



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

Montana Public Employees' Retirement Board

Valuation Results
June 30, 2020

Presented October 8, 2020





Benefit Financing



➤ Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions

I = Investment Income

B = Benefits Paid

E = Expenses (administration)



Benefit Financing



$$C + I = B + E$$

B depends on

- Plan Provisions
- Experience

C depends on

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



Results



Comments on Valuation



➤ Asset returns

- Market asset returns averaged 2.68% vs. 7.65% expected (4.97% less than expected).
- Actuarial asset returns averaged 6.97% vs. 7.65% expected (0.68% 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 losses will be recognized over the following three years



Comments on Valuation



➤ Funded Ratios

- Funded ratios increased for MPORS, FURS, JRS and VCFA
- Funded ratios decreased for SRS, HPORS, GWPORS and PERS

➤ Amortization Periods for Unfunded Liability

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



Comments on Valuation



➤ Actuarial Experience

- Actuarial investment experience was less than the assumed rate of return for all plans.
- All Systems experienced demographic losses except for MPORS which experienced a demographic gain.

➤ Contributions

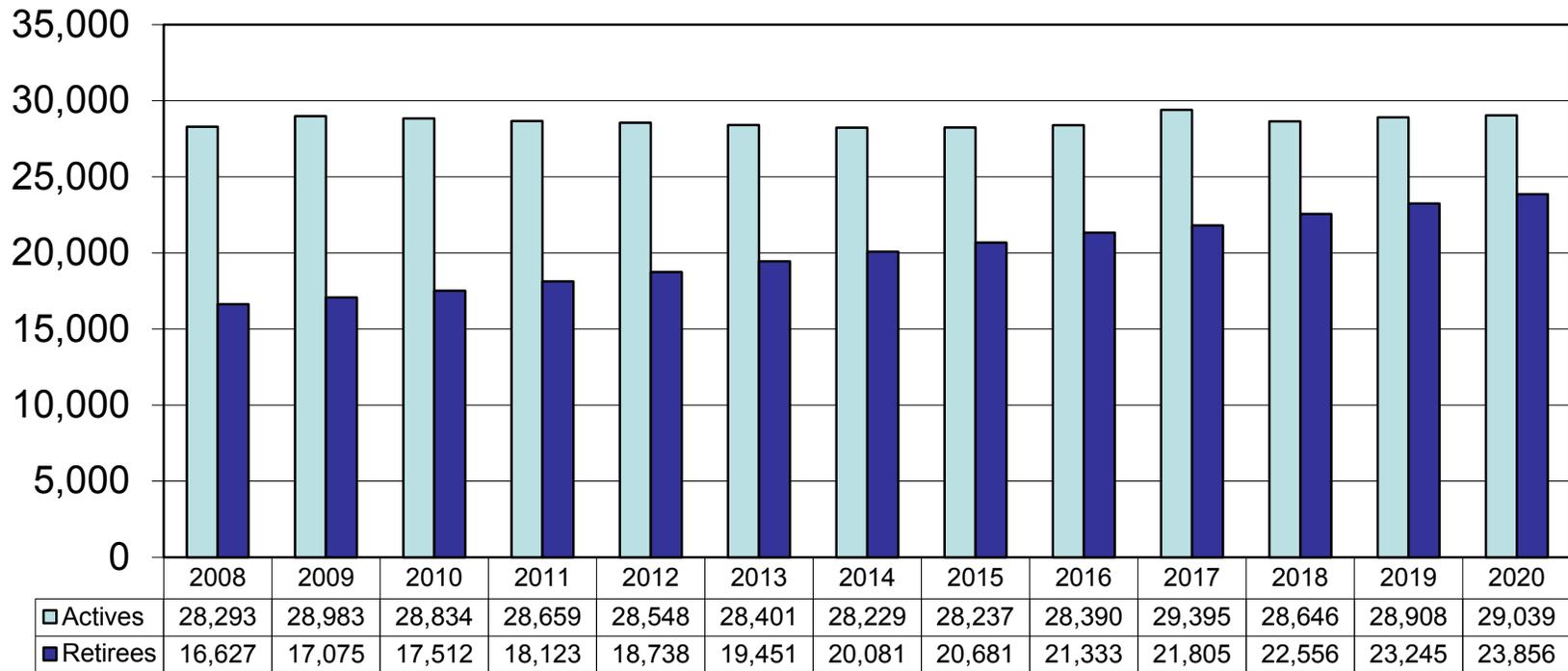
- PERS
 - In accordance with statute, the employer contribution rate was increased by 0.1%.



PERS Valuation Results



PERS Active and Retired Membership



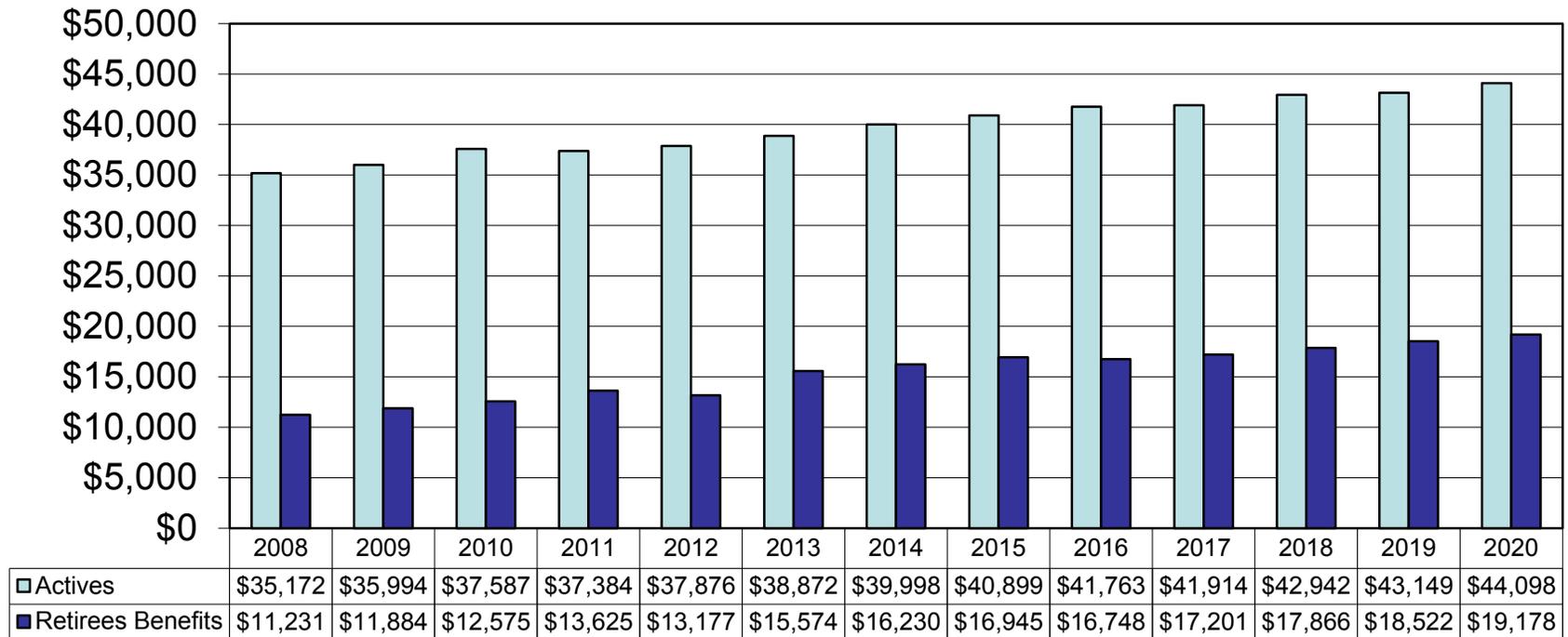
0.2% annual increase for active members since 2008; 0.5% increase for 2020.

3.1% annual increase for retired members since 2008; 2.6% increase for 2020.

0.6 retirees per active 13 years ago; 0.82 retirees per active now.



PERS Average Salary and Benefits

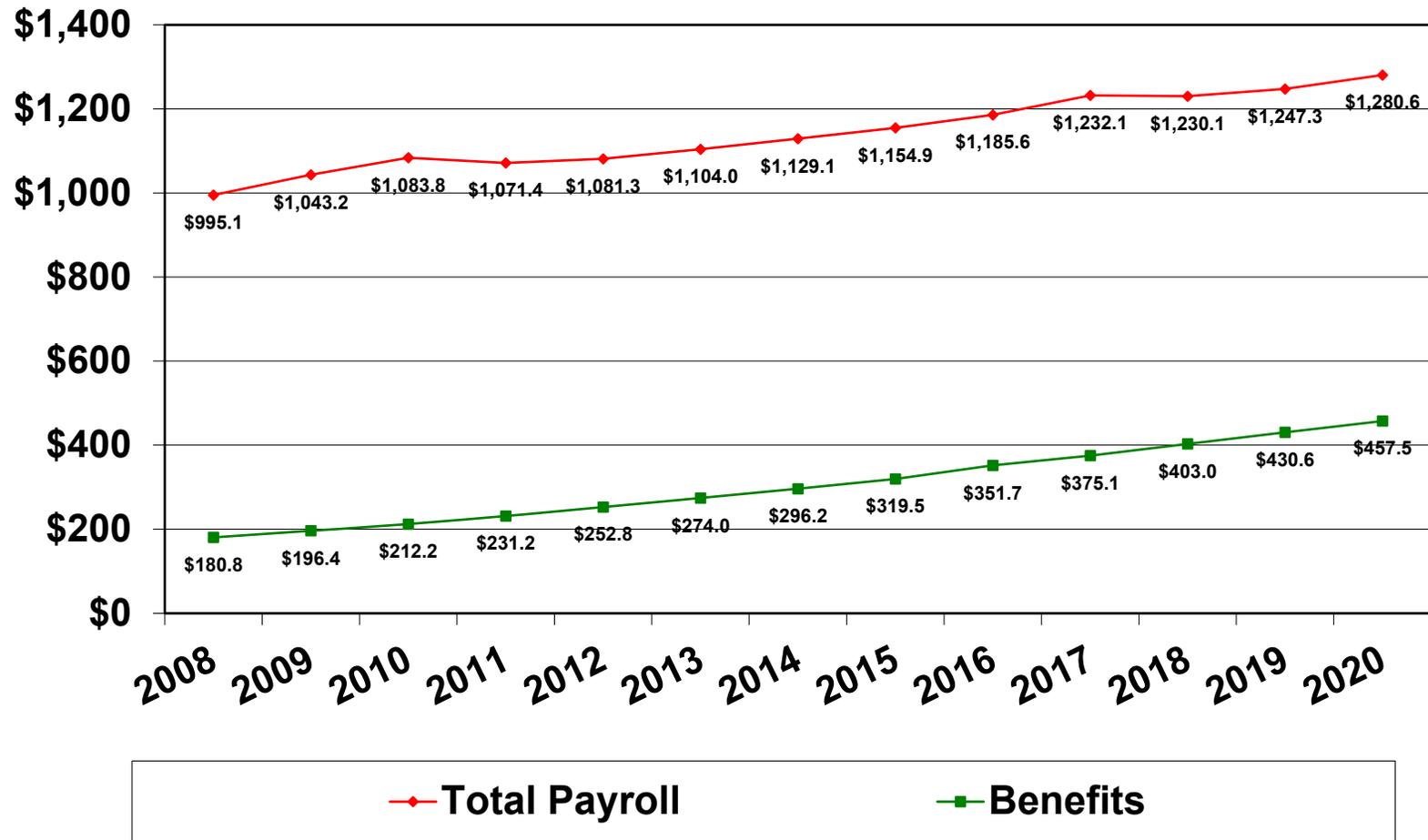


1.9% annual increase for average salary since 2008; 2.2% increase for 2020.

4.6% annual increase for average benefits since 2008; 3.5% increase for 2020.

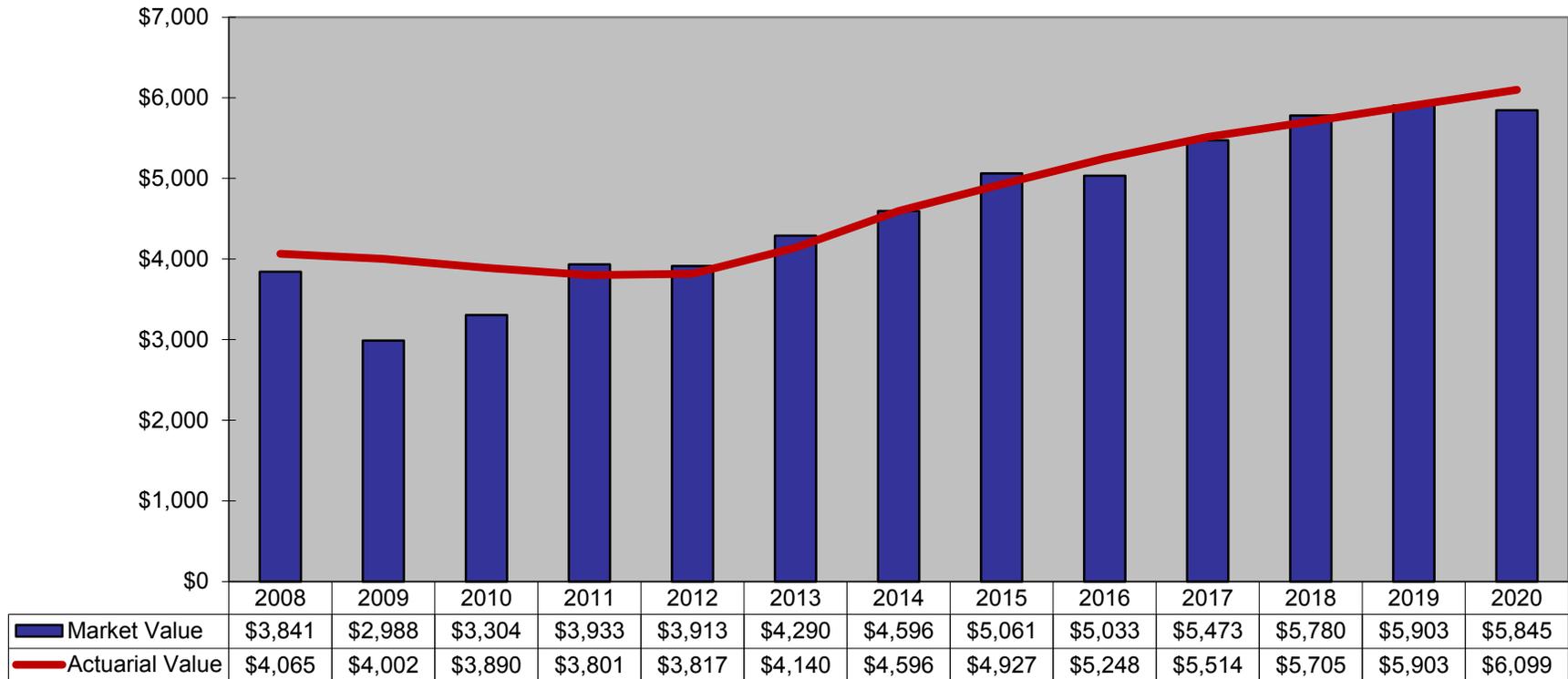


PERS Payroll & Benefits (\$ Millions)





PERS Assets (\$ Millions)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Return	(4.9)%	(20.9)%	12.9%	21.7%	2.3%	13.0%	17.1%	4.6%	2.0%	11.9%	8.9%	5.7%	2.7%
Actuarial Return	7.6%	(0.2)%	(1.2)%	(0.1)%	3.3%	11.9%	13.2%	9.6%	9.3%	8.1%	6.7%	7.1%	7.1%



PERS Funding Results



	July 1, 2019 Valuation	July 1, 2020 Valuation
Total Normal Cost Rate	10.09%	9.81%
Administrative Expense Load	0.30%	0.28%
Rate to Amortize UAL	6.24%	6.64%
Transfer to DB Education Fund	<u>0.04%</u>	<u>0.04%</u>
Statutory Funding Rate*	16.67%	16.77%
Actuarial Accrued Liability	\$7,957.0 million	\$8,234.0 million
Actuarial Value of Assets	\$5,903.2 million	\$6,099.4 million
Unfunded Accrued Liability	\$2,053.8 million	\$2,134.6 million
Funded Ratio	74.19%	74.08%
Amortization Period*	36 Years	35 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	
	2019	2020	2019	2020		2019	2020
JRS	161%	163%	0	0	32.81%	(5.46%)	(5.93%)
HPORS	65%	65%	42	39	51.38%	55.72%	54.99%
SRS	82%	81%	21	21	23.61%	22.01%	22.14%
GWPORS	84%	84%	53	40	19.56%	20.45%	20.13%
MPORS	69%	71%	18	16	52.78%	45.65%	44.29%
FURS	80%	82%	9	8	57.67%	37.79%	36.88%
VFCA*	85%	87%	5	4	5% of premium taxes	\$899,555	\$913,824

* The actual contributions for the fiscal year ending 2019 and 2020 were \$2,370,454 and \$2,486,772, respectively.



PERS DCRP Long Term Disability Plan

	July 1, 2019 Valuation	July 1, 2020 Valuation
Total Normal Cost Rate	0.30%	0.29%
Rate to Amortize UAL	<u>0.00%</u>	<u>0.01%</u>
Statutory Funding Rate	0.30%	0.30%
Actuarial Accrued Liability	\$4,896,028	\$5,202,583
Actuarial Value of Assets (Market Value)	\$5,137,296	\$5,753,289
Unfunded Accrued Liability	(\$241,268)	(\$550,706)
Funded Ratio	104.93%	110.59%
Amortization Period	0 Years	0 Years
30-Year Funding Rate	0.29%	0.28%



Pub-2010 Mortality Tables



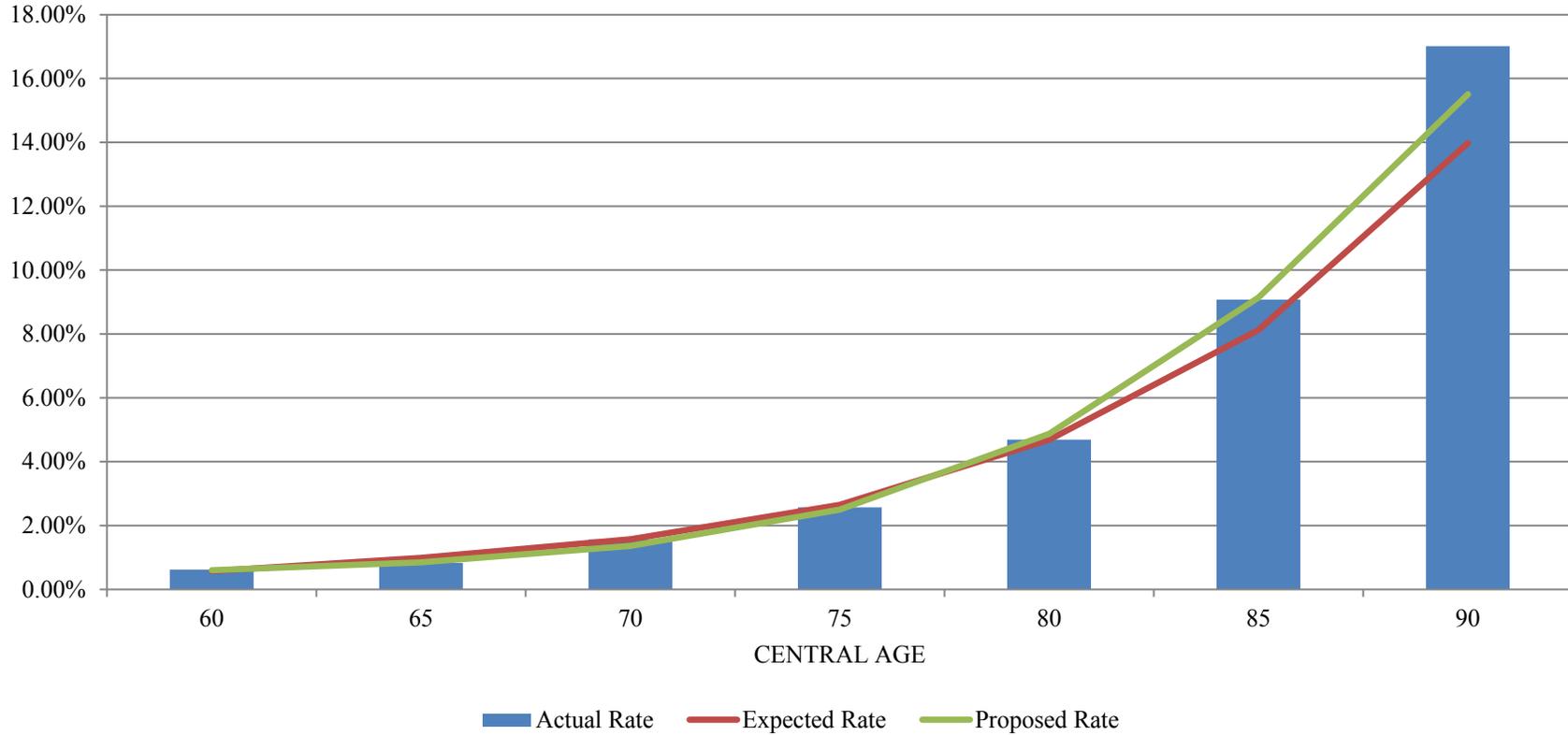
- “...study has been based includes approximately 46 million life-years of exposure and 580 thousand deaths from public pension systems across the United States. Data were received from a total of 35 different public pension systems that collectively submitted information for 78 plans...”
- “The Committee encourages all stakeholders in the financial viability of U.S. public-sector retirement plans to carefully review the findings presented in this report. The Pub-2010 tables should be considered as part of the relevant “assumption universe” described in Actuarial Standard of Practice No. 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations (ASOP 35) for the measurement of public plan obligations [ASB 2014]. In conjunction with knowledge of the individual characteristics and recent experience of the covered group, actuaries could use the Pub-2010 tables (possibly blended or otherwise adjusted using appropriate credibility techniques) as relevant benchmarks for the development of the ASOP 35 assumption universe for mortality.”



Pub-2010 Mortality Tables



Mortality Experience - Service Retirements Males

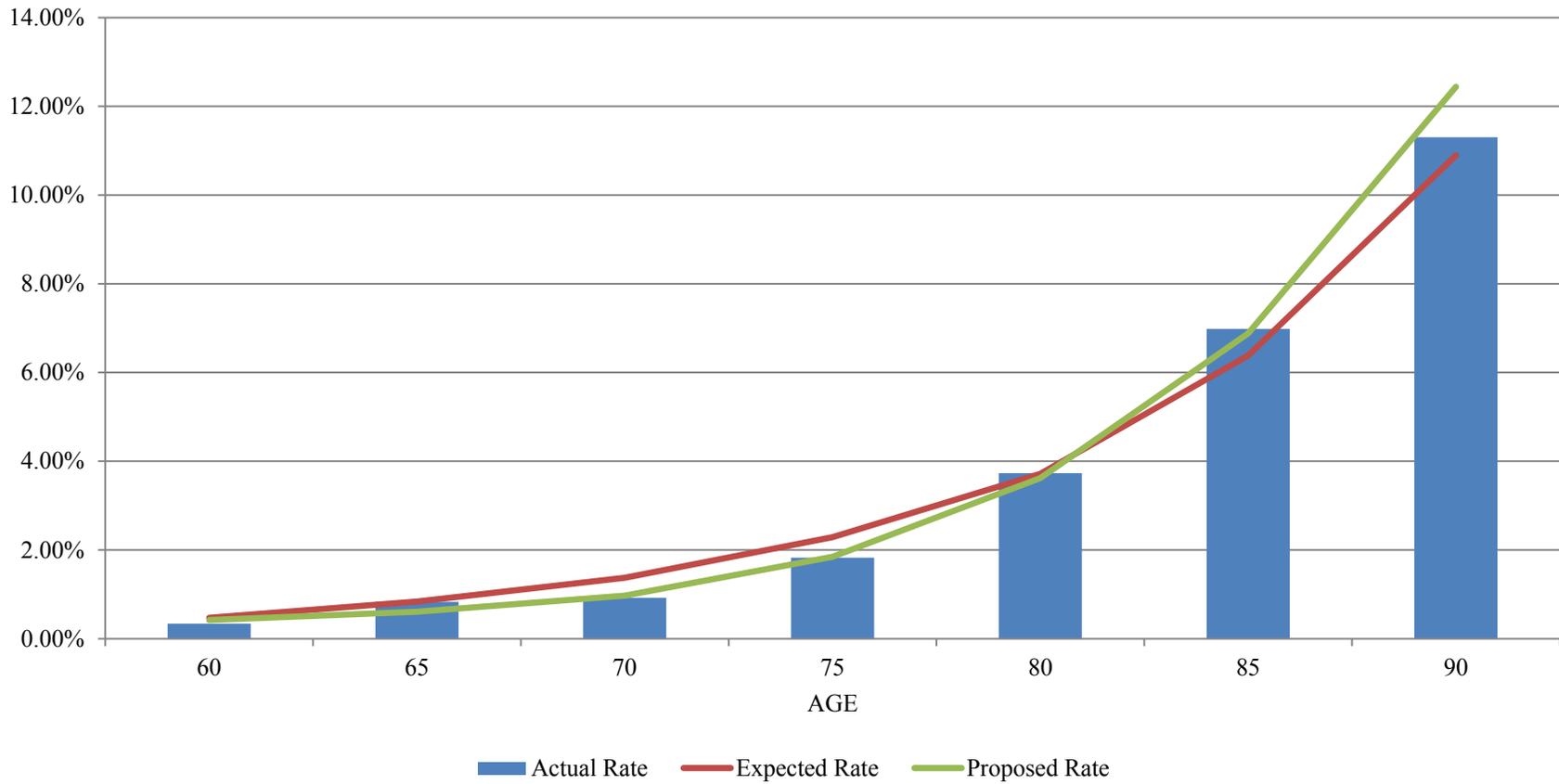




Pub-2010 Mortality Tables



Mortality Experience - Service Retirements Females





Pub-2010 Mortality Tables



	July 1, 2020 Valuation	July 1, 2020 Valuation (Pub-2010 Mortality)	Change
Total Normal Cost Rate	9.81%	10.12%	0.31%
Administrative Expense Load	0.28%	0.28%	0.00%
Rate to Amortize UAL	6.64%	6.33%	(0.31%)
Transfer to DB Education Fund	<u>0.04%</u>	<u>0.04%</u>	<u>0.00%</u>
Statutory Funding Rate*	16.77%	16.77%	0.00%
Actuarial Accrued Liability	\$8.234.0 million	\$8.353.4 million	\$119.4 million
Actuarial Value of Assets	\$6,099.4 million	\$6,099.4 million	\$0.0 million
Unfunded Accrued Liability	\$2,134.6 million	\$2,254.0 million	\$119.4 million
Funded Ratio	74.08%	73.02%	(1.06%)
Amortization Period*	35 Years	45 Years	10 Years

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