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Montana Public Employees' Retirement Board

Valuation Results **June 30, 2018**

Presented October 4, 2018

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➤ Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses (administration)

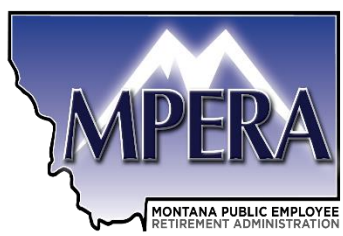
$$C + I = B + E$$

B depends on

- Plan Provisions
- Experience

C depends on

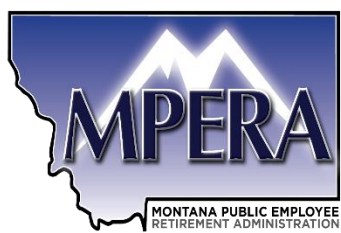
- Short Term: Actuarial Assumptions
Actuarial Cost Method
- Long Term: I, B, E



Results

➤ Asset returns

- Market asset returns averaged 8.78% vs. 7.65% expected (1.13% greater than expected).
- Actuarial asset returns averaged 6.82% vs. 7.65% expected (0.83% less than expected).
 - Actuarial value of assets smooth investment gains and losses on a market value basis over a four year period.
 - The actuarial value of assets indicates unrecognized investment loss will be recognized next year followed by two years of investment gains.



Comments on Valuation



➤ Funded Ratios

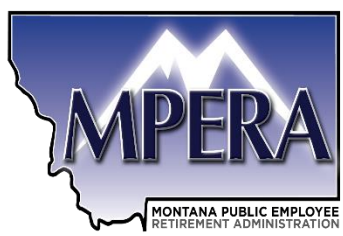
- Funded ratios increased for all systems except for JRS, MPORS, and HPORS.

➤ Amortization Periods for Unfunded Liability

- Amortization periods increased or stayed the same for all systems except for SRS and VFCA.
- The amortization periods for GWPORS, HPORS and PERS exceed 30 years.

➤ Actuarial Experience

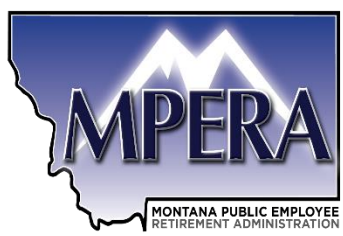
- Actuarial investment experience was less than the assumed rate of return for all plans.
- FURS, GWPORS, PERS, and VFCA had demographic gains.
- HPORS, JRS, MPORS, and SRS had demographic losses.



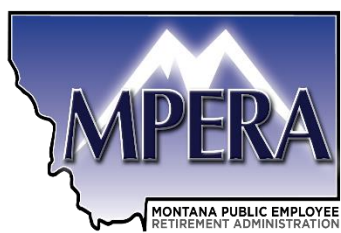
Comments on Valuation



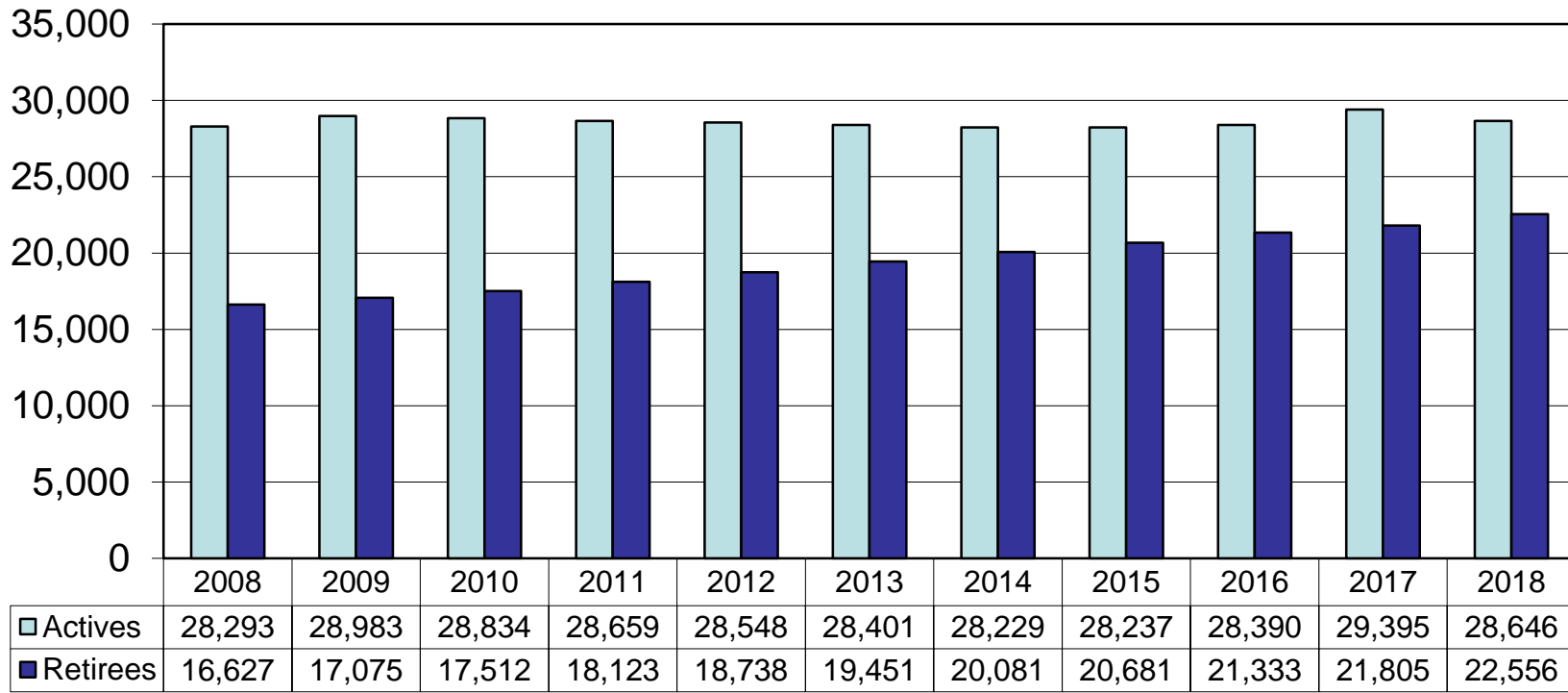
- Contributions
 - PERS
 - In accordance with statute, the employer contribution rate was increased by 0.1%.



PERS Valuation Results



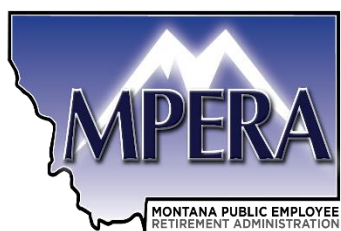
PERS Active and Retired Membership



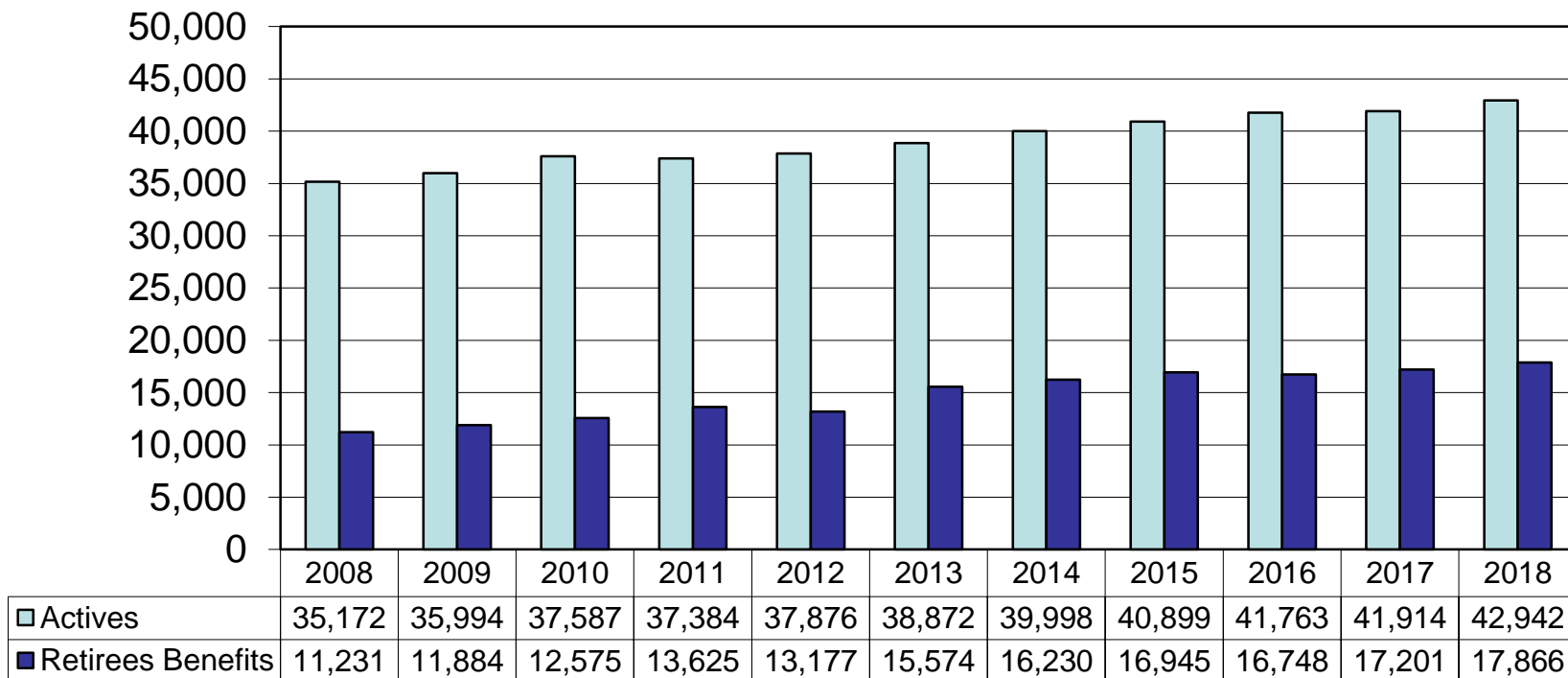
0.12% annual increase for active members since 2008; 2.55% decrease for 2018.

3.10% annual increase for retired members since 2008; 3.44% increase for 2018.

0.59 retirees per active 10 years ago; 0.79 retirees per active now.

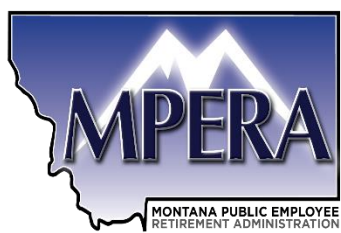


PERS Average Salary and Benefits

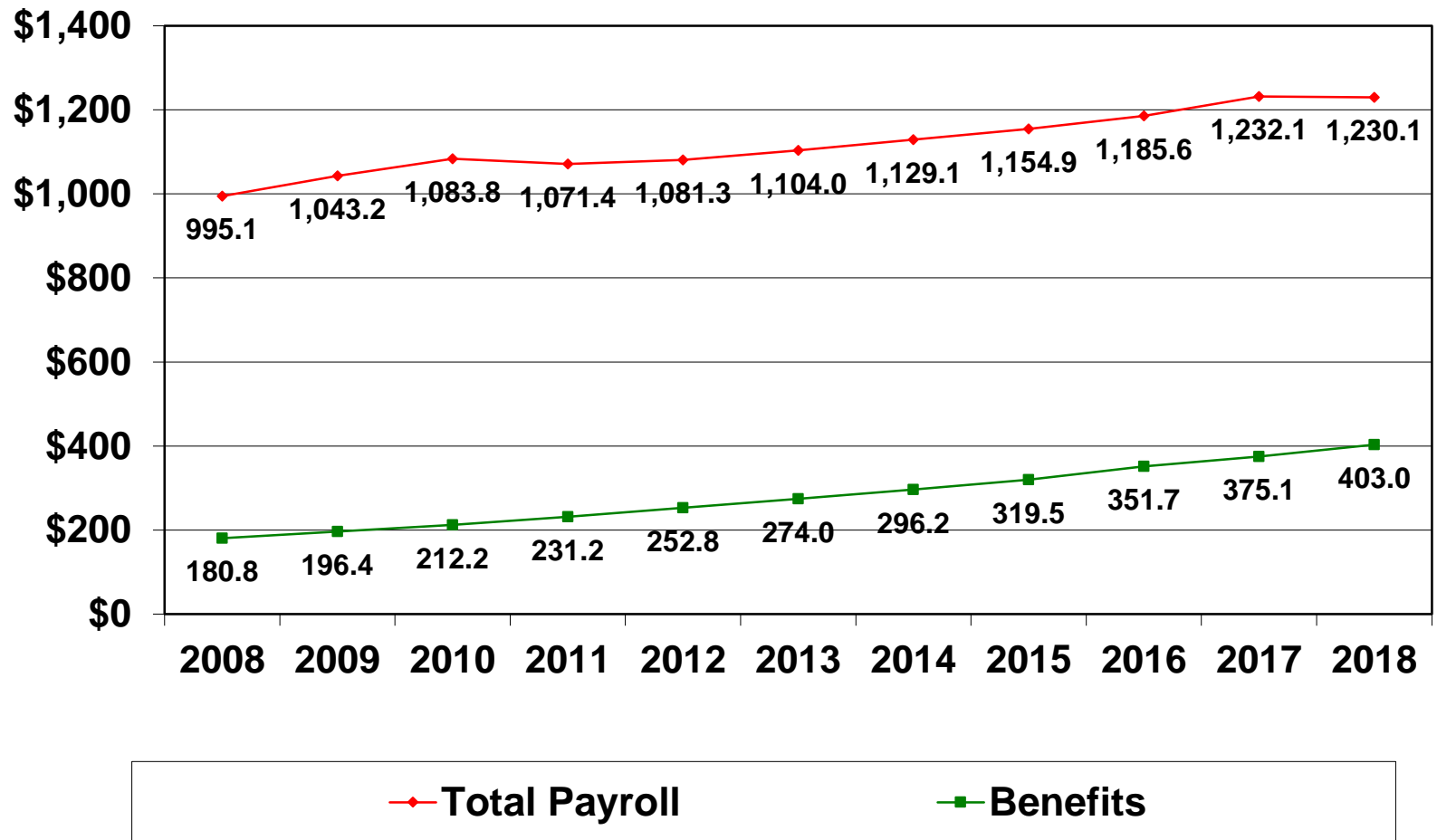


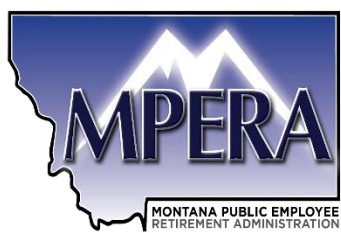
2.0% annual increase for average salary since 2008; 2.5% increase for 2018.

4.8% annual increase for average benefits since 2008; 3.9% increase for 2018.

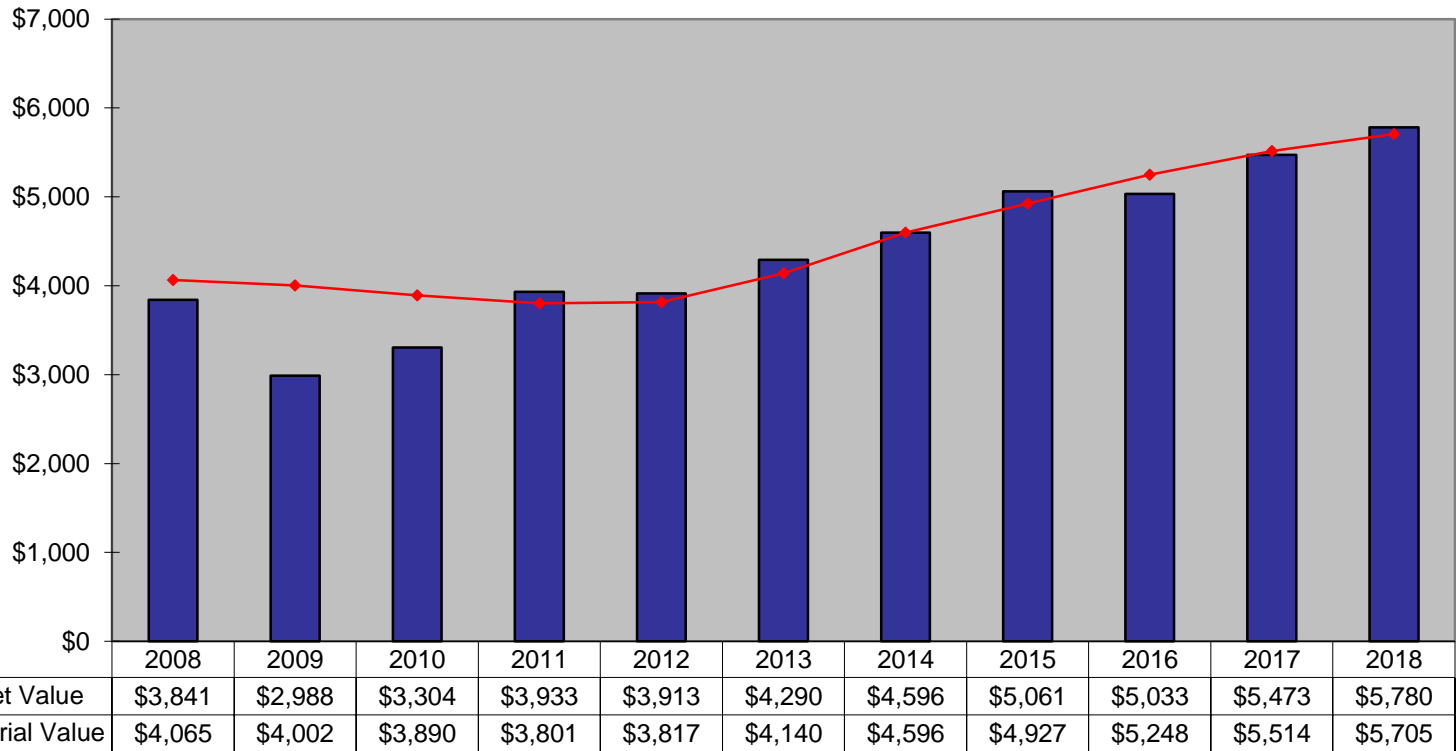


PERS Payroll & Benefits (\$ Millions)

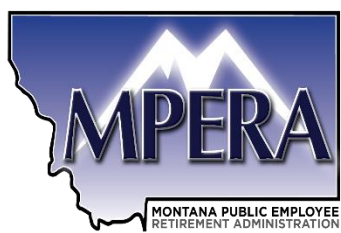




PERS Assets (\$ Millions)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Market Return	(4.9)%	(20.9)%	12.9%	21.7%	2.3%	13.0%	17.1%	4.6%	2.0%	11.9%	8.9%
Actuarial Return	7.6%	(0.2)%	(1.2)%	(0.1)%	3.3%	11.9%	13.2%	9.6%	9.3%	8.1%	6.7%

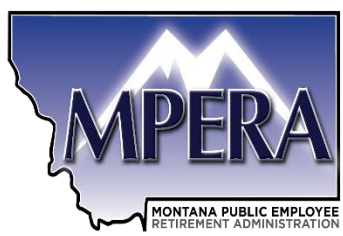


PERS Funding Results



	July 1, 2017 Valuation	July 1, 2018 Valuation
Total Normal Cost Rate	9.86%	10.27%
Administrative Expense Load	0.26%	0.26%
Rate to Amortize UAL	6.31%	6.00%
Transfer to DB Education Fund	<u>0.04%</u>	<u>0.04%</u>
Statutory Funding Rate*	16.47%	16.57%
Actuarial Accrued Liability	\$7,578.4 million	\$7,730.1 million
Actuarial Value of Assets	\$5,514.0 million	\$5,705.2 million
Unfunded Accrued Liability	\$2,064.4 million	\$2,024.9 million
Funded Ratio	72.76%	73.81%
Amortization Period*	30 Years	38 Years

* Reflects anticipated increases in employer supplemental contribution rates and projected State revenue. Payable in fiscal year immediately following the valuation date.



Valuation Results – Other Plans



System	Funded Ratio		Amortization Period		Statutory Rate		30-Year Funding Rate	
	2017	2018	2017	2018	2017	2018	2017	2018
JRS	167%	161%	0	0	32.81%	32.81%	(6.04%)	(4.85%)
HPORS	64%	64%	37	40	51.38%	51.38%	54.02%	55.10%
SRS	81%	81%	25	21	23.61%	23.61%	22.82%	22.19%
GWPORS	81%	83%	70	72	19.56%	19.56%	20.73%	20.71%
MPORS	69%	68%	16	20	52.78%	52.78%	44.58%	47.12%
FURS	76%	78%	10	10	57.67%	57.67%	40.27%	39.19%
VFCA	81%	83%	6	5	5% of premium taxes		\$915,642	\$823,290

* The actual contributions for the fiscal year ending 2017 and 2018 were \$2,064,561 and \$2,212,113, respectively.

PERS DCRP Long Term Disability Plan

	July 1, 2017 Valuation	July 1, 2018 Valuation
Total Normal Cost Rate	0.28%	0.30%
Rate to Amortize UAL	<u>0.02%</u>	<u>0.00%</u>
Statutory Funding Rate	0.30%	0.30%
Actuarial Accrued Liability	\$3,967,262	\$4,354,320
Actuarial Value of Assets	\$3,456,936	\$4,455,481
Unfunded Accrued Liability	\$510,326	(\$101,161)
Funded Ratio	87.14%	102.32%
Amortization Period	19 Years	0 Years
30-Year Funding Rate	0.29%	0.00%