service credit before retiring again:
   - refund of member's contributions from second employment plus regular interest (currently 0.25%);
   - no service credit for second employment;
   - start same benefit amount the month following termination, and
   - GABA starts again in the January immediately following second retirement.

4. For members who retire on or after January 1, 2016, return to PERS-covered employment and accumulate five or more years of service credit before retiring again:
   - member receives same retirement benefit as prior to return to service;
   - member receives second retirement benefit for second period of service based on laws in effect at second retirement, and
   - GABA starts on both benefits in January after member receives original and new benefit for 12 months.

Employer Contributions and the Defined Contribution Plan

The PCR was paid off effective March 2016 and the contributions of 2.37%, .47%, and the 1.0% increase previously directed to the PCR are now directed to the Defined Contribution or MUS-RP member's account.

2017 Legislative Changes:

General Revisions – House Bill 101, effective July 1, 2017

Working Retiree Limitations – If a PERS retiree returns as an independent contractor to what would otherwise be PERS-covered employment, general contractor overhead costs are excluded from PERS working retiree limitations.

Terminating Employers – Recovery of actuary costs – Employers who terminate participation in PERS must pay the actuarial liability associated with that termination. Starting July 1, 2017, the terminating employer must also pay for the cost of the actuarial study used to determine that liability.

Refunds
1. Terminating members eligible to retire may, in lieu of receiving a monthly retirement benefit, refund their accumulated contributions in a lump sum.
2. 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.
3. Trusts, estates, and charitable organizations listed as beneficiaries are entitled to receive only a lump-sum payment.

Family Law Orders

If a Family Law Order (FLO) is silent regarding the apportionment of post-retirement benefit adjustments such as the Guaranteed Annual Benefit Adjustment (GABA), the FLO is presumed to require apportionment of the post-retirement benefit adjustment in the same percentage as the monthly retirement benefit is apportioned.

Disabled PERS Defined Contribution (DC) Members

PERS members hired after July 1, 2011 have a normal retirement age of 65. PERS DC members hired after July 1, 2011 who became disabled were previously only eligible for a disability benefit until age 65. Effective July 1, 2017, these individuals will be eligible for a disability benefit until they reach 70, thus ensuring the same 5-year time period available to PERS DC disabled members hired prior to July 1, 2011 who have a normal retirement age of 60 and are eligible for a disability benefit until age 65.

PERS Statutory Appropriation – House Bill 648, 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 will be replaced with the following statutory appropriations:

1. FY2018 - $31.386 million
2. FY2019 - $31.958 million
3. Beginning July 1, 2019 through at least June 30, 2025, 101% of the contribution from the previous year from the general fund to the PERS defined benefit trust fund, as follows:
    a. FY2020 - $32.277 million
    b. FY2021 - $32.6 million
    c. FY2022 - $32.926 million
    d. FY2023 - $33.255 million
    e. FY2024 - $33.588 million
    f. FY2025 - $33.924 million

Note to RSI – Changes in Actuarial Assumptions and Methods - PERS Plan

Method and assumptions used in calculations of actuarially determined contributions
The following Actuarial Assumptions were adopted from the June 30, 2017 actuarial valuation:

General Wage Growth*	3.50%
Investment Rate of Return*	7.65%
*Includes inflation at	2.75%
Merit salary increases	0% to 6.30%
Asset valuation method	4-year smoothed market
Actuarial cost method	Entry age Normal
Amortization method	Level percentage of payroll, open
Mortality (Healthy members)	For Males and Females: RP 2000 Combined Employee and Annuitant Mortality Table projected to 2020 using Scale BB, males set back 1 year
Mortality (Disabled members)	For Males and Females: RP 2000 Combined Mortality Table
Admin Expense as % of Payroll	0.26%

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.

The following addition to the actuarial assumptions was adopted in 2014 based upon implementation of GASB Statement 68:

Admin Expense as % of Payroll	0.27%

The following changes were adopted in 2013 based on the 2013 Economic Experience study:

General Wage Growth*	4.00%
*Includes inflation at	3.00%
Investment rate of return	7.75%, net of pension plan investment expense, and including inflation

The following Actuarial Assumptions are from the June 2010 Experience Study:

General Wage Growth*	4.25%
*Includes inflation at	3.00%
Merit increase	0% to 7.3%
Investment rate of return	8.00%, net of pension plan investment expense, and including inflation
Asset valuation method	4-year smoothed market
Actuarial cost method	Entry age
Amortization method	Level percentage of pay, open

Other Post-employment Benefits Plan Information

	2018*
TRS Proportionate Share of the Total OPEB Liability	0.27378%
TRS Total OPEB Liability	$138,145
TRS' covered employee payroll	$1,098,725
TRS Total OPEB Liability as a percentage of covered payroll	12.57%

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

Note to RSI – OPEB

The State of Montana OPEB plan is not administered through a trust; as such, 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 plan members, The State's creditors and non-employer contributing entities. There are no assets accumulated to offset the Total OPEB liability.

Actuarial assumptions and other inputs:
The total OPEB liability in the latest actuarial valuation dated December 31, 2017, the following assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Contributions: $ (39,299)
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

TEACHERS' RETIREMENT SYSTEM
A COMPONENT UNIT OF THE STATE OF MONTANA
SUPPORTING SCHEDULES / SUPPLEMENTARY INFORMATION
FISCAL YEAR ENDED JUNE 30, 2018

SCHEDULE OF ADMINISTRATIVE EXPENSES

Expenses for the administration of the plan, excluding compensated absences, depreciation and amortization are budgeted and approved by the TRS Board. The administrative costs of the TRS are financed through realized investment income. The expenses, less amortization of assets, may not exceed 1.5% of retirement benefits paid. Administrative expenses for the fiscal year ended June 30, 2018, were 0.81% of benefits paid. The administrative expenses by category are outlined below:

Administrative Expenses

		2018
Personnel Services:		
Salaries	$	1,006,422
Other Compensation		2,982
Employee Benefits		428,433
Total Budgeted Personal Services	$	1,437,837
Operating Expenses:		
Contracted Services	$	575,312
Supplies and Material		36,155
Communications		100,523
Travel		26,130
Rent		69,888
Repair and Maintenance		25,497
Other Expenses		95,775
Total Budgeted Operating Expenses	$	929,280
Non-Budgeted Expenses:		
OPEB Contribution Expense	$	(39,299)
OPEB Contribution Offset		(6,063)
Pension Contribution Offset		(95,649)
Compensated Absences		(36,496)
Amortization Expense		659,917
Total Non-Budgeted Expenses	$	482,410
Total Administrative Expenses	$	2,849,527

SCHEDULE OF INVESTMENT EXPENSES

Investment		BOI		Custodial Bank		External Managers		Other		Total
Short-Term Investment Pool	$	13,042	$	7,679		N/A	$	123,436	$	144,157
Consolidated Asset Pension Pool	$	1,335,094	$	447,247	$	17,123,505	$	6,200,709	$	25,106,555
Totals	$	1,348,136	$	454,926	$	17,123,505	$	6,324,145	$	25,250,712

SCHEDULE OF PAYMENTS TO CONSULTANTS

Costs included in the table below are a result of administrative expenses, as well as several costs associated with the M-Trust project as of June 30, 2018.

		2018
Actuarial Services	$	156,636
Project Consulting Services		92,755
Legal Services		30,027
Audit Services		64,640
Medical Evaluations		590
IT Contracts		25,497
Non-Project IT Services and Consulting		72,000
Project IT Services and Consulting		271,380
Total Consultant Payments	$	713,525

Report on Internal Control and Compliance

LEGISLATIVE AUDIT DIVISION

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

Deputy Legislative Auditors
Cindy Jorgenson
Joe Murray

Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

The Legislative Audit Committee
of the Montana State Legislature:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to the financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position of the Teachers' Retirement System (system), prepared by the Teachers' Retirement Board (board), as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise the system's basic financial statements, and have issued our report thereon dated December 14, 2018.

Internal Control Over Financial Reporting

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

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

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

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the system's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*. The identified instances of noncompliance are described below:

The Montana Constitution requires public retirement systems to be funded on an actuarially sound basis. Teachers' Retirement Board policy further requires any unfunded liability of the system to amortize over a closed period of no more than 30 years. The most recent actuarial valuation, performed as of July 1, 2018, found the unfunded liability of the system amortizes within 31 years.

Teachers' Retirement Board Response to Findings

The board's response to the findings identified in our audit are described on page C-1 of this report. The board's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

Purpose of this Report

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

Respectfully submitted,

/s/ Cindy Jorgenson

Cindy Jorgenson, CPA
Deputy Legislative Auditor
Helena, MT

December 14, 2018

Teachers' Retirement Board

Board Response

TEACHERS' RETIREMENT SYSTEM

STEVE BULLOCK, GOVERNOR
www.trs.mt.gov

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LEGISLATIVE AUDIT DIV.

January 16, 2019

Angus Maciver, Legislative Auditor
Legislative Audit Division
Room 160, State Capitol
PO Box 201705
Helena MT 59620-1705

Dear Mr. Maciver:

Thank you for the opportunity to reply to the financial audit report of the Teachers' Retirement Board for the fiscal year ending June 30, 2018. The Teachers' Retirement Board appreciates the services provided by your staff in conducting the audit.

We are pleased with the unmodified opinion on the financial statements for the fiscal year ending June 30, 2018 and I would like to thank you and Deputy Auditor Cindy Jorgenson along with your staff (Kelly Zwang, Shenae Stensass, Delsi Osmanson, Lesli Lahti, Mary Yurewitch, Joshua Phillips, Diedra Murray and Natalie Gibson) for their professionalism and courtesy as they conducted the audit.

The audit report contains an unmodified opinion, which means the reader can rely on the information presented. The Legislative Auditors did, however, make one recommendation related to compliance with state law and they identified one instance of noncompliance related to the amortization period of the system. The Teachers' Retirement System has reviewed these findings and our response and corrective action plan is provided below.

Recommendation #1:

"We recommend that the Teachers' Retirement System:

A. Reimburse the General Fund $2.7 million in improperly collected supplemental state contributions as required by 19-20-1202, MCA, and
B. Comply with state law by not including educational cooperatives and counties when determining the amount of the supplemental contribution to be paid by the state, **or**
C. Seek legislation to amend 19-20-607(1) to include educational cooperatives and counties."

Response: Partially Concur

TRS agrees that §19-20-607 should have been amended in 2009 when §19-20-605 was amended so that the language of the two provisions would be consistent, but the legislative history and legislative intent from both 2007 and 2009 establish that:

- An ongoing increase of 2.38% in the required regular employer contribution rate on all TRS members was intended to be implemented (HB 63 from 2007 Legislature);
- The increase was intended to be paid, for all employers, through the state appropriation process rather than through local property tax assessments; and
- For employers that would otherwise raise the funds for the increased employer contributions through local property tax assessments, the contribution increase would be funded through a statutory appropriation from the general fund directly to TRS.

This legislative intent has been given consistent and appropriate effect by TRS and the by state of Montana, notwithstanding the technical failure to duplicate the clarification made in 19-20-605(3) in 2009 to 19-20-607. TRS has acted in good faith in enacting the supplemental contributions in 19-20-607(1). To determine otherwise would mean that the applicable rate of regular employer contributions for TRS active members who are employees of education cooperatives and counties was intended to be and effectively is 7.47% while the combined contribution rate for all other employers is 9.85%.

Corrective Action:

The Teachers' Retirement System is seeking legislation to amend 19-20-607(1), MCA during the 2019 Legislative Session. Section 6 of House Bill 204 clarifies that educational cooperatives and counties are included in the state supplemental contribution. This section has a retroactive applicability date of July 1, 2007 to correspond with the effective date of the state supplemental contribution rate in 19-20-607, MCA (HB 63 from the 2007 Legislative Session).

Instance of Noncompliance:

"The Montana Constitution requires public retirement systems to be funded on an actuarially sound basis. Teachers' Retirement Board Policy further requires any unfunded liability of the system to amortize over a closed period of no more than 30 years. The most recent actuarial valuation, performed as of July 1, 2018, found the unfunded liability of the system amortizes within 31 years."

Response:

If the amortization period is greater than 30 years, the TRS Benefit and Funding policy provides that the Board will direct its contracted actuary to project forward the actuarially recommended contribution rate that can be reasonably expected to fully amortize the UAAL over a closed 30-year period effective as of the July 1 following the next regular legislative session. The TRS Benefit and Funding policy also provides that the Board will recommend to the governor and the legislature that funding be increased and/or liabilities be reduced whenever the most recent actuarial valuation shows that the amortization period of the unfunded liabilities exceeds 30 years and the Board cannot reasonably anticipate that the amortization period will decline or the funded ratio will improve without an increase in funding and/or a reduction in liabilities.

In this case, the actuaries projected that, with no contribution rate increase or liability reduction, the amortization period would again be 30 years or less as of July 1, 2019 (the July 1 following the end of the next regular legislative session and the date of the retirement system's next actuarial valuation). Therefore, provided that the actuarial assumptions are met, no contribution rate increase is necessary to bring the amortization period to 30 years or less.

Sincerely,

Shawn Graham
Executive Director
Teachers' Retirement System