



Montana Public Employees' Retirement Board

Valuation Results June 30, 2018

**Presented December 3, 2018
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Benefit Financing

➤ Basic Retirement Funding Equation

$$C + I = B + E$$

C= Contributions

I= Investments

B= Benefits Paid

E= Expenses (administration)

B depends on

Plan Provisions

Experience

C depends on

Short Term: Actuarial Assumptions
Actuarial Cost Method

Long Term: I, B, E



Participation in MPERA

- State, local governments, and certain employees of the Montana University system, & school districts are covered by MPERA.

- 42,474 Active Employees Including DC and 457 Members
- 26,895 Retirees & Beneficiaries (DB)
- 24,133 Inactive (DB)

- 564 Employers (DB, DC & 457)
- 235 Volunteer Fire Departments



Comments on Valuation for PERS

➤ 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).

➤ Market value of assets are \$74,758,281 more than the actuarial value of assets. This unrecognized investment gain will be recognized over the next four years.

- An investment loss followed by two investment gains.

➤ Funded Ratio

-Funding increased from 72.76% to 73.81%

➤ Amortization Period

-Amortization period increased from 30 to 38 years



Experience Study

- MPERA's experience study is conducted every 4-7 years. The most recent experience study was conducted in 2017 for the six-year period July 1, 2010 to June 30, 2016 to compare the system's actual experience from the previous years.

Economic Assumptions :

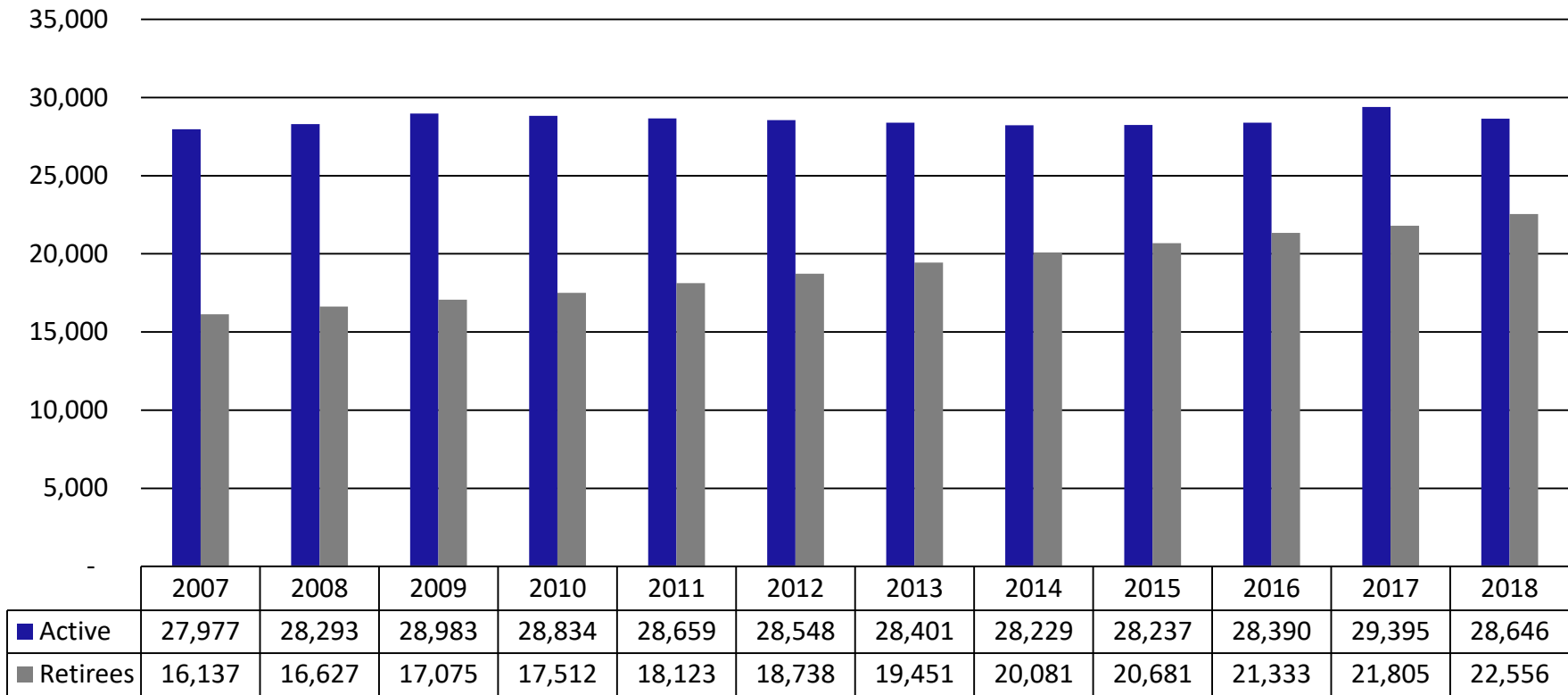
➤ General Wage Increase	3.50%
➤ Investment Return	7.65%
➤ Price Inflation	2.75%
➤ Interest on member accounts	2.75%
➤ Administrative Expense	0.26%

Demographic Assumptions:

- Individual Salary Increases
- Retirement Rates
- Disablement Rates
- Mortality Rates for Healthy and Disabled
- Other Terminations of Employment
- Probability of Retaining Membership in System



PERS Active and Retired Membership



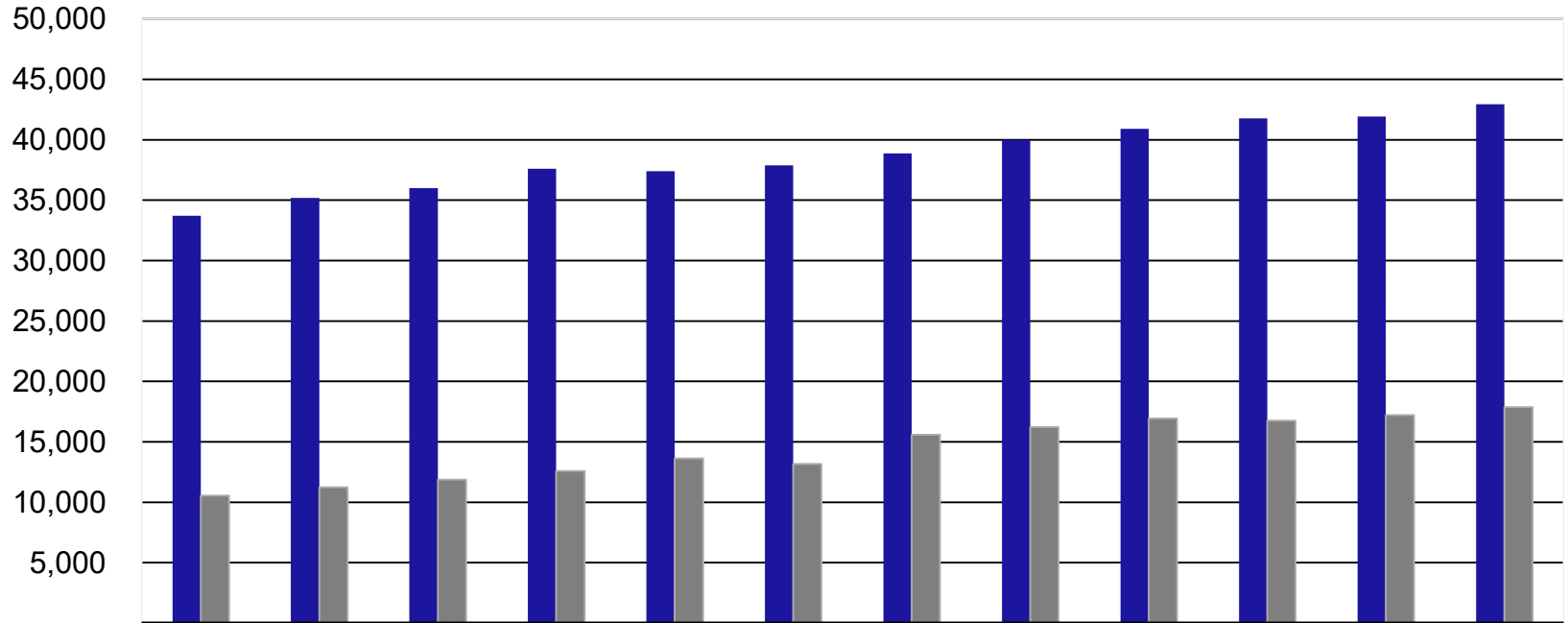
0.12% annual increase for active members since 2008; 2.55% decrease for 2018.

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



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
■ Actives	33,716	35,172	35,994	37,587	37,384	37,876	38,872	39,998	40,899	41,763	41,914	42,942
■ Retirees Benefits	10,547	11,231	11,884	12,575	13,625	13,177	15,574	16,230	16,945	16,748	17,201	17,866

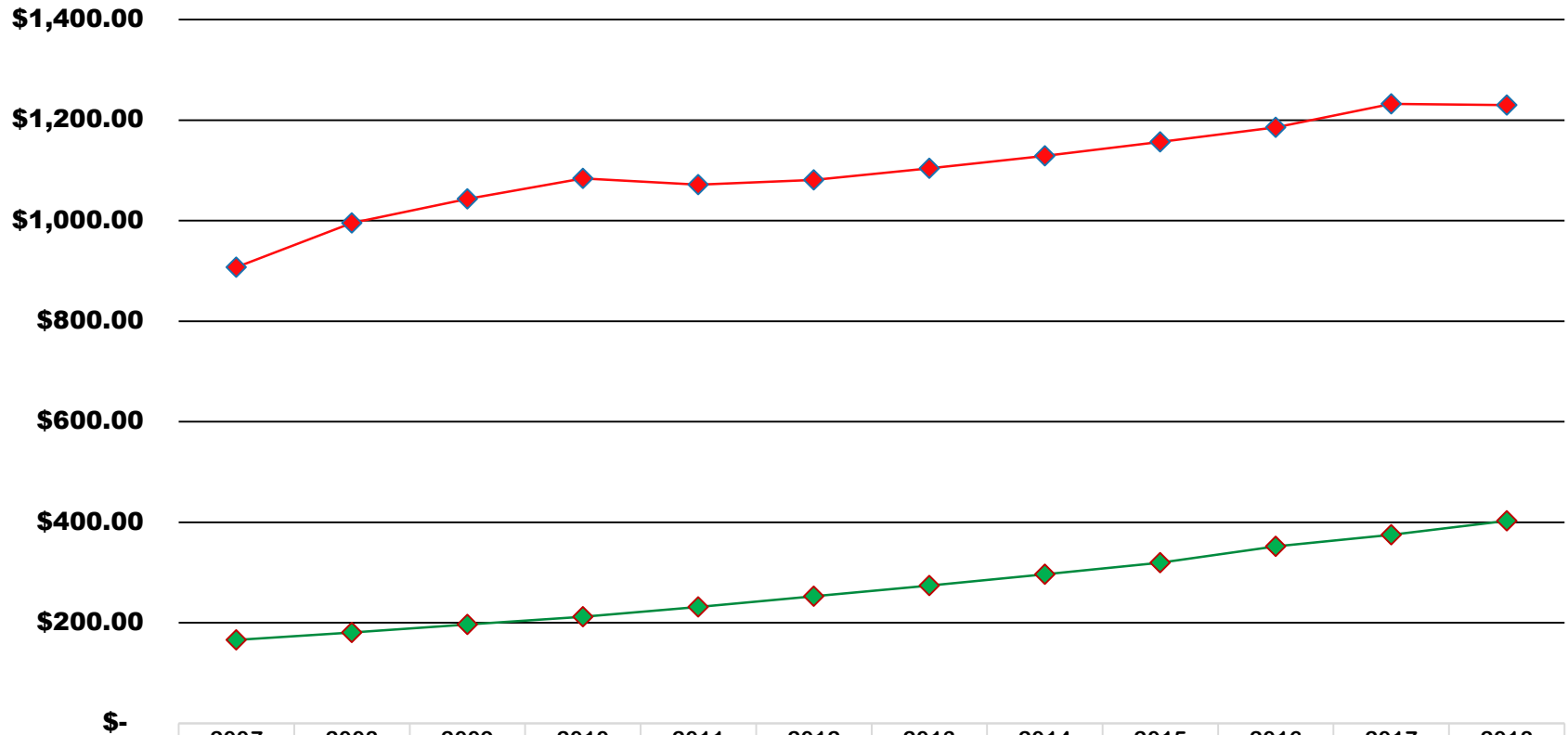
2.0% annual increase for average salary since 2008; 2.5% increase for 2018.

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



PERS Payroll & Benefits

(\$ Millions)

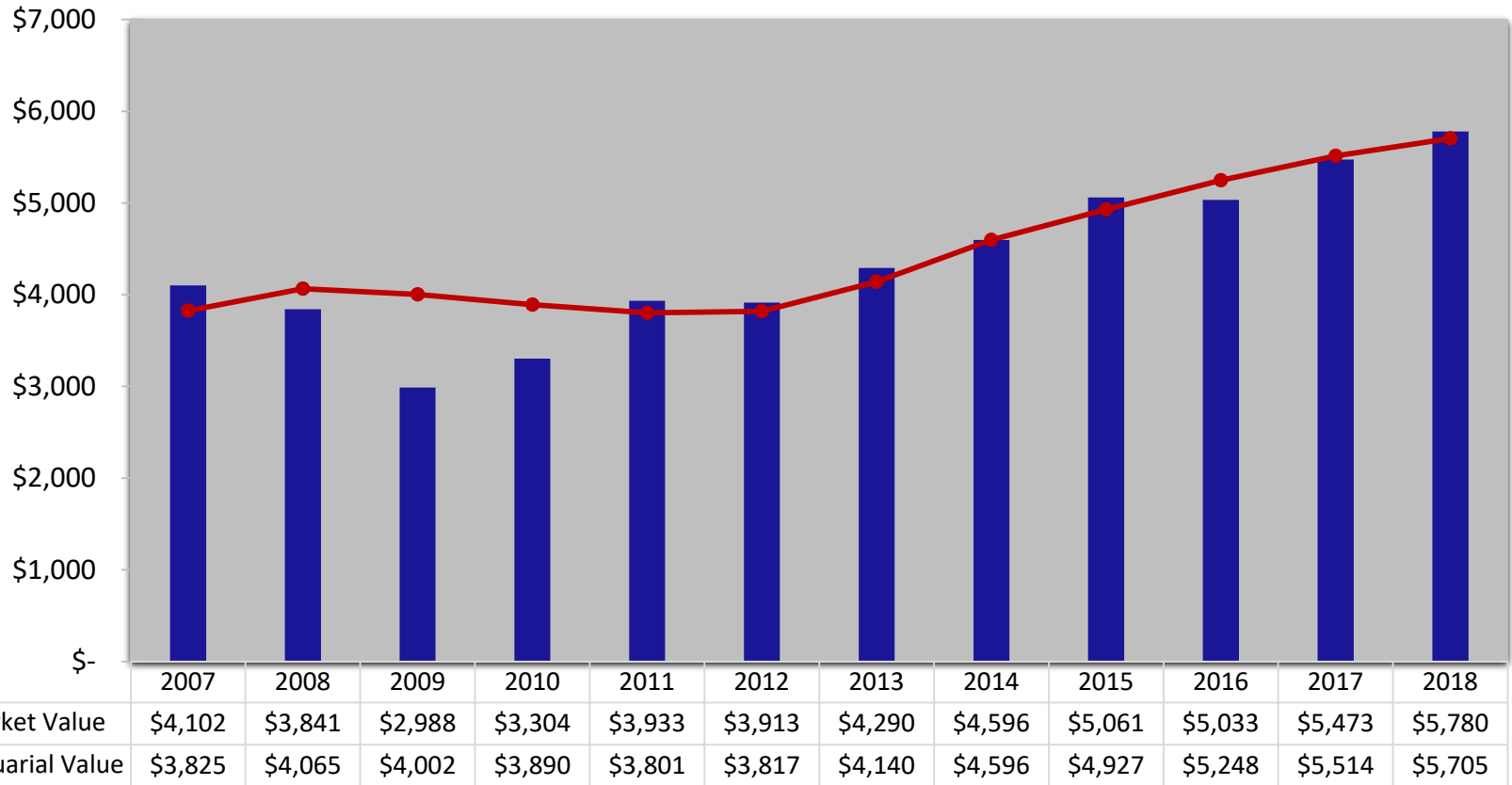


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Payroll	\$907.40	\$995.10	\$1,043.2	\$1,083.8	\$1,071.4	\$1,081.3	\$1,104.0	\$1,129.1	\$1,156.9	\$1,185.6	\$1,232.1	\$1,230.1
Benefits	\$166.10	\$180.80	\$196.40	\$212.20	\$231.20	\$252.80	\$274.00	\$296.20	\$319.50	\$351.70	\$375.10	\$403.00



PERS Assets

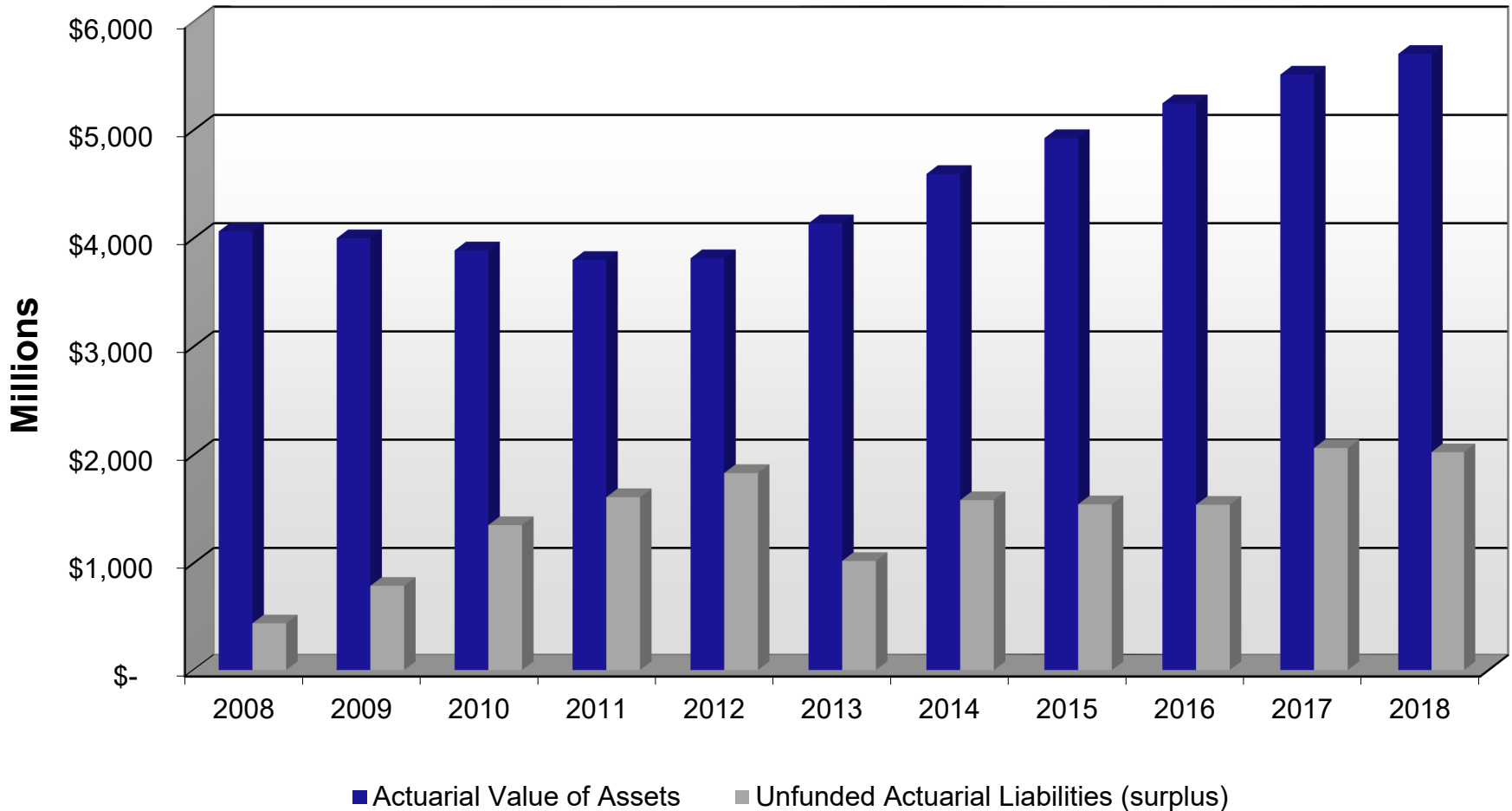
(in Millions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Market Return	17.90%	(4.90%)	(20.90%)	12.90%	21.70%	2.30%	13.00%	17.10%	4.60%	2.00%	11.90%	8.9%
Actuarial Return	11.90%	7.60%	(0.20%)	(1.20%)	(0.10%)	3.30%	11.90%	13.20%	9.60%	9.30%	8.10%	6.7%



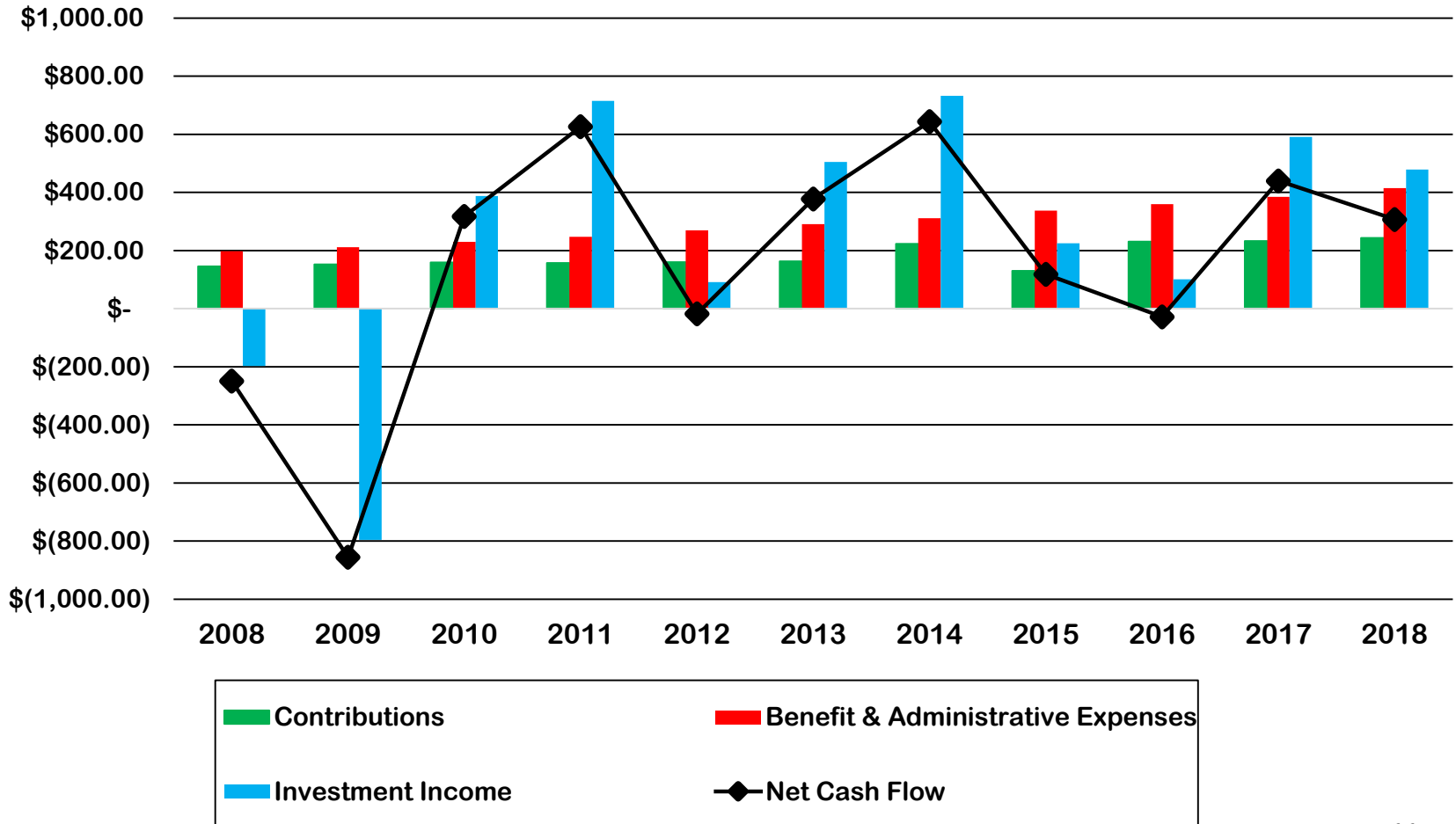
Actuarial Assets vs UAAL





Historical Cash Flow (in Millions)

Cash Flow History

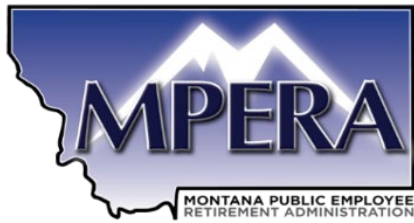




PERS Funding Results

	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



Level Dollar vs. Level Percent of Pay

