Montana Public Employees' Retirement Board

Valuation Results
June 30, 2017

Presented November 14, 2017
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Benefit Financing

- Basic Retirement Funding Equation

$$C + I = B + E$$

C = Contributions
I = Investment Income
B = Benefits Paid
E = Expenses (administration)

Participation in MPERA

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

- 42,965 Active Employees Including DC and 457 Members
- 25,987 Retirees & Beneficiaries (DB)
- 22,498 Inactive (DB)

- 557 Employers (DB, DC & 457)
- 244 Volunteer Fire Departments

Experience Study Changes

- 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 Changes:

- General Wage Increase was reduced from 4.00% to 3.50%
- Investment Return was reduced from 7.75% to 7.65%
- Price Inflation was reduced from 3.00% to 2.75%
- Interest on member accounts was lowered from 3.50% to 2.75%
- Administrative Expense was reduced from 0.27% to 0.26%

Demographic Assumptions Changes:

- Pre and Post- retirement non disabled mortality assumption was updated
- Withdrawal rates were updated for all systems except for JRS and HPORS
- Merit scale was updated for all systems except for HPORS

Results:

- Funded ratios decreased for all systems except for JRS and VFCA
- Amortization periods decreased for all systems except for PERS, FURS and HPORS. The amortization periods for both GWPORS and HPORS exceed 30 years. Both SRS and GWPORS now amortize.

Comments on Valuation for PERS

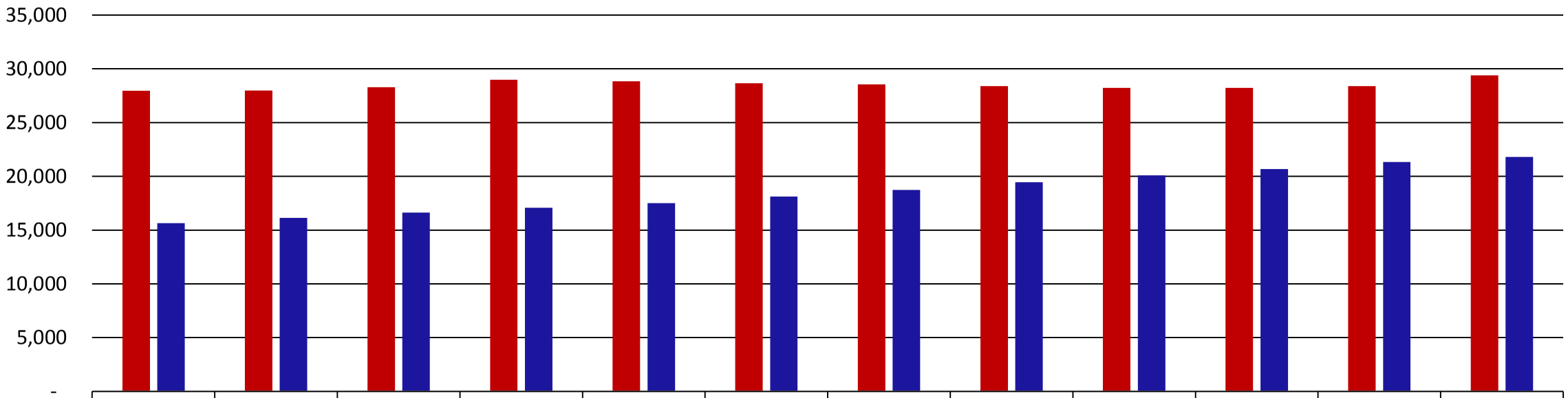
- Asset returns
  - Market asset returns averaged 11.93% vs. 7.75% expected (4.18% greater than expected).
  - Actuarial asset returns averaged 8.08% vs. 7.75% expected (0.33% greater than expected).
- Funded Ratio
  - Funding decreased from 77.31% to 72.76% with new assumptions.
- Amortization Period
  - Amortization period increased from 26 years to 30 years with new assumptions.

Experience Study Impacts for PERS

Changes in the Unfunded Actuarial Accrued Liability (UAAL)

June 30, 2016 Valuation UAAL	$1,540,237,844
Normal Cost	134,084,370
Contributions	(233,062,661)
Interest	120,728,794
Expected June 30, 2017 UAAL	$1,561,988,347
Experience Loss on Actuarial Liabilities	$153,660,023
Experience Gain on Actuarial Assets	(17,158,953)
Assumption & Method Changes	365,868,776
Plan Changes	0
Total Gain	$502,369,846
June 30, 2017 Valuation UAAL	$2,064,358,193

PERS Active and Retired Membership



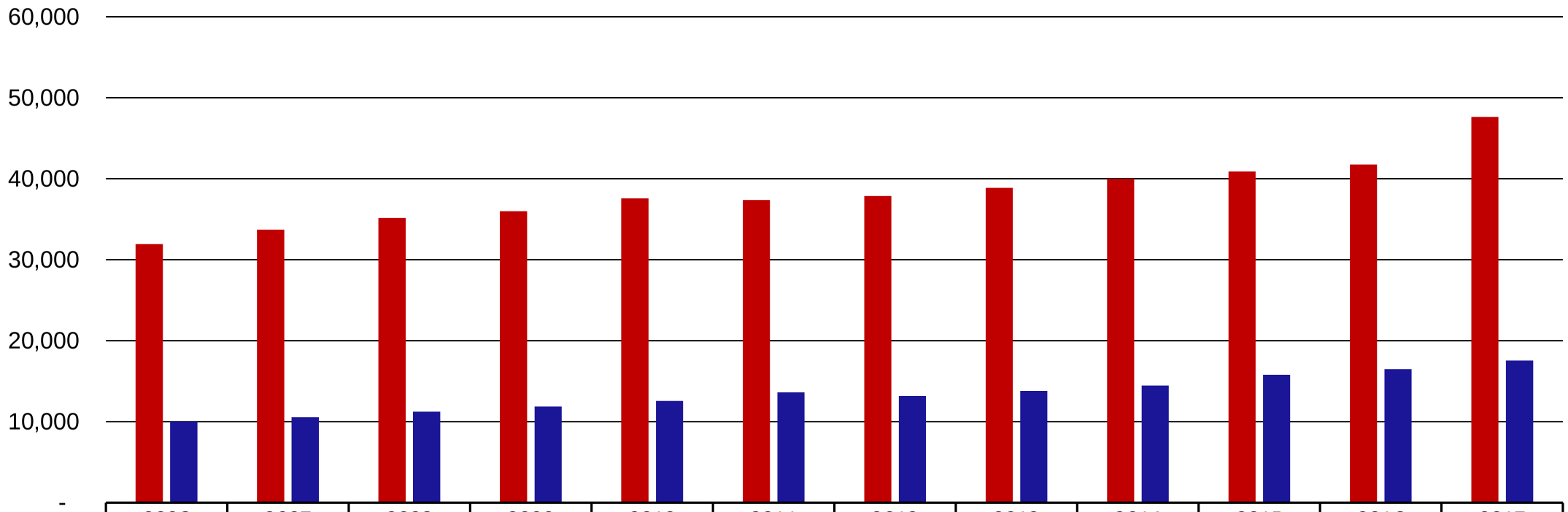
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Active	27,962	27,977	28,293	28,983	28,834	28,659	28,548	28,401	28,229	28,237	28,390	29,395
Retirees	15,654	16,137	16,627	17,075	17,512	18,123	18,738	19,451	20,081	20,681	21,333	21,805

0.42% annual increase for active members since 2008; 3.54% increase for 2017.

3.06% annual increase for retired members since 2008; 2.21% increase for 2017.

0.59 retirees per active 9 years ago; 0.74 retirees per active now.

PERS Average Salary and Benefits

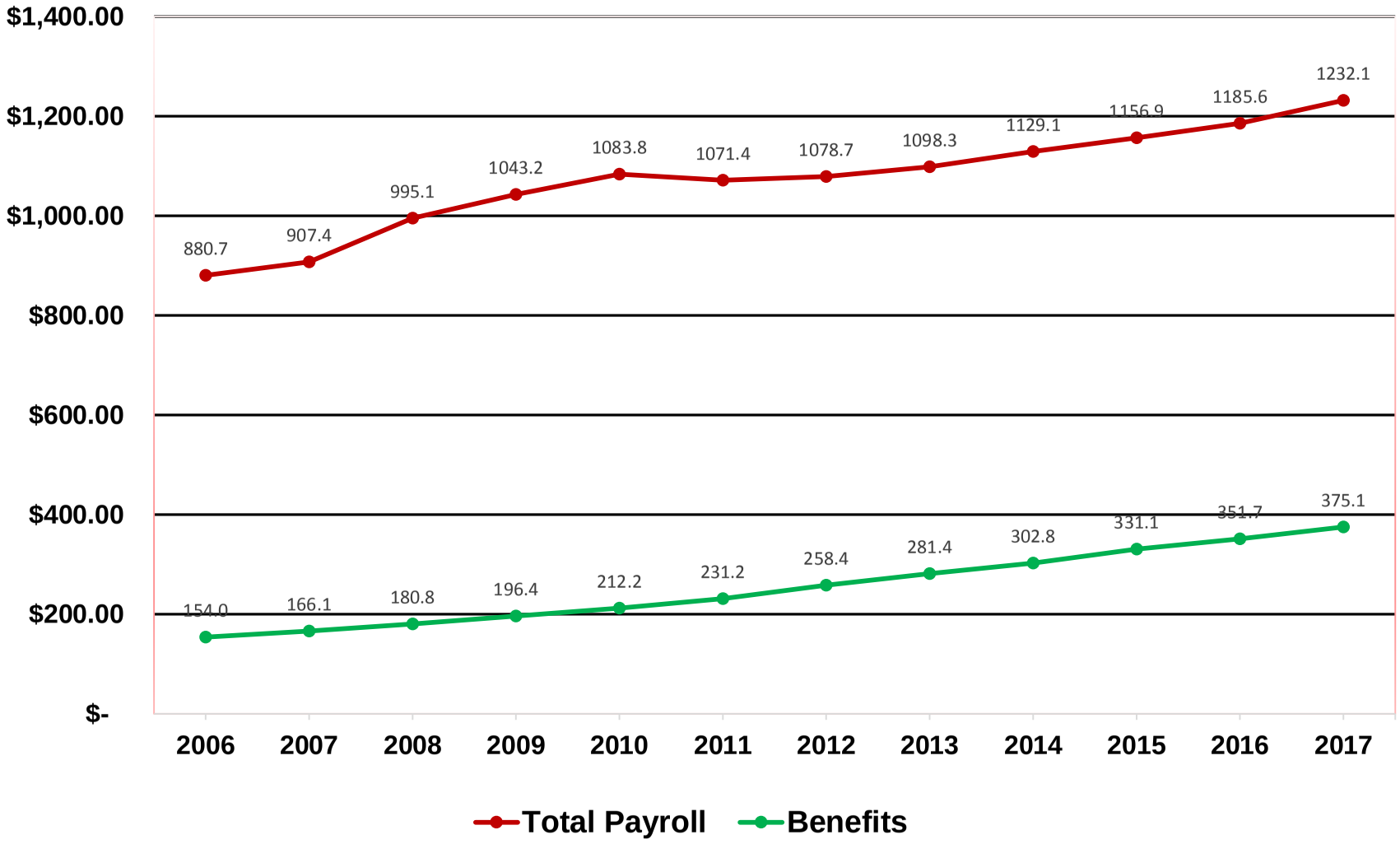


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Actives	31,930	33,716	35,172	35,994	37,587	37,384	37,876	38,872	39,998	40,899	41,763	47,628
Retirees Benefits	10,029	10,547	11,231	11,884	12,575	13,625	13,177	13,794	14,470	15,782	16,487	17,543

2.0% annual increase for average salary since 2008; 0.4% increase for 2017.

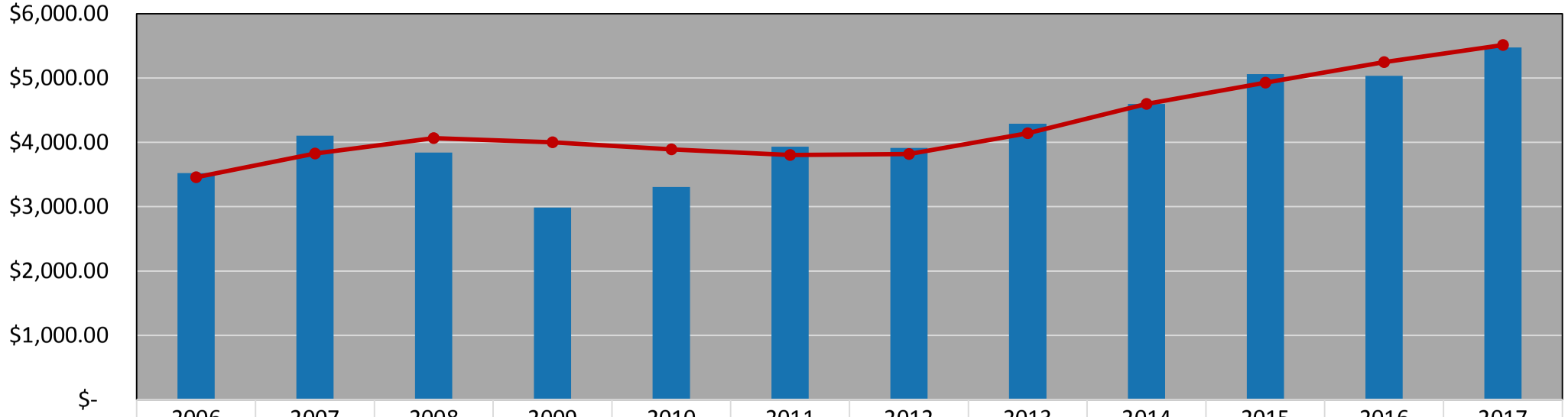
4.9% annual increase for average benefits since 2008; 2.7% increase for 2017.

PERS Payroll & Benefits
($ Millions)



PERS Assets

(in Millions)

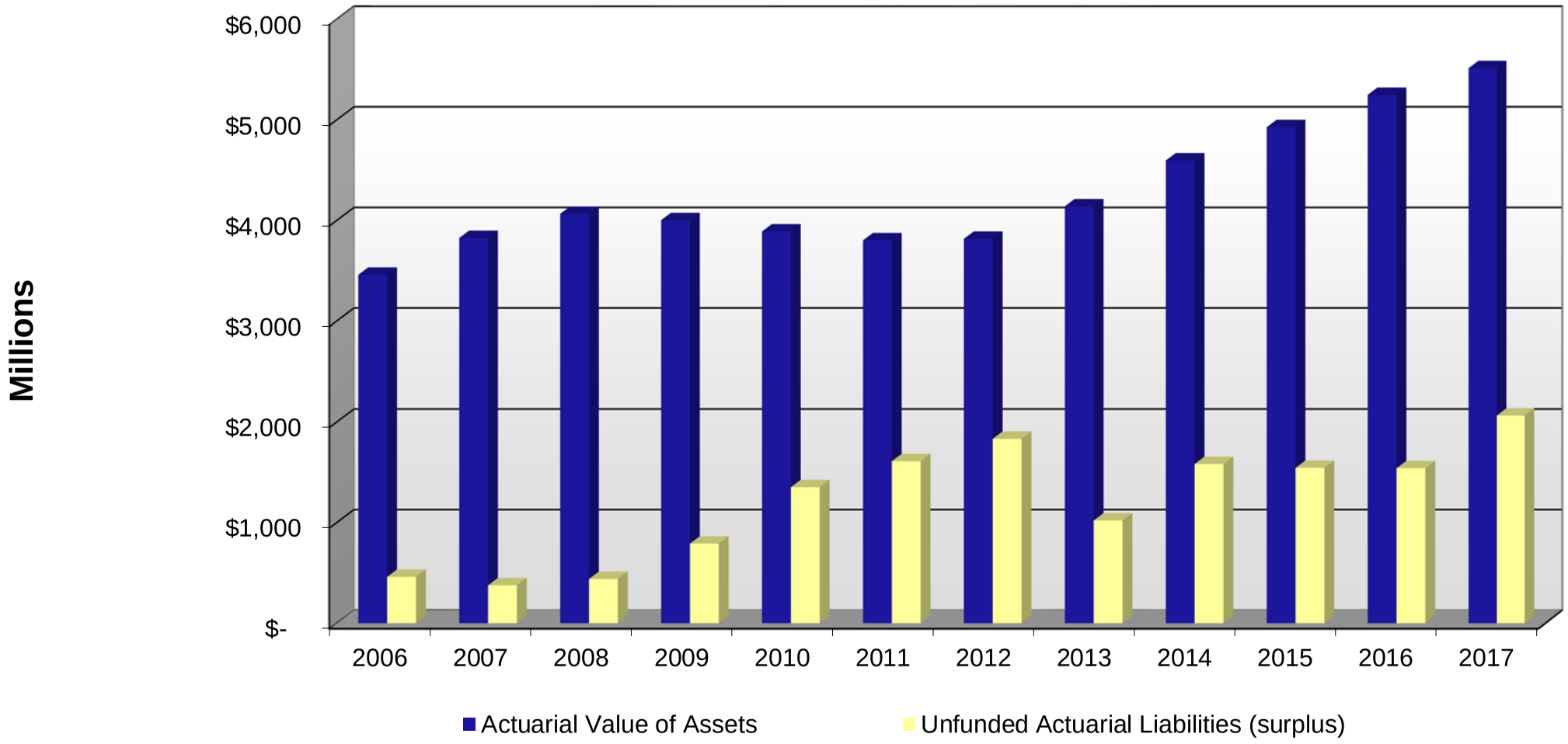


	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Market Value	$3,520.00	$4,102.00	$3,841.00	$2,988.00	$3,304.00	$3,933.00	$3,913.00	$4,290.00	$4,596.00	$5,061.00	$5,033.00	$5,473.00
Actuarial Value	$3,459.00	$3,825.00	$4,065.00	$4,002.00	$3,890.00	$3,801.00	$3,817.00	$4,140.00	$4,596.00	$4,927.00	$5,248.00	$5,514.00

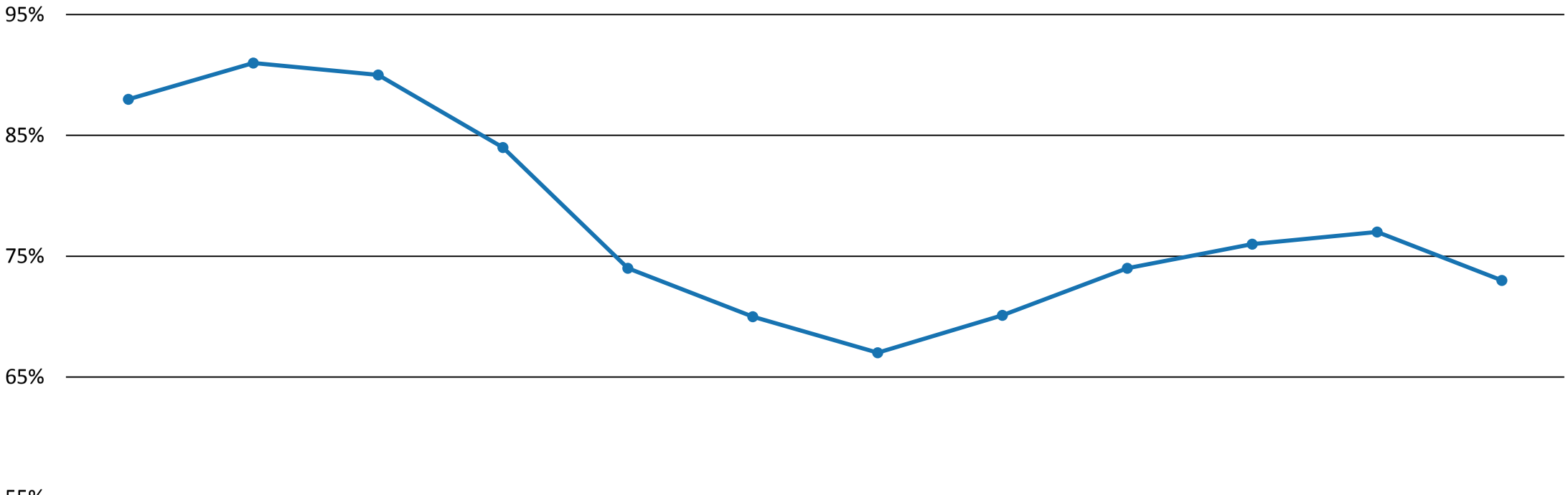
Market Value Actuarial Value

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Market Return	**9.00%**	**17.90%**	**(4.90%)**	**(20.90%)**	**12.90%**	**21.70%**	**2.30%**	**13.00%**	**17.10%**	**4.60%**	**2.00%**	**11.90%**
Actuarial Return	**9.30%**	**11.90%**	**7.60%**	**(0.20%)**	**(1.20%)**	**(0.10%)**	**3.30%**	**11.90%**	**13.20%**	**9.60%**	**9.30%**	**8.10%**

Actuarial Assets vs UAAL

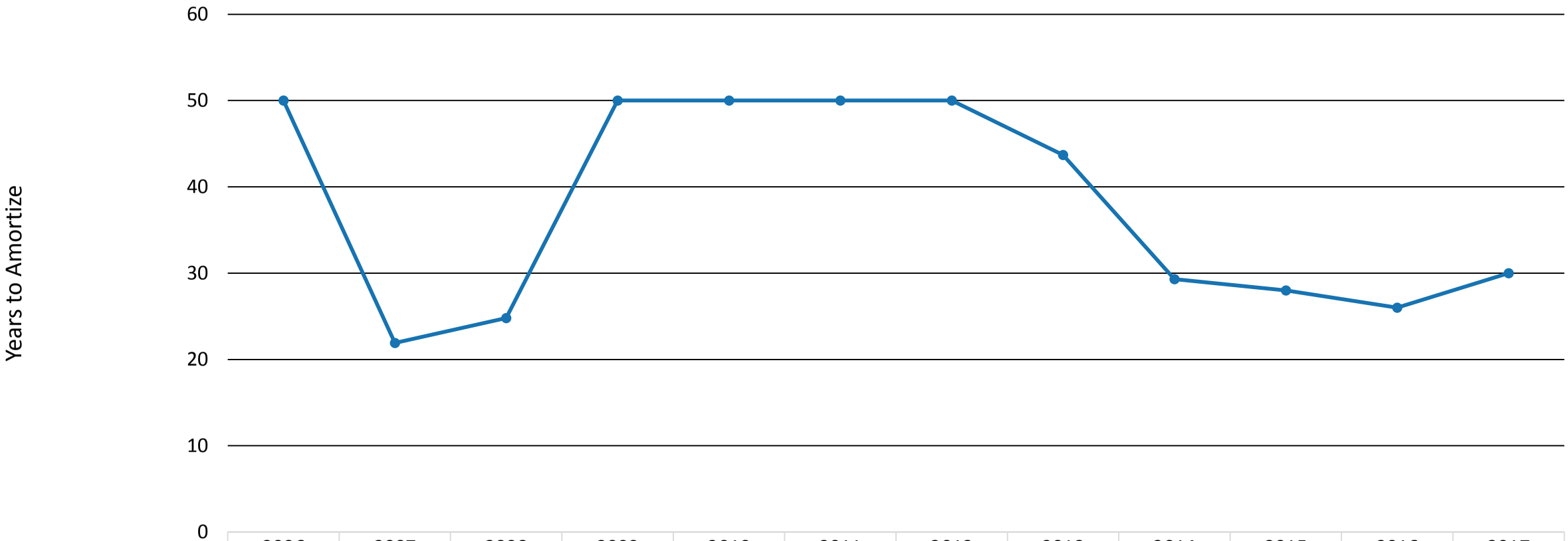


Funded Ratio of PERS



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Funded Ratio	88%	91%	90%	84%	74%	70%	67%	70%	74%	76%	77%	73%

Amortization Period for PERS



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Amortization Period	50	21.9	24.8	50	50	50	50	43.7	29.3	28	26	30

50 years = Does not Amortize

Historical Cash Flow (in Millions)

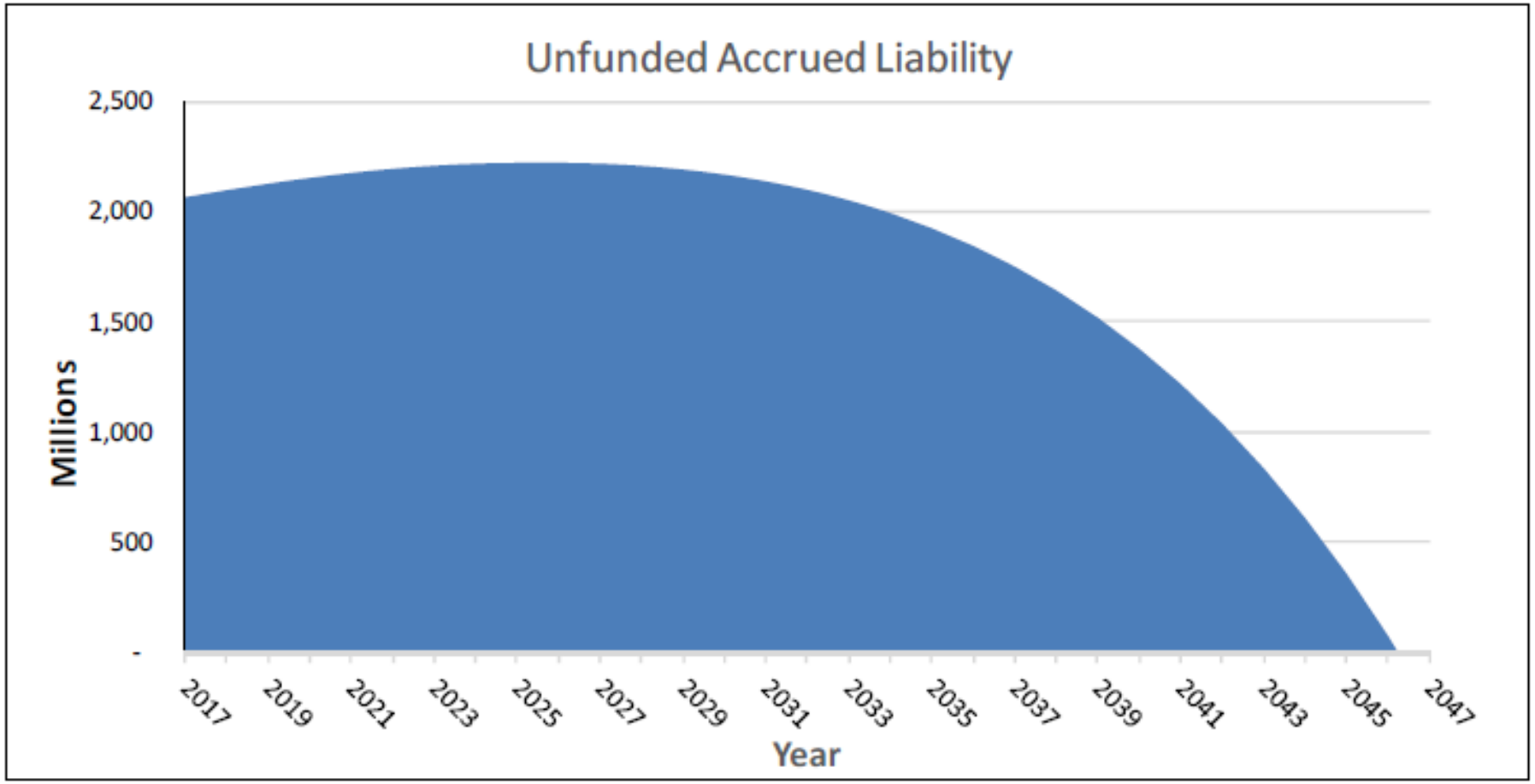
PERS Funding Results

	July 1, 2016 Valuation	July 1, 2017 Valuation
Total Normal Cost Rate	11.34%	9.86%
Administrative Expense Load	0.27%	0.26%
Rate to Amortize UAL	4.72%	6.31%
Transfer to DB Education Fund	0.04%	0.04%
Statutory Funding Rate	16.37%	16.47%
Actuarial Accrued Liability	$6,788.0 million	$7,578.4 million
Actuarial Value of Assets	$5,247.7 million	$5,514.0 million
Unfunded Accrued Liability	$1,540.3 million	$2,064.4 million
Funded Ratio	77.31%	72.76%
Amortization Period	26 Years	30 Years

Valuation Results-Other Plans

System	Funded Ratio 2016	Funded Ratio 2017	Amortization Period 2016	Amortization Period 2017	Statutory Rate 2016	Statutory Rate 2017	30-Year Funding Rate 2016	30-Year Funding Rate 2017
JRS	166%	167%	0	0	32.81%	32.81%	(3.43%)	(6.04%)
HPORS	66%	64%	28	37	51.38%	51.38%	50.20%	54.02%
SRS	83%	81%	Does not amortize	25	19.36%	23.61%	22.75%	22.82%
GWPORS	84%	81%	Does not amortize	70	19.56%	19.56%	21.64%	20.73%
MPORS	69%	69%	18	16	52.78%	52.78%	45.79%	44.58%
FURS	78%	76%	9	10	57.67%	57.67%	39.02%	40.28%
VFCA	80%	81%	7	6	5% of premium taxes		$1,109,996	$915,642

Progress toward 100% Funding



Projected UAAL- Level % of Pay