

## Summary of FY 2014 Actuarial Valuations: FINAL

Compiled by Sheri Scurr, Legislative Services Division  
From TRS Board and PER Board June 30, 2014, Actuarial Valuations

System	Funded Ratio (percentage)	Covered Payroll	ARC Shortfall (% payroll)	ARC Shortfall (as dollar amt - increases annually)	Amortization period (years)
PERS-DB	75%	\$ 1,129,109,402	0%	\$ 0	29.3
TRS	66%	\$ 750,604,000	0%	\$ 0	28.0
SRS	81%	\$ 64,672,635	4.01%	\$ 2,593,373	does not amortize
MPORS	63%	\$ 44,426,617	0%	\$ 0	19.6
GWPORS	84%	\$ 41,636,566	2.41%	\$ 1,003,411	does not amortize
FURS	72%	\$ 39,891,869	0%	\$ 0	11.3
HPORS	64%	\$ 14,149,269	0.14%	\$ 19,809	30.3
JRS	155%	\$ 6,354,763	0%	\$ 0	0
<b>TOTAL</b>				<b>\$ 3,616,603</b>	

**Notes:**

1. Actuarial valuation results for TRS and PERS assume ***no reduction in Guaranteed Annual Benefit Adjustments (GABA)*** for current retirees and members hired prior to July 1, 2013. The GABA reductions in HB 377 for TRS and HB 454 for PERS from the 2013 Session were enjoined by the court in separate cases pending the outcome of litigation.
2. Funded ratio means current assets compared to current liabilities. When a plan is 100% funded, it means current assets are sufficient to pay 100% of current liabilities.
3. ARC means the Annual Required Contribution rate required to amortize the 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 off over time. This time period is the called the "amortization period".
4. The ARC shortfall as a percent of payroll is the contribution rate increase above current contributions that is needed to amortize the system's unfunded liabilities in 30 years. If a plan's liabilities are being paid off over a period of 30 years or less, there is no shortfall because a 30-year amortization period is considered actuarially sound.
5. The ARC shortfall as a dollar amount is the 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. The amount required would increase each year as the payroll increases. This amount was calculated by legislative staff, so is not in the valuation.
6. Actuarial valuations are based on economic and demographic assumptions. The governing boards have the constitutional duty to adopt these assumptions and they do so based on experience studies. Experience studies are conducted approximately every 5 years. The legislature may not alter these assumptions. The major actuarial assumptions for the FY 2014 actuarial valuations were as follows:

Major Economic Assumptions	TRS	MPERA Systems
Investment rate of return	7.75%	7.75%
Wage growth	4.0%	4.0%
Inflation	3.25%	3.0%

Montana's Public Employees' Retirement Plans: Summary Tables (Source: FY 2014, Actuarial Valuations)

**Table 1 – CONTRIBUTIONS, COSTS, AND AMORTIZATION PERIOD**

SYSTEM Year enacted	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' (GWPOS) 1963	MUNICIPAL POLICE OFFICERS (MPORS) 1974	FIREFIGHTERS' UNIFIED (FURS) 1981
Employer contributions on 7/1/14  <i>*percentages in this table are of covered salary</i>	<b>School Districts:</b> 8.57% plus <b>State GF:</b> 2.49%  <b>State agencies &amp; University System:</b> 10.95% plus <b>State GF:</b> 0.11	8.27% Reduced when amortization period is 25 yrs or less <b>Schools:</b> 7.9% <b>State GF</b> 0.37%  <b>Local Government</b> 8.17% <b>State GF:</b> 0.1%	25.81%	<b>Pre-7/1/13</b> 26.15%  <b>On 7/1/13</b> 28.15%	10.115%	9.00%	14.41%	14.36%
Employee contributions on 7/1/14	Tier one: 7.15% plus 1% supplemental contribution until 90% funded  Tier two <b>post 7/1/13:</b> 8.15%	7.90%  Reduced to 6.9% when amortization period is 25 yrs or less	7.00%	<b>Pre-7/1/97 not electing GABA:</b> 11%  <b>Post 7/1/97 or electing GABA:</b> 11.05%	9.245%	10.56%	<b>Non-GABA Pre-7/1/79</b> 7.0% <b>Pre-7/1/97</b> 8.5% <b>With GABA</b> 9%	<b>Pre-7/1/97 not electing GABA</b> 9.5% <b>7/1/97 or electing GABA</b> 10.7%
Funding from other sources	U- System: 4.72% of MUS- RP payroll \$25 million State General Fund	Coal Tax 3.09% (\$33.7 Million)	None	State General Fund 10.18%	None	None	State General Fund 29.37%	State General Fund 32.61%
Total statutory contributions	19.21%	19.36%	32.81%	49.38%	19.36%	19.56%	52.78%	57.66%
Normal cost	9.13%	11.63%	24.47%	24.46%	18.29%	18.58%	25.65%	26.51%
Percentage used to fund unfunded liabilities	9.77%	7.42%	8.19%	24.69%	.90%	.81%	26.93%	30.96%
Years to amortize unfunded liability	28 yrs	29.3 yrs	0 yrs	30.3 yrs	Does not amortize	Does not amortize	19.6 yrs	11.3 yrs

Montana's Public Employees' Retirement Plans: Summary Tables  
 (Source: June 30, 2014, Actuarial Valuations)

**Table 2 – ACTUARIAL DATA**

SYSTEM Year enacted	TEACHERS' RETIREMENT SYSTEM (TRS)	PERS DEFINED BENEFIT PLAN (PERS-DBRP)	JUDGES (JRS)	HIGHWAY PATROL OFFICERS' (HPORS)	SHERIFFS' (SRS)	GAME WARDENS' AND PEACE OFFICERS' (GWPORS)	MUNICIPAL POLICE OFFICERS (MPORS)	FIREFIGHTERS' UNIFIED (FURS)
Actuarial Value Funded ratio	65.5%	74.4%	155.1%	63.9%	81.3%	83.7%	63.0%	71.8%
Actuarial value of assets	\$3.40 billion	\$4.6 billion	\$78.5 million	\$117.2 million	\$264.9 million	\$129.4 million	\$298.7 million	\$300.9 million
Actuarial liability	\$5.19 billion	\$6.2 billion	\$50.6 million	\$183.4 million	\$326.1 million	\$155.6 million	\$474.3 million	\$419.0 million
Unfunded portion of accrued actuarial liability	\$1.79 billion	\$1.6 billion	(\$27.9 million)	\$66.2 million	\$61.1 million	\$25.2 million	\$175.6 million	\$118.1 million
Projected ARC shortfall	0%	0%	0%	0.14%	4.01%	2.41%	0%	0%
Projected ARC shortfall as annual dollar amount	\$0	\$0	\$0	\$ 19,809	\$2,593,373	\$1,003,441	\$0	\$0

Montana's Public Employees' Retirement Plans: Summary Tables (Source: June 30, 2014, Actuarial Valuation)

**Table 3 - BENEFIT ELIGIBILITY AND BASIC FORMULA**  
(multiplier x highest avg compensation x years of service)

SYSTEM Year enacted	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	<b>Pre-July 1, 2013</b> 25 yrs, any age or 5 yrs, age 60  <b>July 1, 2013</b> 30 yrs, age 55 or 5 yrs, age 60	<b>Pre-July 1, 2011</b> 30 yrs service, any age or 5 yrs service, age 60 or; any service, age 65 <b>July 1, 2011</b> 5 yrs, age 65, or age 70 any years	5 yrs, age 60	20 yrs, any age, or 5 yrs and age 50, whichever occurs later	20 yrs, any age	20 yrs, age 50 or 5 yrs, age 55	20 yrs, any age or 5 yrs, age 50	20 yrs, any age or 5 yrs, age 50
Minimum service for vesting	5 yrs	5 yrs	5 yrs	<b>Pre-July 1, 2013</b> 5 yrs <b>July 1, 2013</b> 10 yrs	5 yrs	5 yrs	5 yrs	5 yrs
Highest average compensation (HAC) period used in benefit calculation	<b>Pre- July 1, 2013</b> 3 yrs  <b>July 1, 2013</b> 5yrs	<b>Pre-July 1, 2011</b> 3 yrs <b>July 1, 2011</b> 5 yrs	3 yrs	3 yrs	<b>Pre-July 1, 2011</b> 3 yrs <b>July 1, 2011</b> 5 yrs	<b>Pre-July 1, 2011</b> 3 yrs <b>July 1, 2011</b> 5 yrs	3 yrs  (final avg, not highest avg.)	3 yrs
Service retirement benefit multiplier	<b>Pre- July 1, 2013</b> 1.67% per yr  <b>July 1, 2013</b> 1.67% per year or if 30 years and age 60  Tier 2 members receive 1.85% per year	<b>Pre-July 1, 2011</b> < 25 yrs service: 1.78571% 25 yrs or more: 2% <b>July 1, 2011</b> up to 10 yrs service: 1.5% 10 yrs to less than 30 yrs: 1.78571% 30 yrs or more: 2% <b>Money Purchase Option</b> The greater of the above or actuarial equivalent of 2X member's accumulated contributions plus interest set by board (0.25% - for FY2014-15)	3.33% to 15 yrs plus 1.785% x yrs of service greater than 15	2.6% per yr	2.5% per yr	2.5% per yr	2.5% per yr	2.5% per yr
Social Security coverage	Yes (most members)	Yes (most members)	Yes	No	Yes	Yes	No	No

Montana's Public Employees' Retirement Plans: Summary Tables (Source: FY 2014, Actuarial Valuations)

**Table 4 – ACTIVE MEMBERSHIP**

SYSTEM Year enacted	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 members	18,300	28,229	55	229	1307	955	743	616
Average age	45.6 yrs	48.8 yrs	59.8 yrs	40.7 yrs	40.5 yrs	42.5 yrs	38.8 yrs	39.7 yrs
Average years of service	11.6 yrs	9.8 yrs	9.9 yrs	10.4 yrs	7.4 yrs	7.7 yrs	8.9 yrs	10.8 yrs
Average annual salary – Full time members	\$51,967	\$39,709	\$118,093	\$60,704	\$49,291	\$42,365	\$59,830	\$64,115
Number of participating employers	370	541	1	1	57	7	32	25
Employers' Covered Payroll	\$750.6 million	\$1.1 billion	\$6.4 million	\$14.1 million	\$64.6 million	\$41.6 million	\$44.4 million	\$39.9 million

Montana's Public Employees' Retirement Plans: Summary Tables  
 (Source: June 30, 2014, Actuarial Valuations)

**Table 5 – RETIREE AND BENEFIT RECIPIENT DATA**

SYSTEM Year enacted	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	14,349	20,081	67	322	533	203	716	595
Average age of current retirees	70.6 years	72 years	76 years	70 years	65 years	68 years	67 years	69 years
Average age at retirement	58 years	60 years	62 years	49 years	53 years	56 years	48 years	51 years
Average years of service at retirement	26 years	20 years	17 years	24 years	20 years	20 years	20 years	24 years
Average annual benefit (service retirement)	\$21,153	\$15,205	\$45,460	\$30,279	\$24,772	\$20,817	\$27,803	\$32,624
Post-retirement benefit adjustment (GABA)  <i>*GABA reductions for pre-7/1/13 members in TRS and PERS from 2013 Session have been enjoined by the court and are not reflected in this row.</i>	<b>If hired before 07/01/2013</b> 1.5% (3 year waiting period)  <b>If hired after 07/01/2013</b> Equal to or greater than 0.50% but no more than 1.50% depending on the funded status of the plan.(3-year waiting period)	<b>If hired before 07/01/07</b> 3.0% GABA (after 1 year)  <b>If hired on or after 07/01/07</b> 1.5% GABA (after 1 year)  <b>If hired after 07/01/2013</b> 1.5%, reduced 0.1% for every 2 yrs below 90%funded (3-year waiting period)	<b>Pre-7/1/97</b> Benefits increased same as salary of sitting judge  <b>All post-7/1/97 or who elected GABA</b> 3.0% GABA (after 1 year)	<b>Pre-7/1/97 not electing GABA</b> 2%of base salary of probationary officer  <b>All post-7/1/97 or who elected GABA</b> 3.0% GABA (after 1 year)  <b>Hired on or after 07/01/13</b> 1.5% GABA (after 3 years)	<b>If hired before 07/01/07</b> 3.0% GABA (after 1 year)  <b>If hired on or after 07/01/07</b> 1.5% GABA (after 1 year)	<b>If hired before 07/01/07</b> 3.0% GABA (after 1 year)  <b>If hired on or after 07/01/07</b> 1.5% GABA (after 1 year)	<b>Pre-7/1/97 not electing GABA</b> ½ of monthly salary of new officer  <b>All post-7/1/97 or who elected GABA</b> 3.0% GABA (after 1 year)	<b>Pre-7/1/97 not electing GABA</b> ½ of monthly salary of new firefighter  <b>All post-7/1/97 or who elected GABA</b> 3.0% GABA (after 1 year)

Montana's Public Employees' Retirement Plans: Summary Tables  
(Source: Actuarial Valuations and Montana Board of Investments)

**Table 6 – INVESTMENT DATA**

SYSTEM Year enacted	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 (market value on 6/30/14)	\$3.65 billion	\$4.94 billion	\$84.22 million	\$126.01 million	\$284.65 million	\$138.74 million	\$ 319.19 million	\$321.56 million
Rate of return for composite index FY2014	18.15%	18.15%	18.14%	18.16%	18.13%	18.11%	18.14%	18.13%
Rate of rate return on pension fund	17.17%	17.16%	17.16%	17.17%	17.14%	17.12%	17.20%	17.19%
5-year compound rate of return, composite index	13.99%	13.99%	13.95%	14.00%	13.93%	13.91%	13.93%	13.92%
5-year compound rate of return, on pension fund	13.28%	13.27%	13.24%	13.29%	13.22%	13.20%	13.24%	13.23%
Percentage growth in total assets between FY 2013 and FY 2014 valuations	10.79%	11.01%	11.58%	10.87%	12.59%	15.46%	13.72%	14.21%
Percentage growth in total liabilities between FY2013 and FY 2014 valuations	4.58%	4.66%	2.77%	4.45%	7.20%	10.44%	5.39%	5.60%

Montana's Public Employees' Retirement Plans: Summary Tables  
(Source: June 30, 2013, Actuarial Valuation)

**Table 7 – VOLUNTEER FIREFIGHTER'S COMPENSATION ACT**  
(established in 1935)

Minimum service and age for normal (unreduced) retirement	Age 55 and 20 years of service; or age 60 and 10 years of service
Vested	10 Years
Basic benefit formula	\$7.50 per year of service, up to maximum of \$225 per month. Members that retire on or after 7/1/2011 can increase their benefit for over 30 years of service if the system is funded in 20 years or less.
Disability	\$7.50 per year of service, with a minimum of \$75 per month and with the same maximum as a regular retirement benefit. The benefit can increase for over 30 years of service if the system is funded in 20 years or less.
Death Benefit	\$7.50 per year of service (maximum of 40 months including any amounts retiree received).
Membership	1,935 active members 1,332 retirees and beneficiaries
Average age of active members	45.7 years old
Average years of service of active members	9.7 years
Average benefit for service retiree	\$145 per month
Contributions	5% of insurance premium taxes collected (See Section 19-17-301, MCA)
Actuarial Liabilities	\$38.0 million
Actuarial value of assets	\$31.3 million
Unfunded liability	\$6.7 million
Years to Amortize	5.1 years
Funded ratio	82.4%

Montana's Public Employees' Retirement Plans: Summary Tables  
 (Source: June 30, 2014, Investment Performance Evaluation, Buck Consultants)

**Table 8 – PERS DEFINED CONTRIBUTION (DC) RETIREMENT PLAN  
 June 30, 2014**

Membership	New members have 12 months to make a one-time, irrevocable choice between the DB and DC plans
Active membership	2,188 – 7% of total active members of PERS
Employee Contributions	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	8.17% of salary Reduced when PERS-DB plan amortization period is less than 25 years. Contributions allocated as follows: -- 4.19% to member accounts -- 2.37% to PERS DB plan as plan choice rate unfunded actuarial liability -- 0.04% to an educational fund -- 0.3% to disability trust fund -- 0.27% to the DB plan to reduce the plan choice rate unfunded actuarial liability; then to the long-term disability plan trust fund once the PCR UAL is retired -- 1% to PERS DB plan to reduce unfunded actuarial liability
Total contributions to member accounts	11.09% of salary (FY2013), 12.09% (FY2014) Reduced to 11.09% when PERS-DB plan amortization period is less than 25 years
Total Amount Invested	\$128 million
Investment Choices	28 funds (5 categories)
Total Allocation of Total Assets	52% - Target Date/Balanced Funds 29% - U.S. Equity Funds 9% - International Equity Funds 8% - Stable Value Fund 2% - Bond Funds
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 Great-West Retirement Services is the plan's record keeper

Montana's Public Employees' Retirement Plans: Summary Tables  
 (Source: June 30, 2014, Performance Evaluation Report, Buck Consultants)

**Table 9 – DEFERRED COMPENSATION PLAN (457)**

Membership	Voluntary supplemental retirement savings plan available to all employees of the State, Montana University System, and contracting political subdivisions.
Number of Participants	8,519 members
Employee Contributions	Voluntary, pre-tax deferral or designated ROTH
Employer Contributions	None, unless a term in the employer contract
Total Amount Invested	\$432.4 million
Number of Investment Choices	30 funds (5 categories)
Total Allocation of Total Assets	54% - Stable Value Fund 26% - U.S. Equity Funds 9% - International Equity Funds 8% - Target Date/Balanced Funds 3% - Bond Funds
Vesting	Participants are fully vested in their accounts immediately
Benefit Eligibility	Not available to participant 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

Montana's Public Employees' Retirement Plans: Summary Tables

**Table 10 – MONTANA UNIVERSITY SYSTEM RETIREMENT PROGRAM  
as of June 30, 2014**

<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>Total participants: 8,656 Avg. age: 49 yrs Avg. yrs of membership: 10.5 yrs</p>
<p>Retirement eligibility</p>	<p>A plan member may “retire” (i.e., access the MUS-RP account) any time after service is terminated. There are 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-CREF (Teachers’ Insurance and Annuity Association – College Retirement Equities Fund)</p> <p>Avg. account balance: \$59,172</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>\$ 5.12 billion</p>
<p>Investment Choices</p>	<p>27 choices (6 asset classes)</p>
<p>Total Allocation of Total Assets By Asset Class</p>	<p>46% - Equities 23% - Guaranteed 19% - Multi-asset 5% - Real estate 5% - Fixed income 3% - Money market</p>
<p>Total MUS-RP payroll covered</p>	<p>\$173.8 million</p>
<p>Contributions to member accounts as a percentage of payroll</p>	<p>Employer: 5.956% Employee: 7.044% TOTAL: 13.0%</p>
<p>Supplemental employer contributions to TRS for unfunded liability.</p>	<p>4.72%</p> <p><u>Note:</u> The total unfunded liability in TRS will amortize in 28 years with this current rate (i.e., without the increase noted below).</p>
<p>Increase required in supplemental contribution rate to amortize unfunded liability by 2033</p>	<p>5.03%</p> <p><u>Note:</u> 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>