

GREEN SHEETS

FISCAL YEAR 2022

MONTANA'S PUBLIC EMPLOYEE RETIREMENT SYSTEMS

SUMMARY OF BENEFIT, ACTUARIAL, AND INVESTMENT DATA AS OF JUNE 30, 2022

STATEWIDE DEFINED BENEFIT RETIREMENT SYSTEMS

- Public Employee Retirement System - Defined Benefit Plan (PERS-DB)
- Teachers' Retirement System (TRS)
- Sheriffs' Retirement System (SRS)
- Municipal Police Officers' Retirement System (MPORS)
- Game Wardens' and Peace Officers' Retirement System (GWPORS)
- Firefighters' Unified Retirement System (FURS)
- Highway Patrol Officers' Retirement System (HPORS)
- Judges' Retirement System (JRS)
- Volunteer Firefighters' Compensation Act (VFCA)

OTHER STATEWIDE RETIREMENT SYSTEMS

- Public Employee Retirement System - Defined Contribution Plan (PERS-DC)
- 457 (b) Deferred Compensation Plan
- Montana University System Retirement Program (MUS-RP)

Prepared by Rebecca C. Power, Legislative Research Analyst

Information pulled from the fiscal year 2022 actuarial valuations and provided by the Montana Public Employee Retirement Administration, the Teachers' Retirement System, the Montana Board of Investments, the Office of the Commissioner of Higher Education, and the Legislative Fiscal Division. Updated December 2022.



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PART ONE

SUMMARY

PART ONE - SUMMARY

Introduction

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Summary of Valuation Results

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INTRODUCTION

Welcome to the Fiscal Year 2022 Green Sheets. You might notice that the Green Sheets look different this year. All of the data points from previous versions are included, though some have been moved to different tables. The tables are in a different order from previous versions and are grouped to make the Sheets more user-friendly. The 2022 Sheets also include some historical data (FY17-FY22) in part six (pg. 20-25) to provide a more comprehensive view of the retirement systems' performance over time. The information in parts 2-6 is about the nine statewide defined benefit plans and the information in part 7 is about the other three statewide retirement systems.

Data for the tables were pulled from the annual actuarial valuation reports for the pension systems. Additional information was provided by the Teachers' Retirement System (TRS), the Montana Public Employee Retirement Administration (MPERA), the Montana Board of Investments (BOI), the Office of the Commissioner of Higher Education (OCHE), and the Legislative Fiscal Division (LFD).

MPERA and TRS conducted experience studies of their systems during the spring of 2022. As a result of the findings, MPERA decreased their investment rate of return assumption from 7.65% to 7.30%, decreased their wage growth assumption from 3.50% to 3.25%, and updated their mortality, retirement, disability, termination, and salary merit scales to better reflect recent experience. TRS decreased their investment rate of return assumption from 7.50% to 7.30%, increased their inflation assumption from 2.50% to 2.75%, and updated their mortality, retirement, termination, and salary merit scales to better reflect recent experience.

Additional resources can be found towards the end of the document, including a list of pension/retirement acronyms on page 31, a glossary on pages 32-35, links to the actuarial valuation reports on page 36, and a full list of sources and MCA references on pages 37-41.

SUMMARY OF VALUATION RESULTS AS OF JUNE 30, 2022

SYSTEM	FUNDED RATIO (ROUNDED)	AMORTIZATION RATE	ACTUARIAL VALUE OF ASSETS	UNFUNDED ACTUARIALLY ACCRUED LIABILITY (UAAL)	ACTIVE MEMBERS	RETIREES & BENEFIT RECIPIENTS
PERS-DB	75%	32 years	\$6,770,813,514	\$2,255,970,576	28,508	25,026
TRS	72%	25 years	\$4,799,597,000	\$1,891,678,000	19,975	17,369
SRS	79%	33 years	\$469,548,805	\$127,569,691	1,481	809
MPORS	71%	24 years	\$555,005,479	\$223,859,624	841	908
GWPORS	83%	does not amortize	\$266,067,351	\$54,407,853	977	442
FURS	81%	12 years	\$603,173,541	\$144,886,882	749	691
HPORS	66%	47 years	\$179,360,586	\$93,880,222	252	354
JRS	174%	0 years	\$126,814,789	(\$53,891,924)	59	74
VFCA	91%	3 years	\$48,077,791	\$4,526,582	2,233	1,523
TOTALS	--	--	\$13,818,458,856	\$4,742,887,506	55,075	47,196

PART TWO

DEMOGRAPHIC DATA

PART TWO - DEMOGRAPHIC DATA

Table 1: Active Member Data

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Table 2: Retiree & Benefit Recipient Data

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TABLE 1: ACTIVE MEMBER DATA

SYSTEM	ACTIVE MEMBERS	AVERAGE AGE (<i>ROUNDED</i>)	AVERAGE HIRE AGE (<i>ROUNDED</i>)	AVERAGE YEARS OF SERVICE (<i>ROUNDED</i>)	AVERAGE ANNUAL SALARY	RATIO OF ACTIVE MEMBERS TO RETIREES AND BENEFICIARIES
PERS-DB	28,508	47	39	9 yrs.	\$47,351	1.14
TRS	19,975	44	34	10 yrs.	\$58,560	1.15
SRS	1,481	39	32	7 yrs.	\$65,071	1.83
MPORS	841	38	30	8 yrs.	\$72,924	0.93
GWORS	977	42	34	9 yrs.	\$55,565	2.21
FURS	749	40	29	11 yrs.	\$79,298	1.08
HPORS	252	39	30	9 yrs.	\$68,551	0.71
JRS	59	58	49	9 yrs.	\$142,511	0.80
VFCA	2,233	44	37	7 yrs.	N/A*	1.47
TOTAL/AVG.	55,075	--	--	--	--	1.17

NOTE:

- *Members of the VFCA are volunteers and do not receive a salary.

TABLE 2: RETIREE AND BENEFIT RECIPIENT DATA

SYSTEM	NUMBER OF BENEFIT RECIPIENTS	AVERAGE AGE OF CURRENT ANNUITANTS (ROUNDED)	AVERAGE AGE AT RETIREMENT (ROUNDED)	AVERAGE YEARS OF SERVICE AT RETIREMENT (ROUNDED)	AVERAGE ANNUAL BENEFIT (SERVICE RETIREMENT)	PERCENT OF INCOME REPLACEMENT PROVIDED UNDER THE BENEFIT FORMULA IF MEMBER ATTAINS FULL SERVICE RETIREMENT*	TOTAL BENEFITS PAID IN FY 2022
PER-DB	25,026	72	61	22	\$20,573	60%	\$509,232,157
TRS	17,369	73	59	25	\$24,811	Tier One** 41.67% Tier Two** 55.5%	\$414,346,628
SRS	809	65	54	19	\$30,550	50%	\$24,995,215
MPORS	908	62	50	21	\$34,704	50%***	\$31,824,571
GWPORS	442	65	58	19	\$24,284	50%	\$10,587,005
FURS	691	65	53	24	\$44,035	50%	\$30,345,902
HPORS	354	64	51	22	\$38,175	52%	\$13,735,628
JRS	74	73	66	19	\$59,616	49.95%	\$4,356,996
VFCA	1,523	73	60	19	\$2,024	Set amount of \$175 per month for full service retirement	\$3,097,695
TOTAL/ AVG.	47,196	--	--	--	--	--	\$1,042,521,797

NOTES:

- *Highest Average Salary x Retirement Factor x Years of Service = Percent of Income Replacement
- **Tier one is calculated with 25 years of service and tier two is calculated with 30 years of service
- ***MPORS formula: Final Average Salary x Retirement Factor x Years of Service = Percent of Income Replacement

PART THREE

FUNDING & INVESTMENT DATA

PART THREE - FUNDING & INVESTMENT DATA

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TABLE 3: ACTUARIAL FUNDING DATA

SYSTEM	ACTUARIAL VALUE OF ASSETS	ACTUARIALLY ACCRUED LIABILITY (AAL)	UNFUNDED ACTUARIALLY ACCRUED LIABILITY (UAAL)	NORMAL COST	UAAL RATE	TOTAL CONTRIBUTIONS
PERS-DB	\$6,770,813,514	\$9,026,784,090	\$2,255,970,576	9.72%	7.21%	\$251.47M
TRS	\$4,799,597,000	\$6,691,275,000	\$1,891,678,000	10.87%	9.14%	\$206.73M
SRS	\$469,548,805	\$597,118,496	\$127,569,691	16.18%	7.43%	\$20.68M
MPORS	\$555,005,479	\$778,865,103	\$223,859,624	30.19%	22.59%	\$33.7M
GWPORS	\$266,067,351	\$320,475,204	\$54,407,853	18.50%	1.06%	\$10.31M
FURS	\$603,173,541	\$748,060,423	\$144,886,882	32.20%	25.46%	\$35.1M
HPORS	\$179,360,586	\$273,240,808	\$93,880,222	28.78%	22.60%	\$13.27M
JRS	\$126,814,789	\$72,922,865	(\$53,891,924)	27.24%	(20.24%)	\$1.49M
VFCA	\$48,077,791	\$52,604,373	\$4,526,582	\$697,657*	\$362,825*	\$3.47M
TOTAL	\$13,818,458,856	\$18,561,346,362	\$4,742,887,506	--	--	\$576.22M

NOTE:

- *Percent not included in VFCA valuation, just dollar amount

TABLE 4: INVESTMENTS AND RETURNS

SYSTEM	AMOUNT INVESTED (FAIR VALUE ON JUNE 30, 2022)	MARKET RATE OF RETURN: FY 22	ACTUARIAL RATE OF RETURN: FY 22 (4-YEAR SMOOTHING)	AVERAGE MARKET RATE OF RETURN LAST 10 YRS.	AVERAGE ACTUARIAL RATE OF RETURN LAST 10 YRS.	LONGEST MEASURABLE RETURN (28 YRS.)
PERS-DB	\$6.64B	-4.32%	8.16%	8.62%	9.17%	7.68%
TRS	\$4.69B	-4.33%	8.14%	8.62%	6.6% (15 yr.)	7.70%
SRS	\$459.52M	-4.30%	8.11%	8.61%	9.10%	7.59%
MPORS	\$524.35M	-4.35%	7.87%	8.62%	8.81%	7.56%
GWPORS	\$259.83M	-4.31%	8.07%	8.61%	8.98%	7.60%
FURS	\$569.48M	-4.35%	7.85%	8.62%	8.80%	7.55%
HPORS	\$175.04M	-4.30%	8.09%	8.62%	9.13%	7.58%
JRS	\$124.09M	-4.32%	8.11%	8.62%	9.08%	7.59%
VFCA	\$47.12M	-4.32%	7.89%	8.61%	8.71%	7.41%
TOTAL	\$13.49B	--	--	--	--	--

Asset Allocation All Pension Funds	Short Term Investment Pool (STIP) = 1%	<u>CAPP Asset Allocation (6/30/22)</u>		
		<u>Actual</u>	<u>Range Set in Policy</u>	
	Consolidated Asset Pension Pool (CAPP) = 99%	Domestic Equity	28%	24 - 36%
		Core Fixed Income	13.5%	9 - 19%
		International Equity	16.1%	12 - 22%
		Private Investments	17.2%	11 - 19%
		Real Estate	12.6%	6 - 14%
		Non-Core Fixed Income	5.9%	5 - 9%
		Real Assets	5.5%	2 - 8%
Cash Equivalent	1.4%	0 - 5%		

TABLE 5: CASH FLOW

SYSTEM	BENEFITS & EXPENSES (INCLUDES WITHDRAWALS)	NET INVESTMENT INCOME	NET CASH NEEDED (CONTRIBUTIONS MINUS BENEFITS & EXPENSES)	NET CASH NEEDED AS PERCENTAGE OF ASSETS INVESTED	NET INCREASE (DECREASE) IN PLAN ASSETS	INCREASE (DECREASE) IN ACTUARIAL ACCRUED LIABILITY (AAL) FY 22
PERS-DB	\$512.77M	-\$295.74M	\$261.31M	3.94%	(\$557.05M)	\$492.2M
TRS	\$394.28M	-\$207.33M	\$187.55M	4.0%	(\$394.88M)	\$228.0M
SRS	\$25.25M	\$20.63M	\$4.57M	1.0%	(\$25.2M)	\$71.9M
MPORS	\$35.95M	-\$23.85M	\$2.25M	0.43%	(\$26.1M)	\$84.3M
GWPORS	\$11.52M	-\$11.71M	\$1.21M	0.46%	(\$12.92M)	\$29.6M
FURS	\$31.94M	-\$25.97M	Surplus of \$3.16M*	N/A – surplus*	(\$22.82M)	\$101.9M
HPORS	\$15.81M	-\$7.83M	\$2.55M	1.45%	(\$10.38M)	\$21.2M
JRS	\$5.05M	-\$5.54M	\$3.56M	2.87%	(\$9.1M)	\$4.5M
VFCA	\$4M	-\$1.96M	\$538,728	1.14%	(\$2.5M)	\$7.5M
TOTAL	\$1,036,530,000	-\$599,560,000	\$460,378,728	--	(\$1.06B)	\$1.04B

NOTE:

- *FURS received a contribution of \$17,128,648 in August 2021 resulting in a surplus despite the negative investment income (per Board of Investments).

TABLE 6: INVESTMENT EXPENSE DATA

SYSTEM	TOTAL ASSETS UNDER MANAGEMENT AS OF JUNE 30, 2022	BOI FIXED/ INTERNAL COSTS	BOI FIXED/ INTERNAL COSTS AS PERCENTAGE OF ASSETS	BOI VARIABLE/ EXTERNAL COSTS TOTAL	BOI VARIABLE/ EXTERNAL COSTS AS PERCENTAGE OF ASSETS
PERS-DB	\$6,639,420,316	\$2,581,615	0.039%	\$25,127,228	0.38%
TRS	\$4,689,883,348	\$1,825,450	0.039%	\$17,759,976	0.38%
SRS	\$459,518,655	\$175,796	0.038%	\$1,710,676	0.37%
MPORS	\$524,345,621	\$202,481	0.039%	\$1,970,900	0.38%
GWPORS	\$259,825,790	\$99,228	0.038%	\$965,730	0.37%
FURS	\$569,476,437	\$218,851	0.038%	\$2,130,152	0.37%
HPORS	\$175,035,285	\$67,632	0.039%	\$658,172	0.38%
JRS	\$124,085,209	\$47,989	0.039%	\$467,264	0.38%
VFCA	\$47,116,691	\$17,431	0.037%	\$169,645	0.36%
TOTAL	\$13,488,707,352	\$5,236,473	--	\$50,959,743	--

NOTES:

- Each plan has assets allocated to STIP and to CAPP. See Table 4 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.

TABLE 7: SENSITIVITY TO LOWER INVESTMENT RETURN ASSUMPTIONS

0.5% LOWER ASSUMPTION

- MPERA & TRS - Lowered from 7.30% to 6.80% Investment Return Assumption

SYSTEM	FUNDED RATIO (ROUNDED)	AMORTIZATION PERIOD	CONTRIBUTION INCREASE NEEDED TO MAINTAIN CURRENT AMORTIZATION (PERCENTAGE)	CONTRIBUTION INCREASE NEEDED TO MAINTAIN CURRENT AMORTIZATION (DOLLAR AMOUNT)
PERS-DB	71%	59 years	2.34%	\$31.8M
TRS	68%	40 years	2.97%	\$28.5M
SRS	74%	does not amortize	3.53%	\$3.4M
MPORS	67%	48 years	9.46%	\$5.8M
GWPORS	77%	does not amortize	11.79%	\$6.4M
FURS	75%	23 years	13.30%	\$7.9M
HPORS	62%	does not amortize	6.37%	\$1.1M
JRS	166%	0 years	0%	\$0
VFCA	87%	4 years	16.21%	\$0.5M

1.0% LOWER ASSUMPTION

- MPERA & TRS - Lowered from 7.30% to 6.30% Investment Return Assumption

SYSTEM	FUNDED RATIO (ROUNDED)	AMORTIZATION PERIOD	CONTRIBUTION INCREASE NEEDED TO MAINTAIN CURRENT AMORTIZATION (PERCENTAGE)	CONTRIBUTION INCREASE NEEDED TO MAINTAIN CURRENT AMORTIZATION (DOLLAR AMOUNT)
PERS-DB	67%	does not amortize	5.07%	\$68.5M
TRS	64%	82 years	6.29%	\$60.5M
SRS	69%	does not amortize	7.37%	\$7.1M
MPORS	62%	does not amortize	19.24%	\$11.8M
GWPORS	72%	does not amortize	18.24%	\$9.9M
FURS	70%	58 years	28.12%	\$16.7M
HPORS	57%	does not amortize	13.89%	\$2.4M
JRS	159%	0 years	0%	\$0
VFCA	82%	7 years	55.11%	\$1.7M

PART FOUR

CONTRIBUTIONS

PART FOUR - CONTRIBUTIONS

Table 8: Employer, Employee, and State
Contributions

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Table 9: Employer Details and Covered Payroll

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TABLE 8: EMPLOYER, EMPLOYEE, AND STATE CONTRIBUTIONS

SYSTEM	EMPLOYER CONTRIBUTIONS FY 22	MEMBER CONTRIBUTIONS FY 22	ADDITIONAL FUNDING FROM STATE GENERAL FUND FY 22
PERS-DB	<p><u>State & MUS</u> 6.9% base + 2.07% supplemental* = 8.97%</p> <p><u>Local Government & School Districts</u> 6.8% base + 2.07% supplemental* = 8.87%</p>	7.9%**	<p><u>State General Fund</u> 0.1% for local govt + 0.27% for schools + 101% of previous year contribution = \$35.9M</p>
TRS	<p><u>State & MUS</u> 9.85% base + 1.8% supplemental = 11.65%***</p> <p><u>School Districts & Community Colleges & Local Government</u> 7.47% base + 1.8% supplemental = 9.27%***</p>	<p><u>Tier One (Before 7/1/13)</u> 7.15% plus 1% additional contribution until system is 90% funded = 8.15%</p> <p><u>Tier Two (After 7/1/13)</u> 8.15%</p>	<p><u>State General Fund</u> \$25 million + 2.38% for schools/cc + 0.11% for all = \$47.99M</p> <p><u>MUS</u> 4.72% of MUS-RP Payroll = \$12.92M</p>
SRS	13.115%	10.495%	None
MPORS	14.41%	9.00%	State General Fund: \$18.1M
GWPORS	9.00%	10.56%	None
FURS	14.36%	10.69%	State General Fund: \$19.4M
HPORS	28.15%	13.05%	State General Fund: \$1.9M
JRS	0%****	7.00%	None
VFCA	0%*****	0%*****	5% of certain fire insurance premiums under 19-17-301, MCA

NOTES:

- *Increases 0.1% each FY to cap of 2.27% through FY 2024
- **Decreases to 6.9% when amortization period drops below 25 years and remains below 25 years following the termination of the temporary 1% increase and the additional employer contribution rate
- ***Increases 0.1% each FY to cap of 2% through FY 2024
- ****SB 175 (2021) changed the employer contribution rate to 0% from July 2021 to June 2023
- *****VFCA are volunteers and not paid for their work, so they do not have a member contribution rate; there is no employer contribution rate, rather there is a GF appropriation (19-17-301, MCA)

TABLE 9: EMPLOYER DETAILS AND COVERED PAYROLL

SYSTEM	TOTAL NUMBER OF PARTICIPATING EMPLOYERS	EMPLOYER TYPES	TOTAL OF EMPLOYERS' COVERED PAYROLL (ANNUAL VALUATION COMPENSATION)	PAYROLL BY TYPE OF EMPLOYER (AS PERCENTAGE OF TOTAL COVERED PAYROLL)
PERS-DB	539	<ul style="list-style-type: none"> ▪ State Agencies ▪ MUS ▪ Counties ▪ Cities ▪ Schools & Community Colleges ▪ Special Districts ▪ Some Smaller Police and Rural Fire Depts 	\$1,349,882,543	State: 43.15% Local: 47.95% MUS: 8.90%
TRS	363	<ul style="list-style-type: none"> ▪ School Districts ▪ Community Colleges ▪ Education Co-ops ▪ Counties ▪ MUS ▪ State Agencies 	\$960,836,000	State: 0.9% Local: 97.8% MUS: 1.3%
SRS	57	<ul style="list-style-type: none"> ▪ Dept of Justice <ul style="list-style-type: none"> ○ Investigators ▪ Counties <ul style="list-style-type: none"> ○ Sheriffs ○ Deputies ○ Detention Officers 	\$96,370,364	State: 4.87% County: 95.13%
MPORS	32	<ul style="list-style-type: none"> ▪ City Police Officers 	\$61,329,209	Cities: 100%
GWPORS	7	<ul style="list-style-type: none"> ▪ Dept. of FWP <ul style="list-style-type: none"> ○ Game Wardens ▪ Dept. of Corrections <ul style="list-style-type: none"> ○ Security Guards ○ Probation/Parole ▪ MUS <ul style="list-style-type: none"> ○ Campus Security 	\$54,286,855	State: 94.86% MUS: 5.14%
FURS	26	<ul style="list-style-type: none"> ▪ City Firefighters 	\$59,394,409	Cities: 100%
HPORS	1	<ul style="list-style-type: none"> ▪ Dept. of Justice <ul style="list-style-type: none"> ○ Highway Patrol Officers ○ Supervisors 	\$17,274,748	State: 100%
JRS	1	<ul style="list-style-type: none"> ▪ Judicial Branch <ul style="list-style-type: none"> ○ Justices/Judges ○ Supreme Court ○ District Courts ○ Water Court 	\$8,408,166	State: 100%
VFCA	220	<ul style="list-style-type: none"> ▪ Fire Companies as defined in 19-17-109, MCA 	N/A	N/A

PART FIVE

PLAN DETAILS

PART FIVE - PLAN DETAILS

Table 10: Benefit Formula and Eligibility

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Table 11: Post-Retirement Benefit Increases

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TABLE 10: BENEFIT FORMULA AND ELIGIBILITY

SYSTEM	SERVICE AND AGE ELIGIBILITY CRITERIA FOR FULL RETIREMENT	MINIMUM SERVICE FOR VESTING	HIGHEST AVERAGE COMPENSATION (HAC) PERIOD USED IN BENEFIT CALCULATION	SERVICE RETIREMENT BENEFIT MULTIPLIER*	SOCIAL SECURITY COVERAGE
PERS-DB	<p><u>Before 7/1/11</u> 5 yrs., age 60; or 30 yrs.; or age 65</p> <p><u>After 7/1/11</u> 5 yrs., age 65; or age 70</p>	5 yrs.	<p><u>Before 7/1/11</u> 3 yrs.</p> <p><u>After 7/1/11</u> 5 yrs.</p>	<p><u>Before 7/1/11</u> < 25 yrs.: 1.7857% 25 yrs. or more: 2%</p> <p><u>After 7/1/11</u> < 10 yrs.: 1.5% 10-29 yrs.: 1.78571% 30 yrs. or more: 2%</p>	Yes <i>(most members)</i>
TRS	<p><u>Tier 1 (Before 7/1/13)</u> 5 yrs., age 60; or 25 years</p> <p><u>Tier 2 (After 7/1/13)</u> 30 yrs., age 55; or 5 yrs., age 60</p>	5 yrs.	<p><u>Tier 1 (Before 7/1/13)</u> 3 yrs.</p> <p><u>Tier 2 (After 7/1/13)</u> 5 yrs.</p>	<p><u>Tier 1 (Before 7/1/13)</u> 1.67% per year</p> <p><u>Tier 2 (After 7/1/13)</u> 1.67% per year, then 1.85% per year if attained 30 yrs. service and age 60</p>	Yes <i>(most members)</i>
SRS	20 yrs.	5 yrs.	<p><u>Before 7/1/11</u> 3 yrs.</p> <p><u>After 7/1/11</u> 5 yrs.</p>	2.5% per year	Yes
MPORS	20 yrs.; or 5 yrs., age 50	5 yrs.	3 yrs. (final average, not highest average)	2.5% per year	No
GWPORS	20 yrs., age 50; or 5 yrs., age 55	5 yrs.	<p><u>Before 7/1/11</u> 3 yrs.</p> <p><u>After 7/1/11</u> 5 yrs.</p>	2.5% per year	Yes
FURS	20 yrs.; or 5 yrs., age 50	5 yrs.	3 yrs.	2.5% per year	No
HPORS	20 yrs.	<p><u>Before 7/1/13</u> 5 yrs.</p> <p><u>After 7/1/11</u> 10 yrs.</p>	3 yrs.	2.6% per year	No
JRS	5 yrs., age 60	5 yrs.	3 yrs.	<p>Up to 15 yrs.: 3.33%</p> <p>15 yrs. or more: 1.785% for each year more than 15 yrs.</p>	Yes
VFCA	<p>For full benefit: Age 55 and 20 years of service</p> <p>For reduced benefit: Age 60 and 10 years of service</p>	N/A	N/A	N/A	N/A

NOTE:

- *PERS-DB also offers a money purchase option: calculated by taking the greater of the service benefit multiplier equation listed or actuarial equivalent of 2x member's accumulated contributions plus interest set by Board (0.22%)

TABLE 11: POST-RETIREMENT BENEFIT INCREASES

SYSTEM	MINIMUM BENEFIT	GABA	WAITING PERIOD FOR GABA
PERS-DB	N/A	<u>Before 7/1/07</u> 3.0% <u>7/1/07 – 6/30/13</u> 1.5% <u>After 7/1/13</u> 1.5%*	1 yr.
TRS	N/A	<u>Tier 1 (Before 7/1/13)</u> 1.5% <u>Tier 2 (After 7/1/13)</u> Equal to or greater than 0.5%, but no more than 1.5%, depending on the status of the plan**	3 yrs.
SRS	N/A	<u>Before 7/1/07</u> 3.0% <u>After 7/1/07</u> 1.5%	1 yr.
MPORS	<u>Before 7/1/97</u> 1/2 of monthly salary of new officer	<u>After 7/1/97 or elected GABA</u> 3.0%	1 yr.
GWPORS	N/A	<u>Before 7/1/07</u> 3.0% <u>After 7/1/07</u> 1.5%	1 yr.
FURS	<u>10+ yrs. service & didn't elect GABA</u> 1/2 of monthly salary of new firefighter	<u>After 7/1/97 or elected GABA</u> 3.0%	1 yr.
HPORS	<u>Before 7/1/97 & didn't elect GABA</u> 2% of base salary of probationary officer	<u>Before 7/1/13</u> 3.0% <u>After 7/1/13</u> 1.5%	<u>Before 7/1/13</u> 1 yr. <u>After 7/1/13</u> 3 yrs.
JRS	<u>Before 7/1/97</u> Benefits increased same as salary of sitting judge	<u>After 7/1/97 or elected GABA</u> 3.0%	1 yr.
VFCA	N/A	N/A	N/A

NOTES:

- *Reduced 0.1% for every two years the system is below 90% funded. If the amortization period is 40 years or greater, the applicable GABA increase must be reduced to 0%.
- **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.

PART SIX

HISTORICAL DATA (FY17-22)

PART SIX - HISTORICAL DATA (FY17-22)

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Table 16: Actuarially Accrued Liability & Unfunded Actuarially Accrued Liability	Page 25

TABLE 12: FUNDED RATIO & AMORTIZATION RATE (FY17-22)

SYSTEM	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
FUNDED RATIO (ROUNDED)						
PERS-DB	72%	74%	74%	74%	76%	75%
TRS	71%	68%	69%	69%	71%	72%
SRS	81%	81%	82%	81%	83%	79%
MPORS	68%	68%	69%	71%	74%	71%
GWPORS	81%	83%	84%	84%	85%	83%
FURS	76%	78%	80%	82%	86%	81%
HPORS	64%	64%	65%	65%	67%	66%
JRS	167%	161%	161%	163%	177%	174%
VFCA	81%	83%	85%	87%	99%	91%
AMORTIZATION RATE						
PERS-DB	30 yrs.	38 yrs.	36 yrs.	35 yrs.	28 yrs.	32 yrs.
TRS	22 yrs.	31 yrs.	29 yrs.	29 yrs.	24 yrs.	25 yrs.
SRS	25 yrs.	21 yrs.	21 yrs.	21 yrs.	18 yrs.	33 yrs.
MPORS	16 yrs.	20 yrs.	18 yrs.	16 yrs.	15 yrs.	24 yrs.
GWPORS	70 yrs.	72 yrs.	53 yrs.	40 yrs.	35 yrs.	does not amortize
FURS	10 yrs.	10 yrs.	9 yrs.	8 yrs.	6 yrs.	12 yrs.
HPORS	37 yrs.	40 yrs.	42 yrs.	39 yrs.	26 yrs.	47 yrs.
JRS	0 yrs.	0 yrs.	0 yrs.	0 yrs.	0 yrs.	0 yrs.
VFCA	6 yrs.	5 yrs.	5 yrs.	4 yrs.	1 yr.	3 yrs.

TABLE 13: ACTIVE MEMBERS & RETIREES/BENEFIT RECIPIENTS (FY17-22)

SYSTEM	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
ACTIVE MEMBERS						
PERS-DB	29,395	28,646	28,908	29,039	29,028	28,508
TRS	18,917	19,267	19,686	19,046	19,161	19,975
SRS	1,415	1,429	1,454	1,505	1,495	1,481
MPORS	775	787	806	829	823	841
GWPORS	1,012	1,010	1,021	1,033	1,023	977
FURS	678	691	722	735	734	749
HPORS	238	233	232	233	244	252
JRS	56	55	58	58	57	59
VFCA	1,957	2,029	2,249	2,401	2,031	2,233
TOTAL BY FY	54,443	54,147	55,136	54,879	54,596	55,075
RETIREEES & BENEFIT RECIPIENTS						
PERS-DB	21,644	22,398	23,099	23,856	24,403	25,026
TRS	15,566	15,933	16,256	16,605	16,985	17,369
SRS	619	654	697	763	805	809
MPORS	761	780	818	870	910	908
GWPORS	273	309	342	384	420	442
FURS	624	643	651	678	692	691
HPORS	325	331	336	350	356	354
JRS	67	69	73	72	73	74
VFCA	1,437	1,473	1,487	1,523	1,531	1,523
TOTAL BY FY	41,316	42,590	43,759	45,101	46,175	47,196
RATIO OF ACTIVE MEMBERS TO RETIREES & BENEFIT RECIPIENTS						
PERS-DB	1.36	1.28	1.25	1.22	1.19	1.14
TRS	1.22	1.21	1.21	1.15	1.13	1.15
SRS	2.29	2.19	2.09	1.97	1.86	1.83
MPORS	1.02	1.01	0.99	0.95	0.90	0.93
GWPORS	3.71	3.27	2.99	2.69	2.44	2.21
FURS	1.09	1.07	1.11	1.08	1.06	1.08
HPORS	0.73	0.70	0.69	0.67	0.69	0.71
JRS	0.84	0.80	0.79	0.81	0.78	0.80
VFCA	1.36	1.38	1.51	1.58	1.33	1.47
TOTAL BY FY	1.32	1.27	1.26	1.22	1.18	1.17

TABLE 14: GENERAL FUND APPROPRIATIONS (FY17-22)

SYSTEM	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
GENERAL FUND APPROPRIATIONS						
PERS-DB	\$28,807,314	\$32,354,637	\$33,073,273	\$35,102,627	\$35,494,697	\$35,873,500
TRS	\$44,414,109	\$45,005,672	\$45,495,334	\$45,948,388	\$47,020,467	\$47,999,500
SRS	--	--	--	--	--	--
MPORS	\$13,960,572	\$15,857,660	\$15,981,505	\$16,636,173	\$17,387,351	\$18,122,207
GWPORS	--	--	--	--	--	--
FURS	\$14,438,412	\$16,156,512	\$16,605,850	\$17,721,053	\$18,437,718	\$19,436,204
HPORS	\$1,686,173	\$1,709,764	\$1,694,015	\$1,709,685	\$1,836,687	\$1,864,976
JRS	--	--	--	--	--	--
VFCA	\$2,064,561	\$2,212,113	\$2,370,449	\$2,486,769	\$2,591,791	\$2,851,974
TOTAL BY FY	\$105,371,140	\$113,296,357	\$115,220,425	\$119,604,695	\$122,768,711	\$126,148,361

NOTES:

- The chart only includes general fund contributions.
- Some of the systems receive multiple appropriations; the numbers listed are the sum totals of all contributions to the system.

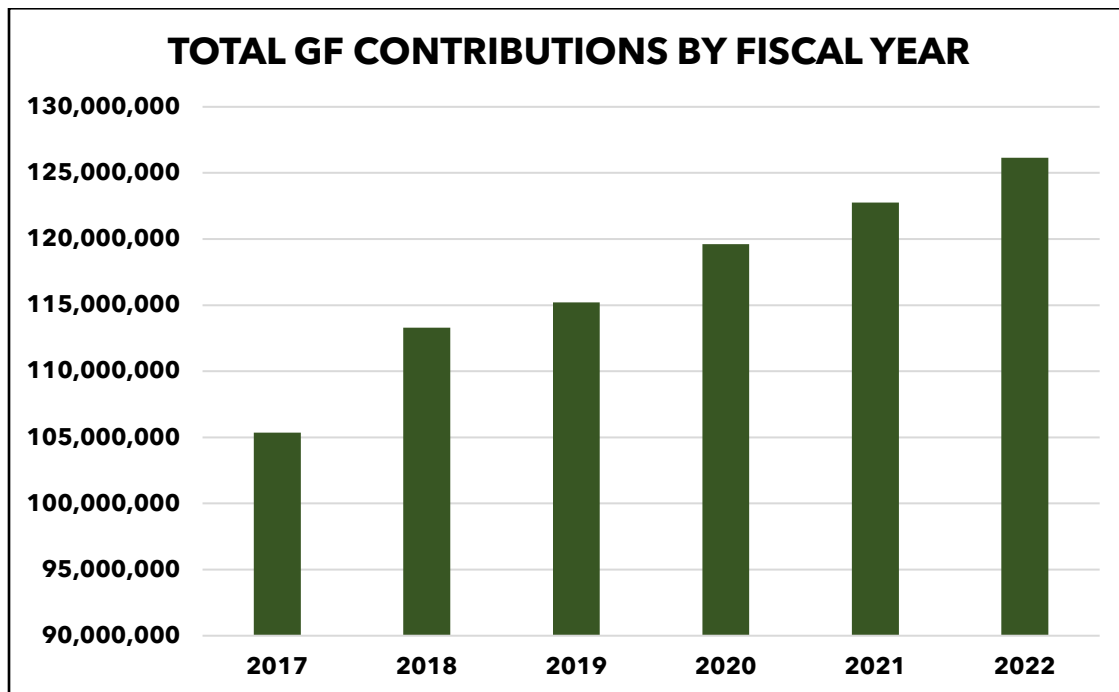


TABLE 15: ACTUARIAL VALUE OF ASSETS (FY17-22)

SYSTEM	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
ACTUARIAL VALUE OF ASSETS						
PERS-DB	\$5,514,026,586	\$5,705,235,727	\$5,903,190,959	\$6,099,398,162	\$6,514,976,330	\$6,770,813,514
TRS	\$3,973,519,000	\$4,094,393,000	\$4,219,515,000	\$4,344,045,000	\$4,616,374,000	\$4,799,597,000
SRS	\$332,169,329	\$353,904,349	\$377,386,901	\$400,719,971	\$438,035,779	\$469,548,805
MPORS	\$386,259,339	\$413,608,005	\$441,565,469	\$471,328,235	\$516,143,647	\$555,005,479
GWORS	\$176,310,592	\$190,849,036	\$206,503,838	\$221,948,510	\$247,392,056	\$266,067,351
FURS	\$397,632,831	\$429,094,690	\$463,085,081	\$499,180,209	\$555,517,311	\$603,173,541
HPORS	\$141,235,730	\$147,143,742	\$152,850,886	\$158,658,054	\$168,056,413	\$179,360,586
JRS	\$97,065,992	\$101,192,093	\$104,918,001	\$110,638,941	\$120,864,685	\$126,814,789
VFCA	\$36,954,642	\$38,321,273	\$40,008,887	\$41,716,780	\$45,130,521	\$48,077,791
TOTAL BY FY	\$11,055,174,041	\$11,473,741,915	\$11,909,025,022	\$12,347,633,862	\$13,222,490,742	\$13,818,458,856

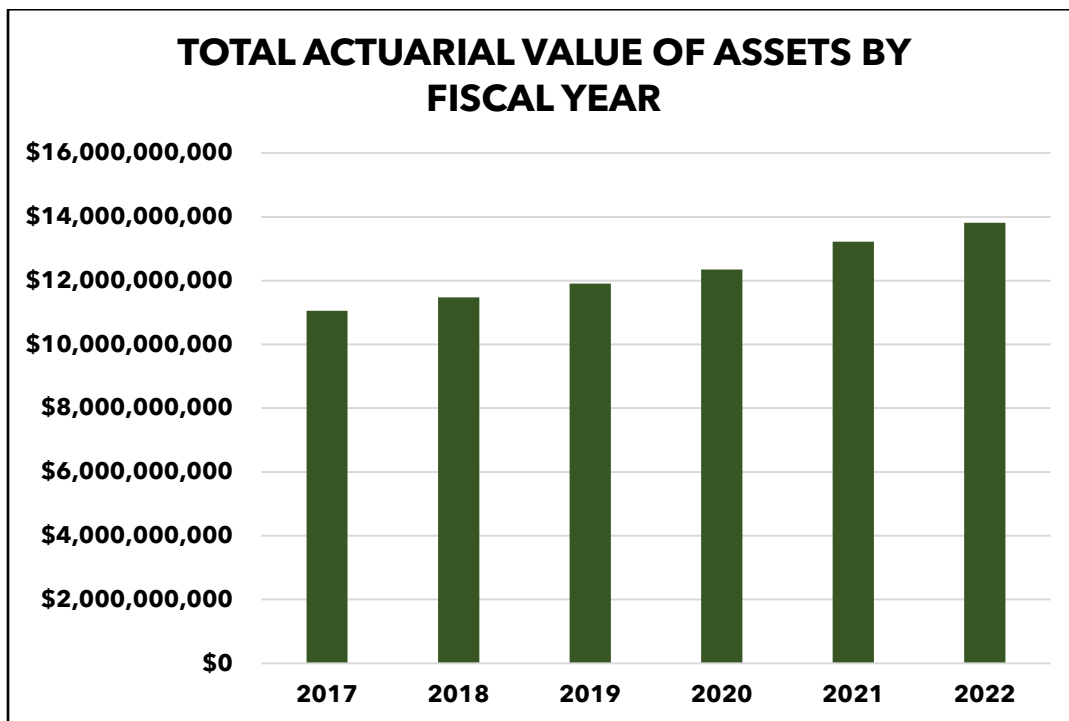
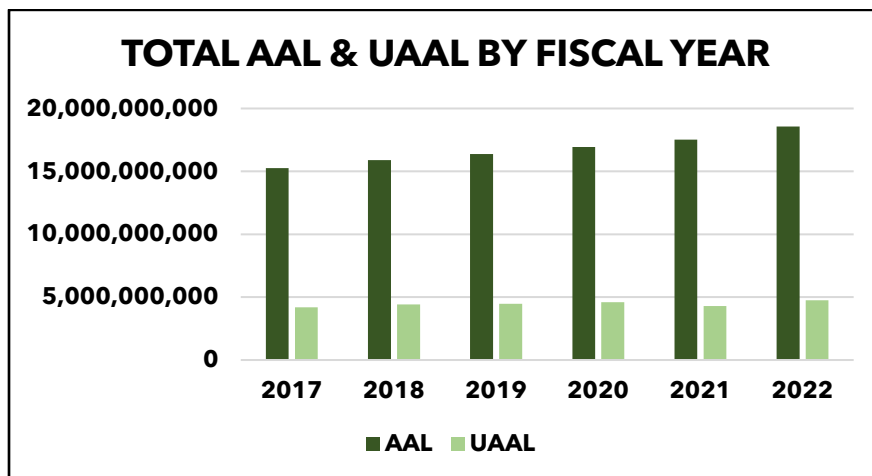


TABLE 16: ACTUARIALLY ACCRUED LIABILITY & UNFUNDED ACTUARIALLY ACCRUED LIABILITY (FY17-22)

SYSTEM	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
ACTUARIALLY ACCRUED LIABILITY (AAL)						
PERS-DB	\$7,578,384,779	\$7,730,084,077	\$7,957,037,808	\$8,234,002,983	\$8,534,628,711	\$9,026,784,090
TRS	\$5,636,842,000	\$6,004,434,000	\$6,148,556,000	\$6,310,005,000	\$6,463,247,000	\$6,691,275,000
SRS	\$411,386,604	\$436,715,156	\$462,697,753	\$493,241,768	\$525,238,823	\$597,118,496
MPORS	\$562,570,270	\$611,055,584	\$637,865,852	\$666,098,580	\$694,610,661	\$778,865,103
GWPORS	\$217,642,368	\$230,077,307	\$245,129,744	\$264,744,609	\$290,855,880	\$320,475,204
FURS	\$522,287,639	\$548,240,945	\$579,103,280	\$612,294,224	\$646,173,296	\$748,060,423
HPORS	\$219,469,619	\$229,821,775	\$236,805,027	\$245,915,150	\$252,081,574	\$273,240,808
JRS	\$58,103,656	\$62,740,689	\$65,075,477	\$67,934,098	\$68,460,454	\$72,922,865
VFCA	\$45,871,379	\$46,305,640	\$47,200,070	\$47,868,436	\$45,137,677	\$52,604,373
TOTAL BY FY	\$15,252,558,314	\$15,899,475,173	\$16,379,471,011	\$16,942,104,848	\$17,520,434,076	\$18,561,346,362
UNFUNDED ACTUARIALLY ACCRUED LIABILITY (UAAL)						
PERS-DB	\$2,064,358,193	\$2,024,848,350	\$2,053,846,849	\$2,134,604,821	\$2,019,652,381	\$2,255,970,576
TRS	\$1,663,323,000	\$1,910,042,000	\$1,929,041,000	\$1,965,960,000	\$1,846,873,000	\$1,891,678,000
SRS	\$79,217,275	\$82,810,807	\$85,310,852	\$92,521,797	\$87,203,044	\$127,569,691
MPORS	\$176,310,931	\$197,447,579	\$196,300,383	\$194,770,345	\$178,467,014	\$223,859,624
GWPORS	\$41,331,776	\$39,228,271	\$38,625,906	\$42,796,099	\$43,463,824	\$54,407,853
FURS	\$124,654,808	\$119,146,255	\$116,018,199	\$113,114,015	\$90,655,985	\$144,886,882
HPORS	\$78,233,889	\$82,678,033	\$83,954,141	\$87,257,096	\$84,025,161	\$93,880,222
JRS	(\$38,962,336)	(\$38,451,404)	(\$39,842,524)	(\$42,704,098)	(\$52,404,231)	(\$53,891,924)
VFCA	\$8,916,737	\$7,984,367	\$7,191,183	\$6,151,656	\$7,156	\$4,526,582
TOTAL BY FY	\$4,197,384,273	\$4,425,734,258	\$4,470,445,989	\$4,594,471,731	\$4,297,943,334	\$4,742,887,506



PART SEVEN

OTHER STATEWIDE RETIREMENT SYSTEMS

PART SEVEN - OTHER STATEWIDE RETIREMENT SYSTEMS

Table 17: PERS Defined Contribution (DC) Plan	Page 27
Table 18: Deferred Compensation (457) Plan	Page 28
Table 19: Montana University System Retirement Plan	Page 29

TABLE 17: PERS DEFINED CONTRIBUTION (DC) PLAN

MEMBERSHIP	New hires have 12 months to make a one-time, irrevocable election between DB and DC plans – default plan is DB plan.
CONTRIBUTING MEMBERS	5,085
EMPLOYEE/MEMBER CONTRIBUTIONS FY22	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 without supplemental employee and employer contributions)
EMPLOYER AND STATE GENERAL FUND CONTRIBUTIONS FY22	8.97% of salary (reduced to 6.9% when PERS-DB amortization period is less than 25 years) Contributions allocated as follows: <ul style="list-style-type: none"> • 8.63% to member accounts • 0.04% to educational fund • 0.30% to disability trust fund
TOTAL MEMBER CONTRIBUTIONS	16.63%
TOTAL AMOUNT INVESTED	\$362 Million
AVERAGE ACCOUNT BALANCE	\$69,085
INVESTMENT CHOICES	20 funds (3 main categories) evaluated quarterly. Options range from aggressive to conservative and include mutual funds, bond funds, and target date funds. Allocations: <ul style="list-style-type: none"> • 31.11% Target Date Funds • 36.61% Passive • 32.22% Active
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 59.5.
DISABILITY BENEFIT	A defined disability benefit based on a $1/56 \times \text{HAC} \times \text{years of service}$ formula, same as provided in the PERS-DB plan.
DEATH/SURVIVORSHIP BENEFIT	Member's account balance
PLAN ADMINISTRATION	<ul style="list-style-type: none"> • Public Employees' Retirement Board – Plan's Board of Trustees • Empower Retirement Services – Plan's Record Keeper

TABLE 18: DEFERRED COMPENSATION (457) PLAN

MEMBERSHIP	Voluntary supplemental retirement savings plan available to all employees of the State, Montana University System, and contracting political subdivisions.
CONTRIBUTING MEMBERS	10,050
EMPLOYEE/MEMBER CONTRIBUTIONS	Voluntary, pre-tax deferral or designated ROTH deferral
EMPLOYER CONTRIBUTIONS	None, unless specified in an employer contract.
TOTAL AMOUNT INVESTED	\$581 Million
NUMBER OF INVESTMENT CHOICES	21 (3 main categories) evaluated quarterly. Options range from aggressive to conservative.
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	<ul style="list-style-type: none"> • Public Employees' Retirement Board – Plan's Board of Trustees • Empower Retirement Services – Plan's Record Keeper

TABLE 19: MONTANA UNIVERSITY SYSTEM RETIREMENT PLAN

MEMBERSHIP	<p>All administrative, scientific, and instructional staff of the University System and classified staff that elected MUS-RP rather than a PERS plan.</p> <ul style="list-style-type: none"> • Contributing (Active): 4,139 • Non-Contributing (Inactive, Retired, etc.): 6,882 • Avg. Age: 53.11 yrs. • Avg. Yrs. of Membership: 8.68 yrs. 												
RETIREMENT ELIGIBILITY	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.												
BENEFIT	<p>A 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> <ul style="list-style-type: none"> • Avg. account balance: \$93,092.70 												
DEATH AND SURVIVOR BENEFITS	The full account value in the member’s account is payable to the beneficiary. If the member has annuity investments, 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.												
TOTAL AMOUNT INVESTED	\$1.06 Billion												
INVESTMENT CHOICES	34 choices (12 target date bands) – 6 asset classes												
NUMBER OF INVESTMENT CHOICES	<p>34 funds (6 categories) evaluated quarterly. Options range from aggressive to conservative and include mutual funds, bond funds, annuity investments, and target date funds.</p> <p style="text-align: center;"><u>Allocations (Totals)</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr><td>34.97%</td><td>Equities</td></tr> <tr><td>7.35%</td><td>Fixed Income</td></tr> <tr><td>20.11%</td><td>Guaranteed</td></tr> <tr><td>2.07%</td><td>Money Market</td></tr> <tr><td>31.87%</td><td>Multi-Asset</td></tr> <tr><td>3.64%</td><td>Other (Real Estate)</td></tr> </table>	34.97%	Equities	7.35%	Fixed Income	20.11%	Guaranteed	2.07%	Money Market	31.87%	Multi-Asset	3.64%	Other (Real Estate)
34.97%	Equities												
7.35%	Fixed Income												
20.11%	Guaranteed												
2.07%	Money Market												
31.87%	Multi-Asset												
3.64%	Other (Real Estate)												
TOTAL MUS-RP PAYROLL COVERED	\$295.8 Million												
CONTRIBUTIONS TO MEMBER ACCOUNTS AS A PERCENTAGE OF PAYROLL	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Contract and Professional Staff:</td> <td style="width: 50%;">Classified Staff:</td> </tr> <tr> <td>Employer: 5.956%</td> <td>Employer: 8.87%</td> </tr> <tr> <td>Employee: 7.044%</td> <td>Employee: 7.90%</td> </tr> <tr> <td>TOTAL: 13.000%</td> <td>TOTAL: 16.77%</td> </tr> </table>	Contract and Professional Staff:	Classified Staff:	Employer: 5.956%	Employer: 8.87%	Employee: 7.044%	Employee: 7.90%	TOTAL: 13.000%	TOTAL: 16.77%				
Contract and Professional Staff:	Classified Staff:												
Employer: 5.956%	Employer: 8.87%												
Employee: 7.044%	Employee: 7.90%												
TOTAL: 13.000%	TOTAL: 16.77%												
STATE GENERAL FUND CONTRIBUTION FY22	\$1.8 Million												
SUPPLEMENTAL EMPLOYER CONTRIBUTIONS TO TRS FOR UNFUNDED LIABILITY	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Contract and Professional Staff:</td> <td style="width: 50%;">Classified Staff:</td> </tr> <tr> <td>to TRS for unfunded liability: 4.72%</td> <td>to PERS for education: 0.04%</td> </tr> </table>	Contract and Professional Staff:	Classified Staff:	to TRS for unfunded liability: 4.72%	to PERS for education: 0.04%								
Contract and Professional Staff:	Classified Staff:												
to TRS for unfunded liability: 4.72%	to PERS for education: 0.04%												
INCREASE REQUIRED IN SUPPLEMENTAL CONTRIBUTION RATE TO AMORTIZE UNFUNDED LIABILITY BY 2033 AS REQUIRED UNDER 19-20-621, MCA	<p>8.81% increase needed to the current 4.72% to reach a total supplemental of 13.53%</p> <p><u>Note:</u> As of June 30, 2022, 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 MUS and not subsidized by the TRS pension fund. This would not cover GABA.</p>												
PLAN ADMINISTRATION	Board of Regents & Office of the Commissioner of Higher Education												

PART EIGHT

ADDITIONAL RESOURCES

PART EIGHT - ADDITIONAL RESOURCES

Pension Acronyms	Page 31
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Individual Plan Handbooks (<i>links</i>)	Page 36
MCA Chapters - Title 19 (<i>links</i>)	Page 36

PENSION ACRONYMS

- **457**: Deferred Compensation (457) Plan
- **AAL**: Actuarially Accrued Liability
- **ARC**: Annual Required Contribution
- **ASOP**: Actuarial Standard of Practice
- **COLA**: Cost of Living Adjustment
- **ERISA**: Employee Retirement Income Security Act of 1974
- **FAC**: Final Average Compensation
- **FURS**: Firefighters' Unified Retirement System
- **GABA**: Guaranteed Annual Benefit Adjustment
- **GASB**: Governmental Accounting Standards Board
- **GWPORS**: Game Wardens' and Peace Officers' Retirement System
- **HAC**: Highest Average Compensation
- **HPORS**: Highway Patrol Officers' Retirement System
- **IRA**: Individual Retirement Account
- **IRC**: Internal Revenue Code
- **JRS**: Judges' Retirement System
- **MBOI/BOI**: Montana Board of Investments or Board of Investments
- **MPERA**: Montana Public Employee Retirement Administration
- **MPORS**: Municipal Police Officers' Retirement System
- **MUS-RP**: Montana University System Retirement Program
- **PERS**: Public Employees' Retirement System
- **PERS-DB**: PERS Defined Benefit Retirement Plan
- **PERS-DC**: PERS Defined Contribution Retirement Plan
- **PER Board/PERB**: Public Employees' Retirement Board
- **SAVA**: State Administration and Veterans' Affairs Interim Committee
- **SRS**: Sheriffs' Retirement System
- **TRS**: Teachers' Retirement System
- **UAAL**: Unfunded Actuarially Accrued Liability
- **VFCA**: Volunteer Firefighters' Compensation Act

PENSION TERMS

- **401(k) Plan:** A defined contribution plan governed by section 401(k) of the Internal Revenue Code (IRC) that is offered to employees in the private sector. Employees voluntarily participate on an individual basis. A 401(k) allows an employee to set aside tax-deferred income for retirement purposes. In some 401(k) plans, the employer will match an employee's contributions dollar-for-dollar.
- **403(b) Plan:** A retirement plan governed by section 403(b) of the IRC that is similar but not identical to a 401(k) plan and is offered by nonprofit organizations, such as schools, universities, and some charitable organizations.
- **457 Plan:** A tax-exempt deferred compensation program governed by section 457 of the IRC that is made available to employees of state and federal governments and agencies. A 457 plan is similar to a 401(k) plan, except there are never employer matching contributions and the IRS does not consider it a qualified retirement plan.
- **Accrued Benefit:** A retirement, pension, or disability benefit that an employee has earned based on years of service. Accrued benefits are often calculated in relation to the employee's salary and years of service.
- **Accumulated Contributions:** The sum of all the regular and any additional contributions made by a member in a defined benefit plan, together with the regular interest on the contributions.
- **Active Member:** A member who is a paid employee making the required contributions and is properly reported for the most current reporting period.
- **Actuarial Accrued Liabilities (AAL):** The portion of liabilities that exceed of the present value of all benefits payable under a defined benefit retirement plan compared to the present value of future normal costs.
- **Actuarial Assumption:** An assumption applied by an actuary for the purposes of estimating benefit costs. Assumptions are demographic and economic and include variables such as life expectancy, return on investments, interest rates, and compensation.
- **Actuarial Cost:** The cost determined by an actuarial analysis to represent the present value of benefits.
- **Actuarial Valuation:** An analysis conducted by an actuary that helps estimate future costs or liabilities using economic and demographic assumptions. The assumptions are based on professional actuarial standards and involve a mix of statistical studies and experienced judgment.
- **Actuary:** An accredited professional with expertise in applying statistics, mathematics, and financial theory to quantify risk and uncertainty to determine liabilities and costs.
- **Additional Contributions:** A member's payments to purchase various types of optional service credit.
- **Annual Required Contribution (ARC):** Annual Required Contribution rate necessary to amortize unfunded liabilities in a DB plan over the number of years set by the retirement board's amortization policy (e.g., 30 years) as determined by the system's actuary.
- **Annuity:** In the case of a defined benefit plan, equal and fixed payments for life that are the actuarial equivalent of a lump-sum payment under a retirement plan and as such are not benefits paid by a retirement plan and are not subject to periodic or one-time increases. In the case of the defined contribution plan, an annuity is a payment of a fixed sum of money at regular intervals, which may or

may not be for life.

- **Amortization Period**: The amount of time required to pay off a retirement system's unfunded actuarial accrued liabilities, or UAAL, calculated by the retirement system's actuary based on projected contributions and investment earnings.
- **Benefit Recipient**: A retired member, a joint annuitant, or a beneficiary who is receiving a retirement allowance.
- **Closed Amortization**: Under this approach, the unfunded liability is amortized over a set number of years (ex: 30 years). Each year the unfunded liability is re-determined, reflecting any gains and losses that have occurred, and amortized in 1 fewer year (ex: 29 years, 28 years, etc.). Every year the amortization period gets shorter, until it reaches one year, at which point the unfunded liability has been paid off and the plan is fully funded.
- **Cost of Living Adjustment (COLA)**: Increases in a retirement benefit amount, usually a percentage and based on national economic data, e.g., consumer price index.
- **Deferred Compensation**: An arrangement, subject to IRC conditions and requirements, in which a portion of an employee's income is paid out at a date after which that income is actually earned. The primary benefit of most deferred compensation is that any taxes due on the income are deferred until funds are withdrawn under the arrangement. A 457 plan is a deferred compensation plan.
- **Defined Benefit Plan (DB)**: A pension plan in which a retired employee is entitled to receive upon retirement a regular, periodic, specific amount based on the retiree's salary history and years of service.
- **Defined Contribution Plan (DC)**: A retirement plan in which the employee is required to or elects to contribute some amount of salary into an individual account over which the employee has some control for investing the assets and options when making withdrawals at retirement.
- **Designated Beneficiary**: the person a member names to receive any survivorship benefits or lump-sum payments upon the member's death. Designated beneficiaries are either primary or contingent.
- **Direct Rollover**: A distribution from a qualified pension plan, 401(k) plan, 403(b) plan, and so forth, that is remitted directly to the trustee, custodian, or issuer of the receiving retirement plan or IRA and is reported to the IRS as a rollover.
- **Disability**: Total physical or mental incapacity of a member to do the essential functions of the member's job even with reasonable accommodations required by the ADA, for a permanent or extended and uncertain duration.
- **Early Retirement**: A retirement plan provision that allows an employee to retire before the normal retirement age or required years of service for a full retirement.
- **Employee**: A person employed in any capacity by a PERS employer who pays the person's salary.
- **Employee Retirement Income Security Act (ERISA)**: The federal law enacted in 1974 that established legal guidelines for private pension plan administration and investment practices. Public retirement plans generally are not subject to ERISA.
- **Employer**: The state, its university system, or political subdivisions that contract with the Board to cover their employees under PERS.

- **Experience Study:** A regular study of the economic and demographic experience of a retirement system, typically administered every five years. The purpose is to assess the reasonability of the actuarial assumptions of a retirement system in order to make judgments about future experience and assumptions.
- **Fiduciary:** A person or institution legally responsible for the management, investment and distribution of a fund. The trustees and administrators who are responsible for the oversight of employee benefit trust funds are considered fiduciaries. Fiduciaries are any person who (1) exercises any discretionary authority or control over the management of a plan or the management or disposition of its assets; (2) renders investment advice for a fee or other compensation with respect to the funds or property of a plan or has the authority to do so; or (3) has any discretionary authority or responsibility in the administration of a plan.
- **Funded Ratio:** The value of a pension plan's assets in proportion to the pension liability. When a plan is 100% funded, it means current assets are sufficient to pay 100% of benefits due now, as well as the benefits that active and inactive members have accrued to date.
- **Government Accounting Standards Board (GASB):** An independent, private-sector organization based in Norwalk, Connecticut, that establishes accounting and financial reporting standards for U.S. state and local governments that follow generally accepted accounting principles.
- **Guaranteed Annual Benefit Adjustment (GABA):** An annual increase in the prior year's benefit amount, usually as a percentage of the benefit, similar to a cost-of-living adjustment.
- **Highest Average Compensation (HAC):** A member's highest average monthly compensation during a set period of consecutive months of membership service.
- **Inactive Member:** A member who terminates service and does not retire or take a refund of the member's accumulated contributions.
- **Individual Retirement Account (IRA):** A tax-deferred retirement account for an individual that permits the individual to set aside money each year, with earnings tax-deferred until withdrawals begin.
- **Internal Revenue Code (IRC):** Title 26 of the United States Code. It is also known as the federal tax code.
- **Layered Amortization:** This approach is considered a hybrid of open and closed amortization approaches. Similar to closed amortization, the initial unfunded liability is amortized over a set amount of time (ex: 30 years). Any gains or losses that arise in future years will be amortized over new amortization periods, which is similar to the open amortization approach. With each valuation, a new closed layer gets added to the amortization schedule. The amortization of the original unfunded liability and gains and losses from prior years remain unchanged, providing the expectation that the plan will become fully funded over the original amortization period if there are no significant gains or losses.
- **Member:** Any person with contributions and service on account with the PERS. Persons receiving retirement benefits based on previous service credit are also members.
- **Money Purchase Plan:** A type of defined contribution retirement plan in which the annual contribution amount is in proportion to the employee's wages and is mandatory every year.
- **Normal Cost:** An amount calculated under an actuarial cost method that is the estimated cost of the accruing benefits for members of a defined benefit retirement plan. It is determined for each valuation period. Normal cost does not include any portion of the supplemental costs of a retirement plan.

- **Normal Retirement Age:** The age at which a member is eligible to immediately receive a retirement benefit based on the member's age, length of service, or both, as specified under the member's retirement system, without disability and without an actuarial or similar reduction in the benefit.
- **Open Amortization:** Under this approach, the unfunded liability is amortized over a set amount of years (ex: 30 years). Each year the unfunded liability is re-calculated and amortized over a new set amount of years (ex: 30 years). This is the approach used in Montana with a 30-year amortization period.
- **Pension:** Steady income given to a person as the result of service (e.g., employee, military) that begins when a specific event (e.g., disability, retirement) occurs. Pensions are typically paid monthly and based on factors such as years of service and prior compensation. The payment may be made by a government, employer, pension fund, or life insurance company.
- **Portability:** The ability of an employee to retain benefits, such as in a pension plan or insurance coverage, when switching employers.
- **Qualified Plan:** A plan that meets the applicable requirements of the Internal Revenue Code and, if applicable, the Employee Retirement Income Security Act. A qualified plan is eligible for favorable tax treatment.
- **Roth IRA:** A type of IRA established under the Taxpayer Relief Act of 1997 that allows taxpayers, subject to certain income limits, to save for retirement while allowing the savings to grow tax-free. Taxes are paid on contributions, but withdrawals, subject to certain rules, are not taxed.
- **Smoothing:** The process of amortizing investment gains and losses over a period of time to help reduce volatility in contribution rates.
- **Stress Testing:** The process of evaluating how pension systems would respond to a variety of potential scenarios, allowing states to gauge the effects of hypothetical adverse market conditions on their retirement systems.
- **Tax Deferred:** The payment of taxes in the future on income earned in the current period.
- **Termination or Termination of Service:** Means the member has left the employment relationship for at least 30 days, has no written or verbal agreement to return, and has been paid all compensation due, including but not limited to payment of accrued annual and sick leave. Upon termination, the member will cease to accrue benefits attributable to that employment.
- **Unfunded Actuarial Accrued Liabilities (UAAL):** The excess of a defined benefit retirement plan's actuarial liabilities at any given point in time over the value of its cash and investments on that same date.
- **Vested:** The status of a plan member who meets the minimum membership service requirement of the system or plan to which the member belongs and who is thus eligible to receive a benefit.

FY 2022 PENSION SYSTEM ACTUARIAL VALUATION REPORTS

- **PERS-DB:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/FYE2022MTPERSFINAL.pdf
- **TRS:** https://trs.mt.gov/miscellaneous/PdfFiles/Information/ActuarialValuations/2022_TRSvaluation.pdf
- **SRS:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/FYE2022MTSRSFINAL.pdf
- **MPORS:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/2022MTMPORSFINAL.pdf
- **GWPORS:**
https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/FYE2022MTGWPORSFINAL.pdf
- **FURS:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/FYE2022MTFURSFINAL.pdf
- **HPORS:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/2022MTHPORSFINAL.pdf
- **JRS:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/FYE2022MTJRSFINAL.pdf
- **VFCA:** https://mpera.mt.gov/docs/actuarial_info/2022/Valuations2022/2022MTVFCAFINAL.pdf

INDIVIDUAL PLAN HANDBOOKS

- **PERS-DB:** <https://mpera.mt.gov/docs/Handbooks/PERS.pdf>
- **TRS:** https://trs.mt.gov/miscellaneous/PdfFiles/Members/2016_TRS_Active_Member_Handbook.pdf
- **SRS:** <https://mpera.mt.gov/docs/Handbooks/SRS.pdf>
- **MPORS:** <https://mpera.mt.gov/docs/Handbooks/MPORS.pdf>
- **GWPORS:** <https://mpera.mt.gov/docs/Handbooks/GWPORS.pdf>
- **FURS:** <https://mpera.mt.gov/docs/Handbooks/FURS.pdf>
- **HPORS:** <https://mpera.mt.gov/docs/Handbooks/HPORS.pdf>
- **JRS:** <https://mpera.mt.gov/docs/Handbooks/JRS.pdf>
- **VFCA:** <https://mpera.mt.gov/docs/Handbooks/VFCA.pdf>
- **PERS-DC:** <https://mpera.mt.gov/members/PERSdefinedcontribution>
- **Deferred Compensation (457):** <https://mpera.mt.gov/docs/PlanDocuments/457PlanDocument.pdf>
- **MUS-RP:** <https://choices.mus.edu/MUSRPlan.html>

MCA CHAPTERS - TITLE 19

- **PERS-DB - Chapter 3:** https://leg.mt.gov/bills/mca/title_0190/chapter_0030/parts_index.html
- **TRS - Chapter 20:** https://leg.mt.gov/bills/mca/title_0190/chapter_0200/parts_index.html
- **SRS - Chapter 7:** https://leg.mt.gov/bills/mca/title_0190/chapter_0070/parts_index.html
- **MPORS - Chapter 9:** https://leg.mt.gov/bills/mca/title_0190/chapter_0090/parts_index.html
- **GWPORS - Chapter 8:** https://leg.mt.gov/bills/mca/title_0190/chapter_0080/parts_index.html
- **FURS - Chapter 13:** https://leg.mt.gov/bills/mca/title_0190/chapter_0130/parts_index.html
- **HPORS - Chapter 6:** https://leg.mt.gov/bills/mca/title_0190/chapter_0060/parts_index.html
- **JRS - Chapter 5:** https://leg.mt.gov/bills/mca/title_0190/chapter_0050/parts_index.html
- **VFCA - Chapter 17:** https://leg.mt.gov/bills/mca/title_0190/chapter_0170/parts_index.html
- **PERS-DC - Chapter 3, Part 21:**
https://leg.mt.gov/bills/mca/title_0190/chapter_0030/part_0210/sections_index.html
- **Deferred Compensation - Chapter 50:**
https://leg.mt.gov/bills/mca/title_0190/chapter_0500/parts_index.html
- **MUS-RP - Chapter 21:** https://leg.mt.gov/bills/mca/title_0190/chapter_0210/parts_index.html

PART NINE

SOURCES

PART NINE -SOURCES

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PART ONE - SUMMARY (PG. 3-4)

SUMMARY OF VALUATION RESULTS AS OF JUNE 30, 2022 (NEW VERSION)

- MPERA & TRS - First summary chart in each actuarial valuation report (pg. 1 in each report)

PART TWO - FY22 DEMOGRAPHIC DATA (PG. 5-7)

TABLE 1: ACTIVE MEMBER DATA

- MPERA Systems - Table E-1 of each actuarial valuation report:
 - PERS-DB - pg. 61
 - SRS - pg. 58
 - MPORS - pg. 58
 - GWPORS - pg. 55
 - FURS - pg. 55
 - HPORS - pg. 58
 - JRS - pg. 50
 - VFCA - pg. 44
- TRS - Table D-1 (pg. 61) in actuarial valuation report
- Ratio of active employees to retirees & beneficiaries provided by the Board of Investments

TABLE 2: RETIREE AND BENEFIT RECIPIENT DATA

- MPERA Systems -Table 2 and Table E-2 in each actuarial valuation report:
 - PERS-DB - pg. 14 and pg. 62
 - SRS - pg. 12 and pg. 59
 - MPORS - pg. 11 and pg. 59
 - GWPORS - pg. 11 and pg. 56
 - FURS - pg. 11 and pg. 56
 - HPORS - pg. 12 and pg. 59
 - JRS - pg. 10 and pg. 51
 - VFCA - pg. 10 and pg. 45
- TRS -Table 2 (pg. 14) and Table D-2 (pg. 62) in actuarial valuation report
- "Percent of Income Replacement Provided under the Benefit Formula if Member Attains Full Service Retirement" provided by MPERA & TRS

PART THREE - FUNDING & INVESTMENT DATA (PG. 8-13)

TABLE 3: ACTUARIAL FUNDING DATA

- MPERA Systems - Summary Table (pg. 1) in each actuarial valuation report
- TRS - Summary table (pg.1) and Table D-3 (pg. 63) in actuarial valuation report
- "Projected ARC Shortfall as Dollar Amount" calculated by actuary
- Total contributions provided by the Board of Investments

TABLE 4: INVESTMENTS AND RETURNS

- All information provided by the Board of Investments

TABLE 5: CASH FLOW

- All information provided by the Board of Investments

TABLE 6: INVESTMENT EXPENSES

- All information provided by the Board of Investments

TABLE 7: SENSITIVITY TO LOWER INVESTMENT RETURN ASSUMPTIONS

- All Systems - "Sensitivity to Future Experience" charts in each actuarial valuation report:
 - PERS-DB - pg. 7
 - TRS - pg. 7
 - SRS - pg. 5
 - MPORS - pg. 4
 - GWPORS - pg. 5
 - FURS - pg. 4
 - HPORS - pg. 5
 - JRS - pg. 4
 - VFCA - pg. 5
- "Contribution Increase Needed to Maintain Current Amortization (Percentage)" calculated by actuary

PART FOUR - CONTRIBUTIONS (PG. 14-16)

TABLE 8: EMPLOYER, EMPLOYEE, AND STATE CONTRIBUTIONS

- MPERA Systems - Table E-3 in each actuarial valuation report:
 - PERS-DB -pg. 63
 - SRS -pg. 60
 - MPORS -pg. 60
 - GWPORS -pg. 57
 - FURS -pg. 57
 - HPORS - pg. 60
 - JRS - pg. 52
 - VFCA - pg. 46
- TRS - Table D-3 (pg. 63) in actuarial valuation report
- SB 175/JRS changes: <https://leg.mt.gov/bills/2021/billpdf/SB0175.pdf>
- State General Fund contribution amounts provided by LFD
- All Systems - MCA references:

SYSTEM	EMPLOYER CONTRIBUTION	MEMBER CONTRIBUTION	GENERAL FUND CONTRIBUTION(S)
PERS-DB	19-3-316, MCA 19-3-319, MCA	19-3-315, MCA	19-3-319, MCA 19-3-320, MCA
TRS	19-20-605, MCA 19-20-609, MCA	19-20-602, MCA 19-20-608, MCA	19-20-604, MCA 19-20-607, MCA
SRS	19-7-404, MCA	19-7-403, MCA	N/A
MPORS	19-9-703, MCA	19-9-710, MCA	19-9-702, MCA
GWPORS	19-8-504, MCA	19-8-502, MCA	N/A
FURS	19-13-605, MCA	19-13-601, MCA	19-13-604, MCA
HPORS	19-6-404, MCA	19-6-402, MCA	19-6-404, MCA 19-6-410, MCA
JRS	19-5-404, MCA	19-5-402, MCA	N/A
VFCA	N/A	N/A	19-17-301, MCA

TABLE 9: EMPLOYER DETAILS AND COVERED PAYROLL

- All Systems - Summary Table (pg. 1) in each actuarial valuation report & 2020 Green Sheets: Table 6
- Number of participating employers and payroll by type of employer information provided by MPERA & TRS

PART FIVE - PLAN DETAILS (PG. 17-19)

TABLE 10: BENEFIT FORMULA AND ELIGIBILITY

- All Systems - MCA references and handbook pages:

SYSTEM	SERVICE AND AGE ELIGIBILITY CRITERIA	VESTING	HIGHEST AVERAGE COMPENSATION	SERVICE RETIREMENT MULTIPLIER
PERS-DB	19-3-901, MCA Handbook pg. 19	19-3-401, MCA Handbook pg. 13	19-3-108, MCA Handbook pg. 19	19-3-904, MCA Handbook pg. 19
TRS	19-20-801, MCA Handbook pg. 34	19-20-101, MCA Handbook pg. 27	19-20-805, MCA Handbook pg. 39	19-20-804, MCA Handbook pg. 34
SRS	19-7-501, MCA Handbook pg. 14	19-7-301, MCA Handbook pg. 10	19-7-101, MCA Handbook pg. 15	19-7-503, MCA Handbook pg. 15
MPORS	19-9-801, MCA Handbook pg. 16	19-9-301, MCA Handbook pg. 10	19-9-104, MCA Handbook pg. 16	19-9-804, MCA Handbook pg. 16
GWPORS	19-8-601, MCA Handbook pg. 16	19-8-301, MCA Handbook pg. 10	19-8-101, MCA Handbook pg. 16	19-8-603, MCA Handbook pg. 16
FURS	19-13-701, MCA Handbook pg. 15	19-13-301, MCA Handbook pg. 10	19-13-104, MCA Handbook pg. 15	19-13-704, MCA Handbook pg. 15
HPORS	19-6-501, MCA Handbook pg. 15	19-6-301, MCA Handbook pg. 8	19-6-101, MCA Handbook pg. 15	19-6-502, MCA Handbook pg. 15
JRS	19-5-501, MCA Handbook pg. 15	19-5-301, MCA Handbook pg. 9	19-5-101, MCA Handbook pg. 15	19-5-502, MCA Handbook pg. 15
VFCA	19-17-401 Handbook pg. 9	N/A	N/A	19-17-404 Handbook pg. 11

TABLE 11: POST-RETIREMENT BENEFIT INCREASES

- All Systems - MCA references and handbook pages:

SYSTEM	MCA REFERENCE	PLAN HANDBOOK
PERS-DB	19-3-1605, MCA	Handbook pg. 32
TRS	19-20-719, MCA	Handbook pg. 41
SRS	19-7-711, MCA	Handbook pg. 24
MPORS	19-9-1007, MCA 19-9-1009, MCA	Handbook pg. 22
GWPORS	19-8-1105, MCA	Handbook pg. 24
FURS	19-13-1007, MCA 19-13-1010, MCA	Handbook pg. 18
HPORS	19-6-710, MCA 19-6-712, MCA	Handbook pg. 22
JRS	19-5-901, MCA	Handbook pg. 23
VFCA	N/A	N/A

PART SIX - HISTORICAL DATA (PG. 20-25)

TABLE 12: FUNDED RATIO AND AMORTIZATION RATE (FY17-22)

- All Systems - Summary Table in each actuarial valuation
 - MPERA: <https://mpera.mt.gov/about/annualreports1/annualreports>
 - TRS: <https://trs.mt.gov/trsinfo/newsannualreports#valuation>

TABLE 13: ACTIVE MEMBERS & RETIREES/BENEFIT RECIPIENTS (FY17-22)

- All Systems - Summary Table in each actuarial valuation
 - MPERA: <https://mpera.mt.gov/about/annualreports1/annualreports>
 - TRS: <https://trs.mt.gov/trsinfo/newsannualreports#valuation>

TABLE 14: GENERAL FUND APPROPRIATIONS (FY17-22)

- All information provided by the Legislative Fiscal Division

TABLE 15: ACTUARIAL VALUE OF ASSETS (FY17-22)

- All Systems - Summary Table in each actuarial valuation
 - MPERA: <https://mpera.mt.gov/about/annualreports1/annualreports>
 - TRS: <https://trs.mt.gov/trsinfo/newsannualreports#valuation>

TABLE 16: ACTUARIALLY ACCRUED LIABILITY & UNFUNDED ACTUARIALLY ACCRUED LIABILITY (FY17-22)

- All Systems - Summary Table in each actuarial valuation
 - MPERA: <https://mpera.mt.gov/about/annualreports1/annualreports>
 - TRS: <https://trs.mt.gov/trsinfo/newsannualreports#valuation>

PART SEVEN - OTHER STATEWIDE RETIREMENT SYSTEMS (PG. 26-29)

TABLE 17: PERS DEFINED CONTRIBUTION (DC) PLAN

- All information provided by MPERA

TABLE 18: DEFERRED COMP (457) PLAN

- All information provided by MPERA

TABLE 19: MONTANA UNIVERSITY SYSTEM RETIREMENT PLAN (MUS-RP)

- All information provided by the Office of the Commissioner of Higher Education
- Supplemental contribution increase information provided by TRS
- State general fund contribution amount provided by LFD