

Green Sheets

Montana's Public Employee Retirement Systems

Summary of Benefit, Actuarial, and Investment Data As of June 30, 2020

TABLE OF CONTENTS

Summary

Sensitivity to Lower Investment Return Assumptions

Table 1 Benefit Formula & Eligibility

Table 2 Active Member Data

Table 3 Postretirement Increases – GABA

Table 4 Retiree/Benefit Recipient Data – Normal Cost

Table 5 Contributions

Table 6 Detail on Employers and Contributions

Table 7 Actuarial Funding Data – Funded Ratios and Amortization Period

Table 8 Investments & Returns

Table 9 Cash Flow

Table 10 Investment Expenses

Table 11 Volunteer Firefighters Compensation Act (VFCA)

Table 12 PERS-Defined Contribution (DC) Plan

Table 13 Deferred Comp (457) Plan

Table 14 Montana University System Retirement Plan (MUS-RP)

Compiled by Sheri Scurr, Research Analyst
Montana Legislative Services Division



Sources and Acknowledgment:
MPERA, TRS, Board of Investments, Commissioner of Higher Education

Revised as of 11/13/2020

[INTENTIONALLY BLANK]

Summary of Valuation Results As of June 30, 2020

System	Funded Ratio ¹ (percentage)	Covered Payroll on June 30, 2020	ARC ² Shortfall (% payroll) ³	ARC Shortfall (as dollar amt increases annually) ⁴	Amortization period
PERS-DB	74%	\$1,280,557,497	0.61%	\$7,811,400	35 years
TRS	69%	\$880,668,00	0%	\$0	29 years
SRS	81%	\$84,942,848	0%	\$0	21 years
MPORS	71%	\$56,783,680	0%	\$0	16 years
GWPORS	84%	\$53,825,163	.57%	\$306,803	40 years
FURS	82%	\$53,858,929	0%	\$0	8 years
HPORS	65%	\$15,607,832	3.61%	\$563,443	39 years
JRS	163%	\$8,001,462	0%	\$0	0 years
TOTAL				\$8,681,646	

Notes:

1. "Funded Ratio" means current assets compared to liabilities. When a plan is 100% funded, it means current assets are sufficient to pay 100% of the benefits due now as well as the benefits that active and inactive members have accrued to date. Percentages are rounded. The aspirational policy of the retirement boards is to be 100% funded or more to withstand stresses. However, funded ratios must be considered in context with the amortization period.
2. "ARC" means the Annual Required Contribution rate necessary to amortize unfunded liabilities over 30 years as determined by the system's actuary. Unfunded liabilities are the liabilities that cannot be paid with current assets, but that are being paid for over time with available contributions and investment earnings. This time period is called the "amortization period".
3. The "ARC shortfall" as a percent of payroll is the contribution rate increase (i.e., contributions above current contributions) needed to amortize the system's unfunded liabilities in 30 years. Board policy and state statute governing PERS sets this 30-year amortization period as the maximum period to meet for actuarial soundness.
4. The ARC shortfall as a dollar amount is the estimated amount of money required in the first year of the biennial budget, in addition to current contributions to amortize the system's unfunded liabilities in 30 years. This amount was calculated by legislative staff, so is not in the valuations, and is based on the June 30, 2020, snapshot of payroll. The actual amount will change as payroll changes.
5. Actuarial valuations are based on economic and demographic assumptions about future experience. The governing boards have the constitutional duty to adopt these assumptions based on experience studies conducted approximately every 5 years. The legislature may not alter these assumptions but may request information based on different assumptions. The main actuarial assumptions for the FY 2020 actuarial valuations were as follows:

Main Economic Assumptions on June 30, 2020	TRS	MPERA Systems
Investment rate of return	7.50%	7.65%
Wage growth	3.25%	3.50%
Inflation	2.50%	2.75%

Sensitivity to Lower Investment Return Assumptions

Each actuarial valuation includes a section on how sensitive the system's actuarial funding is to changes in the assumed rate of return on investments. The tables below show what the funded ratio and amortization period would be if the actuary were to assume a lower investment rate of return effective July 1, 2020, to **maintain the current amortization schedule**.

0.5% Lower Assumption

7.15% Investment Return Assumption - MPERA

7.0% Investment Return Assumption – TRS

System	Funded Ratio ¹	Amortization period	Percentage contribution increase to maintain current amortization	Dollar Amt. (millions) contribution increase to maintain current amortization
PERS-DB	70%	does not Amortize	2.22%	\$28.9
TRS	65%	44 yrs	2.48%	\$21.8
SRS	76%	56 yrs	3.89%	\$3.4
MPORS	66%	25 yrs	9.10%	\$5.5
GWPORS	78%	does not amortize	2.95%	\$1.6
FURS	76%	13 yrs	11.95%	\$6.6
HPORS	61%	71 yrs	5.76%	\$0.9
JRS	156%	0 yrs	0%	\$0

1.0% Lower Assumption

6.65% Investment Return Assumption - MPERA

6.5% Investment Return Assumption - TRS

System	Funded Ratio ¹	Amortization period	Percentage contribution increase to maintain current amortization	Dollar Amt. (millions) contribution increase to maintain current amortization
PERS-DB	66%	does not amortize	6.65%	\$58.5
TRS	61%	81 yrs	5.27%	\$46.4
SRS	71%	does not amortize	8.15%	\$7.0
MPORS	62%	41 yrs	18.60%	\$11.2
GWPORS	73%	does not amortize	6.10%	\$3.4
FURS	71%	20 yrs	27.62%	\$15.3
HPORS	57%	does not amortize	11.97%	\$1.9
JRS	148%	0 yrs	0%	\$0

Table 1 – BENEFIT FORMULA & ELIGIBILITY
(multiplier x highest average compensation x years of service)

(dates reflect tiers based on hire date)

	TEACHERS' RETIREMENT SYSTEM (TRS)	PERS DEFINED BENEFIT PLAN (PERS-DB)	JUDGES (JRS)	HIGHWAY PATROL OFFICERS' (HPORS)	SHERIFFS' (SRS)	GAME WARDENS' AND PEACE OFFICERS' (GWPORS)	MUNICIPAL POLICE OFFICERS' (MPORS)	FIREFIGHTERS' UNIFIED (FURS)
Service and age eligibility criteria for full retirement	<p>Tier One (pre-7/01/13): 5 yrs, age 60, or 25 years</p> <p>Tier Two (7/01/13) 30 yrs, age 55 or 5 yrs, age 60</p>	<p>Pre-7/01/11 5 years, age 60, or 30 years, or age 65</p> <p>7/01/11 5 years, age 65, or age 70</p>	5 years, age 60	20 years	20 years	20 years, age 50 or 5 years, age 55	20 years or 5 years, age 50	20 years or 5 years, age 50
Minimum service for vesting	5 years	5 years	5 years	<p>Pre-7/01/13 5 yrs</p> <p>7/01/13 10 yrs</p>	5 years	5 years	5 years	5 years
Highest average compensation (HAC) period used in benefit calculation	<p>Tier One (pre-7/01/13): 3 years</p> <p>Tier Two (7/01/13) 5 years</p>	<p>Pre-7/01/11 3 years</p> <p>7/01/11 5 years</p>	3 years	3 years	<p>Pre-7/01/11 3 years</p> <p>7/01/11 5 years</p>	<p>Pre-7/01/11 3 years</p> <p>7/01/11 5 years</p>	3 years (final avg, not highest avg.)	3 years
Service retirement benefit multiplier	<p>Tier One 1.67% per year</p> <p>Tier Two (7/01/13) 1.67% per year, then 1.85% per year if attained 30 yrs service and age 60</p>	<p>Pre-7/01/11 >25 yrs: 1.78571% 25 yrs or more: 2%</p> <p>7/01/11 >10 yrs: 1.5% 10- 29 yrs: 1.78571% 30 yrs or more: 2%</p> <p>Money Purchase Option The greater of the above or actuarial equivalent of 2x member's accumulated contributions plus interest set by board (2.75%)</p>	<p>up to 15 years: 3.33%</p> <p>15 yrs or more: 1.785% for each year more than 15 years</p>	2.6% per year	2.5% per year	2.5% per year	2.5% per year	2.5% per year
Social Security coverage	Yes (most members)	Yes (most members)	Yes	No	Yes	Yes	No	No

Table 2 – ACTIVE MEMBER DATA**(Table E-1 in Valuations)**

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Total active contributing members (full- and part-time*)	19,046	29,039	58	233	1,502	1,033	829	735
Average age	45 years	48 years	58 years	40 years	39 years	41 years	39 years	40 years
Average hire age	34 years	39 years	49 years	29 years	32 years	33 years	30 years	29 years
Average years of service	10 years	9.1 years	8.6 years	10.4 years	7.2 years	7.9 years	8.8 years	10.4 years
Average annual salary (full-time members)	\$55,603	\$44,098	\$137,956	\$66,986	\$56,553	\$52,106	\$68,497	\$73,277

*excludes part-time active members with annual compensation of less than \$1,000

**Table 3 – POSTRETIREMENT BENEFIT INCREASES
Guarantee Annual Benefit Adjustment (GABA)**

(dates reflect tiers based on hire date)

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Minimum benefit or Guaranteed Annual Benefit Adjustment (GABA)	<p>GABA Tier One (Pre-7/01/13) 1.5% *</p> <p>Tier Two (7/01/13) Equal to or greater than 0.5% but no more than 1.50% depending on the funding status of the plan*</p> <p>Tier Two for calendar 2020 = 0.5%**</p>	<p>GABA Pre-7/01/07 3.0%</p> <p>7/01/07 1.5%</p> <p>7/01/13 1.5% reduced 0.1% for every 2 years system is below 90% funded</p> <p>Post 7/01/13 hires for calendar 2019 = 0.7%</p>	<p>Minimum Pre-7/01/97 Benefits increased same as salary of sitting judge</p> <p>GABA 7/01/97 or elected GABA 3.0%</p>	<p>Minimum Pre-7/01/97 2% of base salary of probationary officer</p> <p>GABA 7/01/97 or elected GABA 3.0%</p> <p>07/01/13 1.5%</p>	<p>GABA Pre-07/01/07 3.0%</p> <p>07/01/07 1.5%</p>	<p>GABA Pre-07/01/07 3.0%</p> <p>07/01/07 1.5%</p>	<p>Minimum Pre-7/01/97 ½ of monthly salary of new officer</p> <p>GABA 7/01/97 or elected GABA 3.0%</p>	<p>Minimum Pre-7/01/97 ½ of monthly salary of new firefighter</p> <p>GABA 7/01/97 or elected GABA 3.0%</p>
Waiting period for GABA	3 years	Pre-7/01/07 1 year	1 year	Pre-7/01/13 1 year 7/01/2013 3 years	1 year	1 year	1 year	1 year

Note:

*The TRS GABA for those hired on or after 7/01/2013 is: If 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 will be set by the board to an amount that is at least 0.5% but no more than 1.5%. The benefit increase will be effective on January 1.

** This is the actual percentage paid for the calendar year. However, because the Tier Two GABA may be increased to a maximum of 1.5% at some point, the actuaries conduct the valuation of liabilities assuming a 1.5% GABA is paid for all Tier Two members.

Table 4 – RETIREE AND BENEFIT RECIPIENT DATA

Table E-2 and Appendix D in Valuations

(dates reflect tiers based on hire date)

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Number of benefit recipients	16,605	23,856	72	350	763	384	870	678
Average age of current annuitants	72 years	72 years	76 years	69 years	65 years	65 years	66 years	69 years
Average age at retirement	59 years	61 years	66 years	51 years	54 years	58 years	50 years	53 years
Average years of service at retirement	25 years	21 years	19 years	22 years	19 years	19 years	21 years	24 years
Average annual benefit (service retirement)	\$24,096	\$19,178	\$56,123	\$36,036	\$28,832	\$22,434	\$32,409	\$40,691
Percent of income replacement provided under the benefit formula if member attains <u>full</u> -service retirement	Tier One (25 yrs) 41.67%	Pre 7/1/11 (30 yrs) 60%	Assuming 15 years	20 years	20 years	20 years	20 years	20 years
	Tier Two (30 yrs & 60+) 55.5%	Post 7/1/11 (30 yrs) 60%	49.95%	52%	50%	50%	50%	50%
Total benefits paid in FY 2020	\$384 million	\$449.6 million	\$4.0 million	\$12.6 million	\$21.9 million	\$8.6 million	\$28.1 million	\$27.5 million
Normal cost of benefits as they accrue FY 20	9.75%	9.81%	23.86%	23.38%	15.77%	15.44%	25.57%	24.88%

Table 5 – CONTRIBUTIONS
(dates reflect tiers based on hire dates)

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Employer contributions FY20	<p>Schools/cc/local gov't: 7.47% - base <u>1.7% - additional*</u> 9.17%</p> <p>State & MUS: 9.85% - base <u>1.7% - additional*</u> 11.55%</p> <p>*increases 0.1% each FY to cap of 2% through FY 2024</p>	<p>Local gov't: 6.8% - base <u>1.97% - additional*</u> 8.77%</p> <p>State & MUS: 6.9% - base <u>1.87% - additional*</u> 8.77%</p> <p>Schools: 6.8% - base <u>1.6% - additional*</u> 8.40%</p> <p>*increases 0.1% each FY to cap of 2% through FY 2024</p>	25.81%	28.15%	13.115%	9.00%	14.41%	14.36%
Employee contributions FY20	<p>Tier One (pre-7/01/13): 7.15% plus 1% additional contribution until system is 90% funded</p> <p>Tier Two (7/1/13): 8.15%</p>	7.90%	7.00%	<p>Pre-7/1/97 13%</p> <p>7/1/97 or elected GABA): 13.05%</p>	10.495%	10.56%	<p>6/30/75 7.0%</p> <p>7/1/97 8.5%</p> <p>7/1/97 or elected GABA 9%</p>	<p>Pre-7/1/97 9.5%</p> <p>7/1/97 or elected GABA 10.7%</p>
Additional funding from other sources FY 20 (dollar amts. from LFD)	<p>State GF: \$25 million plus 2.38% for schools/cc <u>0.11% for all</u> \$45 million</p> <p>U- System: 4.72% of MUS-RP payroll = \$12 million</p>	<p>State GF: \$33.9 million 0.10% for local gov't <u>0.37% for schools</u> \$34.9 million</p>	None	<p>State GF: 10.18% (\$1.7 million)</p>	None	None	<p>State GF: 29.37% (\$16.7 million)</p>	<p>State GF: 32.61% (\$17.8 million)</p>

Table 6 – DETAIL ON EMPLOYERS AND CONTRIBUTIONS

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Total number of participating employers	367	556	1	1	57	7	33	28
Employer types	State & local: School districts Comm. Colleges Education Coops Counties U-system State agencies	State & local: State agencies U-system Counties Cities Schools/cc Special districts (some smaller police and rural fire depts).	State: Judicial branch - justices/judges - supreme court - district courts - water court	State: Dept. of Justice - Hwy patrol off. - supervisors - assistants	State & County: Dept of Justice - investigators Counties - sheriffs - deputies - detention off.	State & U-system: Dept. of FWP - game wardens Dept. of Corrections - security guards - probation/parole U-system - campus security	Cities: - police officers (some smaller police depts are still covered under PERS)	Cities: - firefighters (some smaller fire depts and rural districts are still covered under PERS)
Total of employers' covered payroll (annual valuation compensation)	\$880,668,000	\$1,280,557,497	\$8,001,462	\$15,607,832	\$84,942,848	\$53,825,163	\$56,783,680	\$53,858,929
Payroll by type of employer (as percentage of total covered payroll)	Local: 98.1% U-system: 1.6% State: 0.3%	Local: 47.5% State: 43.5% - of which 35.6% is GF U-system: 8.9%	State: 100% (GF)	State: 100% - of which 26.1% is GF	County: 95.4% State GF: 4.6%	State: 94.8% U-System: 5.2% - of which 0% is GF	Cities: 100%	Cities: 100%

Table 7 – ACTUARIAL FUNDING DATA

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Actuarial value of assets	\$4,344,045,000	\$6,099,398,162	\$110,638,941	\$158,658,054	\$400,719,971	\$221,948,510	\$471,328,235	\$499,180,209
Actuarial Accrued Liability (AAL)	\$6,310,005,000	\$8,234,002,983	\$67,934,098	\$245,915,150	\$493,241,768	\$264,744,609	\$666,098,580	\$612,294,224
Unfunded portion of accrued actuarial liability (UAAL)	\$1,965,960,000	\$2,134,604,821	(\$42,704,843)	\$87,257,096	\$92,521,797	\$42,796,099	\$194,770,345	\$113,114,015
Funded ratio (rounded)	69%	74%	163%	65%	81%	83%	71%	82%
Total Contributions	19.71%	16.77%	32.81%	51.38%	23.61%	19.56%	52.78%	57.67%
Normal cost	9.75%	9.81%	23.86%	23.38%	15.77%	15.44%	25.57%	24.88%
Amt of contributions as % of payroll available to fund UAAL FY20	9.61%	6.64%	(29.90%)	31.38%	6.2%	4.52%	18.54%	32.61%
Years to amortize unfunded liability	29 years	35 years	0 years	39 years	21 years	40 years	16 years	8 years
ARC shortfall (additional amount required to meet 30-year amortization)	0%	0.61%	(38.74%)	3.61%	(1.47%)	0.57%	(8.49%)	(20.78%)
Projected ARC shortfall as rough annual dollar amount	\$0	\$7,811,400	\$0	\$563,443	\$0	\$306,803	\$0	\$0

Table 8 – INVESTMENTS & RETURNS (Sec II, Tables 3 & 4)
As of June 30, 2020
(Source: Montana Board of Investments)

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Amount invested (fair value on 6/30/20)	\$4.1 billion	\$5.84 billion	\$105.7 million	\$151.3 million	\$383.5 million	\$212.6 million	\$433.6 million	\$459.3 million
Market rate of return: FY 2020	2.73%	2.71%	2.71%	2.72%	2.70%	2.69%	2.74%	2.73%
Actuarial rate of return: FY 2020 (4-year smoothing)	7.0%	7.11%	7.08%	7.06%	7.04%	6.99%	6.81%	6.79%
Avg. market rate of return last 10 years	8.97%	8.80%	8.75%	8.78%	8.79%	8.74%	8.53%	8.53%
Avg. actuarial rate of return last 10 years	7.59%	7.55%	7.56%	7.53%	7.62%	7.67%	7.37%	7.41%
Asset allocation all pension funds	*STIP = 2% **CAPP = 98% * Short Term Investment Pool **Consolidated Asset Pension Pool		<u>CAPP Asset Allocation (as of June 30, 2020)</u> Domestic Equity Core Fixed Income International Equity Private Investments Real Estate Non-Core Fixed Income Real assets Cash Equivalents		<u>Actual</u> 31.28% 20.11% 16.97% 13.11% 8.59% 4.39% 3.07% 2.47%	<u>Range set in policy</u> 24 - 36% 10 - 20% 12 - 22% 11 - 19% 5 - 13% 4 - 7% 2 - 8% 0 - 6%		

Table 9 – CASH FLOW

(Valuation Summary Table and Tables 2 and 9 and Montana Board of Investments)

Notes on cash flow and cash need: Investment strategy must consider how much of the pension fund’s assets need to be kept in more liquid investments to pay benefits as they come due. The more mature a plan becomes (i.e., the more retirees there are compared to current employees), the more cash is needed to cover benefit payments. If a plan has a “negative cash flow”, it means that cash flowing out to pay benefits and expenses is greater than cash income from current contributions. However, because the plan is earning investment income, negative cash flow is not a “bad thing”. Net cash flow and net cash need are indicators of fiscal health and show how much principle must be used to pay for benefits and expenses. Thus, cash need affects the earning potential of the portfolio.

	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIIGHTERS' UNIFIED (FURS) 1981
Benefits & Expenses (includes withdrawals)	\$393.5 million	\$468.0 million	\$4.2 million	\$13.2 million	\$23.4 million	\$9.7 million	\$30.5 million	\$27.1 million
Total contributions	\$228.6 million	\$252.0 million	\$2.5 million	\$8.4 million	\$20.3 million	\$10.7 million	\$30.2 million	\$31.6 million
Net investment income	\$112.6 million	\$157.9 million	\$2.8 million	\$4.1 million	\$10.2 million	\$5.6 million	\$11.7 million	\$12.2 million
Net cash flow	(\$52.3 million)	(\$58.1 million)	\$1.1 million	(\$0.7 million)	\$7.1 million	\$6.6 million	\$11.4 million	\$16.7 million
Net cash need (contributions minus benefits and expenses)	\$164.9 million	\$216 million	\$1.7 million	\$4.8 million	\$3.1 million	Surplus of \$1.0 million	\$0.3 million	Surplus of \$4.5 million
Net cash need as percentage of assets invested	4.0%	3.6%	1.6%	3.17%	0.8%	N/A - surplus	0.06%	N/A - surplus
Net increase (decrease) in plan assets	(\$52.3 million)	(\$54.6 million)	\$1.3 million	(\$0.2 million)	\$7.2 million	\$7.0 million	\$10.8 million	\$15.6 million
Increase (decrease) in actuarial accrued liability (AAL) (FY20)	\$36.9 million	\$276.9 million	\$2.9 million	\$9.1 million	\$30.5 million	\$19.6 million	\$28.2 million	\$33.1 million
Ratio of active employees to retirees and beneficiaries	1.19	1.22	0.81	0.67	1.97	2.69	0.95	1.08

Table 10 – INVESTMENT EXPENSE DATA
(Board of Investments Expenses)

For the fiscal year ended June 30, 2020	TEACHERS' RETIREMENT SYSTEM (TRS) 1937	PERS DEFINED BENEFIT PLAN (PERS-DBRP) 1945	JUDGES (JRS) 1967	HIGHWAY PATROL OFFICERS' (HPORS) 1945	SHERIFFS' (SRS) 1974	GAME WARDENS' AND PEACE OFFICERS' (GWPORS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Total Assets Under Management 6/30/2020	\$4,137,661,439	\$5,836,485,563	\$105,690,448	\$151,266,420	\$383,461,960	\$212,572,371	\$433,584,675	\$459,336,585
BOI Fixed/Internal Costs	\$1,297,238	\$1,829,852	\$33,136	\$47,425	\$120,223	\$66,646	\$135,937	\$144,011
BOI Fixed/Internal Costs as Percentage of Assets	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%
BOI Variable/ External Costs TOTAL	\$15,820,223	\$22,315,625	\$404,104	\$578,363	\$1,466,155	\$812,764	\$ 1,657,798	\$ 1,756,259
Variable/ External Costs as Percentage of Assets	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%

Notes:

Each plan has assets allocated to STIP and to CAPP. See Table 8 for general information about asset allocation.

Fixed costs are those associated with internal management by BOI staff.

Variable costs are those associated with management of funds by external entities.

According to CEM Benchmarking, which is an outside consultant to the BOI providing comparisons with other U.S. public funds and peer pension funds, the peer group median cost was 0.562% and the BOI's benchmark cost was 0.557%.

Table 11 – VOLUNTEER FIREFIGHTER'S COMPENSATION ACT
(Established in 1935)

Eligible fire companies (as defined in 19-17-109, MCA)	235
Members	2,401 active members 1,523 benefit recipients
Minimum age and service requirements	For full benefit: Age 55 and 20 years of service For reduced benefit: Age 60 and 10 years of service
Vesting	10 Years
Basic benefit formula	<ul style="list-style-type: none"> • Age 55 with 20 years of credit for service, or • Age 60 with 10 years of credit for service • \$8.75 per month x year of credit for service up to 20 years • \$7.50 per month x year of credit for service after 20 years • VFCA members retiring prior to July 1, 2011, maximum credited service is 30 years • VFCA members retiring on or after July 1, 2011, \$7.50 per month for each additional year of credited service after 30 years in each year that the trust is actuarially sound and the amortization period is 20 years or less; otherwise benefits for the year will only be paid on credited service up to 30 years
Disability benefit	The greater of: <ul style="list-style-type: none"> a. \$87.50 per month, or b. (\$8.75 per month x year of credit for service up to 20 years) + (\$7.50 per month x year of credit for service after 20 years up to 30 years of credit for service)
Survivorship benefit	\$7.50 per year of service (maximum of 40 months including any amounts retiree received).
Average age of active members	45 years of age
Average years of service of active members	9 years of service
Average annual benefit for full-service retiree	\$ 2,004
Contributions	State General Fund: amount equal to 5% of insurance premium taxes collected (See Sections 19-17-301 and 50-3-109, MCA)
Actuarial value of assets Market value of assets	\$41,716,780
Actuarial liabilities	\$47,868,436
Unfunded liability	\$6,151,656
Years to amortize unfunded liability	4 years
Funded ratio	87.15%

**Table 12 – PERS DEFINED CONTRIBUTION (DC) RETIREMENT PLAN
As of June 30, 2020**

Membership	New hires have 12 months to make a one-time, irrevocable choice between the DB and DC plans – default is DB plan
Contributing members	3,100
Employee Contributions For FY 19	7.9% of salary – all allocated to individual member accounts Reduced to 6.9% when PERS-DB plan amortization period is less than 25 years.
Employer and State GF Contributions for FY 20	8.77% of salary (reduced to 6.9% when PERS-DB amortization period is less than 25 years) Contributions allocated as follows: -- 8.43 % to member accounts -- 0.04% to an educational fund -- 0.3% to disability trust fund
Total contributions to member accounts	16.33%
Total Amount Invested	\$ 295.1 million
Average Account Balance	\$ 57,447
Investment Choices	20 funds (5 categories) evaluated quarterly. Options range from aggressive to conservative and include mutual funds, bond funds, and target date funds. <u>Allocations (totals)</u> 6.8% Stable value fund 2.3% Bond funds 58.3% Target date/balanced funds 26.4% U.S. equity 6.2% International equity
Vesting	5 years for employer contributions and investment earnings
Benefits	Contributions plus investment earnings, minus administrative expenses; payable at any time after termination, with a possible federal tax penalty for withdrawal before age 59½.
Disability Benefit	A defined disability benefit based on a 1/56 x HAC x years of service formula, same as provided in the PERS-DBRP.
Death/survivorship benefit	Member's account balance
Plan Administration	PERB is the plan's board of trustees Empower Retirement Services is the plan's record keeper

**Table 13 – DEFERRED COMPENSATION (457) PLAN
As of June 30, 2020**

Membership	Voluntary supplemental retirement savings plan available to all employees of the State, Montana University System, and contracting political subdivisions.
Contributing Members	5,601
Employee Contributions	Voluntary, pre-tax deferral or designated ROTH deferral
Employer Contributions	None, unless specified in an employer contract
Total Amount Invested	\$560.3 million
Number of Investment Choices	21 funds (5 categories) evaluated quarterly. Options range from aggressive to conservative and include mutual funds, bond funds, and target date funds. <u>Allocations (totals)</u> 43.6% Stable value fund 2.6% Bond funds 15.1% Target date/balanced funds 31.8% U.S. equity 6.9% International equity
Vesting	Participants are fully vested in their accounts immediately
Benefit Eligibility	Not available to distribute until separation from service, retirement, death, or upon an unforeseeable emergency, while still employed, provided IRS-specified criteria are met.
Benefit Amount	Lump sum or periodic benefit payment, at the option of the participant. Based on individual account balance and plan provisions. IRS permitted rollovers are also possible.
Death/survivorship Benefit	Member's account balance
Plan Administration	PERB is the plan's board of trustees Great-West Retirement Services is the plan's record keeper

Table 14 – MONTANA UNIVERSITY SYSTEM RETIREMENT PROGRAM (MUS-RP)

As of June 30, 2020

(Source: Office of Commissioner of Higher Education and Board of Investments)

<p>Membership</p>	<p>All administrative, scientific, and instructional staff of the University System and classified staff that elected MUS-RP rather than the PERS-DC plan.</p> <p>Contributing (active): 4,364 Non-contributing (inactive, retired, etc): 6,983 Avg. age: 55 yrs Avg. yrs of membership: 8.65 yrs</p>								
<p>Retirement eligibility</p>	<p>A plan member may “retire” (i.e., access the MUS-RP account) once the member has terminated from service and completed the break-in-service requirement. There may be federal tax penalties for withdrawal prior to age 59½.</p>								
<p>Benefit</p>	<p>An MUS-RP member’s benefit depends on total contributions to the member’s individual account, plus investment earnings, minus administrative expenses. The MUS-RP is administered by TIAA (Teachers’ Insurance and Annuity Association)</p> <p>Avg. account balance: \$ 95,802</p>								
<p>Death and survivor benefits</p>	<p>The full account value in member’s annuity account is payable to the beneficiary. The benefit can be paid in a single sum, as an annuity to the beneficiary for life, or as an annuity for a fixed period of years. The annuity may also be deferred as federal law permits.</p>								
<p>Total Amount Invested</p>	<p>\$1 billion</p>								
<p>Investment Choices</p>	<p>34 funds, (12 target date bands) 6 asset class categories, evaluated quarterly. Options range from aggressive to conservative and include mutual funds, bond funds, annuity investments, and target date funds.</p> <p><u>Allocations (totals)</u> 36% Equities 8% Fixed Income 21% Guaranteed 3% Money Market 29% Multi-Asset 3% Other (Real Estate)</p>								
<p>Total MUS-RP payroll covered</p>	<p>\$279.3 million</p>								
<p>Contributions to member accounts as a percentage of payroll</p>	<table border="0"> <tr> <td>Contract and Professional Staff:</td> <td>Classified Staff:</td> </tr> <tr> <td>Employer: 5.956%</td> <td>Employer: 8.43%</td> </tr> <tr> <td>Employee: 7.044%</td> <td>Employee: 7.90%</td> </tr> <tr> <td>TOTAL: 13.0%</td> <td>TOTAL: 16.33%</td> </tr> </table>	Contract and Professional Staff:	Classified Staff:	Employer: 5.956%	Employer: 8.43%	Employee: 7.044%	Employee: 7.90%	TOTAL: 13.0%	TOTAL: 16.33%
Contract and Professional Staff:	Classified Staff:								
Employer: 5.956%	Employer: 8.43%								
Employee: 7.044%	Employee: 7.90%								
TOTAL: 13.0%	TOTAL: 16.33%								
<p>Supplemental employer contributions to TRS for unfunded liability.</p>	<table border="0"> <tr> <td>Contract and Professional Staff:</td> <td>Classified Staff:</td> </tr> <tr> <td>to TRS for unfunded liability: 4.72%</td> <td>to PERS for education: 0.4%</td> </tr> </table>	Contract and Professional Staff:	Classified Staff:	to TRS for unfunded liability: 4.72%	to PERS for education: 0.4%				
Contract and Professional Staff:	Classified Staff:								
to TRS for unfunded liability: 4.72%	to PERS for education: 0.4%								
<p>Increase required in supplemental contribution rate to amortize unfunded liability by 2033 as required under 19-20-621, MCA</p>	<p>9.18% increase needed to the current 4.72% to reach a total supplemental of 13.9%</p> <p><u>Note:</u> As of June 30, 2020, valuation. This increase is needed if the legislature wishes to continue to have the unfunded liability created in TRS when the MUS-RP was established paid by the U-System and not subsidized by the TRS pension fund.</p>								