



North Dakota Public Employees Retirement System

Actuarial Valuation as of July 1, 2013

Discussion of Valuation Results and Projections

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Discussion Topics

- Summary of Valuation Highlights
- Membership and Demographics
- Valuation Results and Projections

Actuarial Methods

- Asset valuation method (actuarial value of assets)
 - Smoothing of investment gains or losses
 - PERS uses a five-year smoothing method
 - Investment returns above or below the expected return are recognized over five years
 - No market value corridor is applied (i.e., actuarial value must fall within 80% to 120% of market value)
- Cost method
 - Allocation of liability between past service and future service
 - PERS uses the entry age normal cost method (as do most retirement systems)
 - Retiree Health Insurance Credit Fund uses the projected unit credit cost method
- Amortization method
 - 20-year “open” period to pay off unfunded actuarial accrued liability
 - Based on level percentage of payroll
 - Governmental Accounting Standards Board requires 30-year maximum period to determine the Annual Required Contribution
 - An open amortization period will yield contributions that reduce the unfunded actuarial accrued liability, but will not pay it off

Economic Assumptions

➤ Interest Rate

- 8%

➤ Salary Increase Rates

- Based on service
- Ranges from 8.25% for new members to 4.86% for members with 5 or more years of service (5.0% for all years for Judges)

➤ Payroll Growth

- 4.5% (4.0% for Judges)

Summary of Valuation Highlights – PERS and HPRS

- Market value of assets returned 13.4% for year ending 6/30/13 (Segal estimated calculation)
 - Gradual recognition of deferred gains resulted in 3.9% return on actuarial assets
 - Unrecognized investment **gains** represent about 14.0% of market assets
- Net impact on funded ratio was a decrease from 65.1% (as of 7/1/2012) to 62.0% (as of 7/1/2013)
- Market value of combined assets for PERS and HPRS was \$2.015 billion vs. \$1.785 billion last year
- Combined actuarial value of assets for PERS and HPRS was \$1.732 billion vs. \$1.675 billion last year
- Total actuarial value of assets is 86.0% of market value of assets
- All investment losses from 2008 and 2009 plan years are now fully recognized. Remaining years' unrecognized appreciation or depreciation will be recognized in subsequent valuations

Summary of Valuation Highlights

	Changes in Statutory Contribution Rates	
	Member	Employer
Main System Full-Time Employees	6.00%	6.12%
Effective January 2014	7.00	7.12
Main System Part-Time Employees	12.12	N/A
Effective January 2014	14.12	N/A
Judges	7.00	16.52
Effective January 2014	8.00	17.52
Highway Patrol	12.30	18.70
Effective January 2014	13.30	19.70
National Guard	4.00	6.50
Effective January 2014	4.50	7.00
Law Enforcement (without Prior Service)	5.00	N/A
Effective January 2014	5.50	N/A
	Member Rate for Employees of Political Subdivisions	Member Rate for Employees of the BCI
Law Enforcement (with Prior Service)	5.00	6.00
Effective January 2014	5.50	6.00

Summary of Valuation Highlights

➤ Recommended employer contribution as a percent of payroll

	2013-2014	2012-2013	Statutory/ Approved 2013-2014
Main	12.14%	12.24%	6.12%-7.12%
Judges	16.66%	16.33%	16.52%-17.52%
National Guard	9.07%	7.40%	6.50%-7.00%
Law Enforcement (with Prior Service)	11.18%	10.69%	9.31%-9.81%*
Law Enforcement (without Prior Service)	8.11%	7.33%	7.43%-7.93%
Highway Patrol	25.11%	26.83%	18.70%-19.70%
Retiree Health	0.77%	0.90%	1.14%
Job Service	0.00%	0.00%	0.00%

*Rates shown are for employees of Political Subdivisions. The rate for employees of BCI is 10.31%.

➤ Funded Ratio (AVA)

	July 1, 2013	July 1, 2012
PERS	62.0%	65.1%
HPRS	68.2%	70.3%
Retiree Health	57.8%	51.9%
Job Service	114.9%*	104.3%

*Reflects a change in assumed investment return from 7.5% to 8.0%.

Membership – Main System

	2013	2012	Change
Active			
• Number	21,201	20,738	+2.2%
• Payroll*	\$865.9 mil	\$781.6 mil	+10.8%
• Average Age	47.1 years	47.1 years	+0.0 years
• Average Service	10.4 years	10.5 years	-0.1 years
Retirees and Beneficiaries**			
• Number	8,637	8,222	+5.0%
• Total Monthly Benefits	\$8.5 mil	\$ 7.9 mill	+7.6%
• Average Monthly Benefit	\$985	\$965	+2.1%

* This increase includes a change in our data processing methodology.

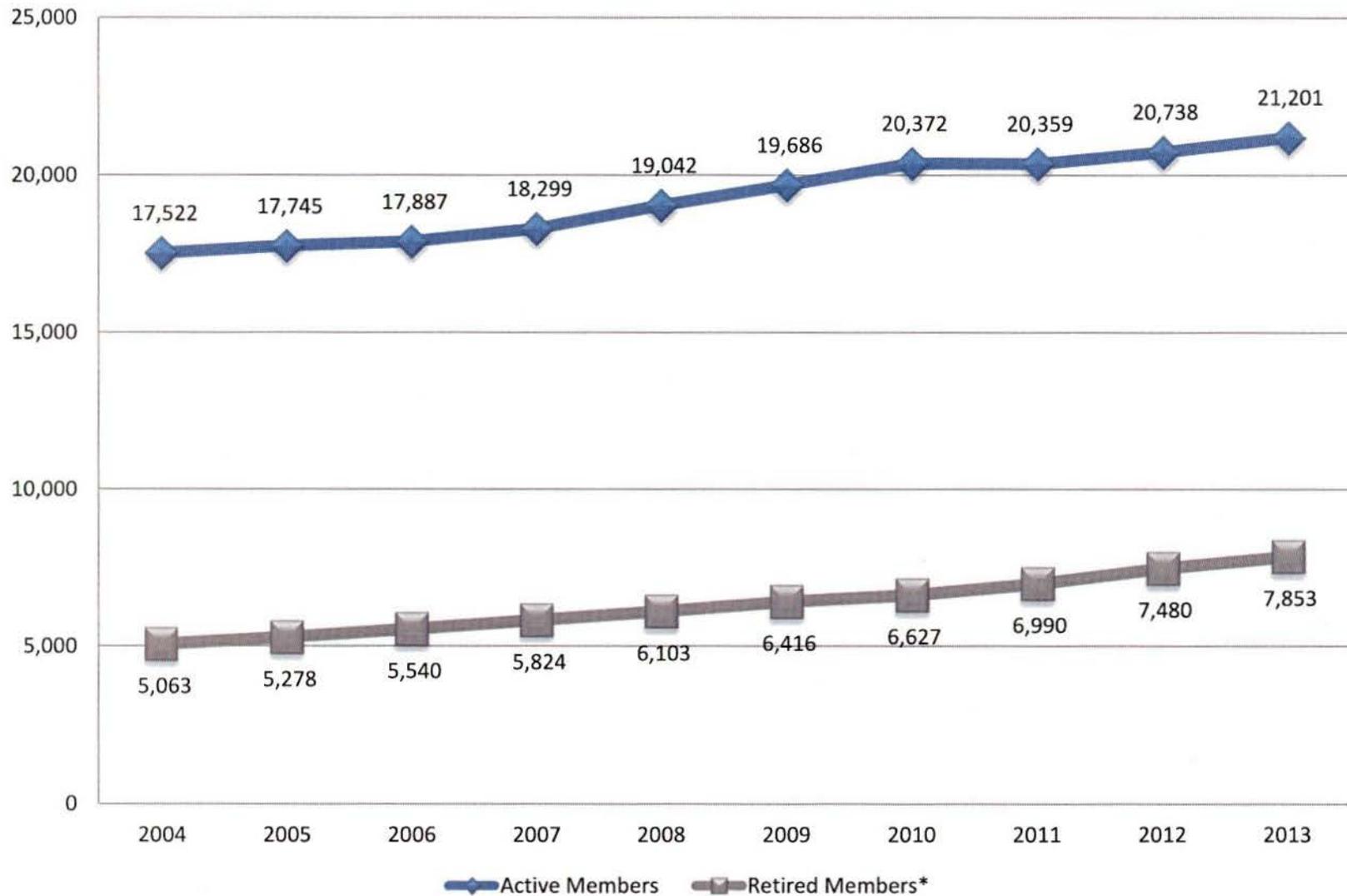
**Does not include 13 suspended retirees as of 2012 and 21 as of 2013.

Membership – PERS

	2013	2012	Change
Active			
• Number	21,588	21,091	+2.4%
• Payroll*	\$888.5 mil	\$800.9 mil	+10.9%
• Average Age	47.0 years	47.0 years	+0.0 years
• Average Service	10.4 years	10.3 years	+0.1 years
Retirees and Beneficiaries			
• Number	8,730	8,303	+5.1%
• Total Monthly Benefits	\$8.7 mil	\$8.1 mil	+7.4%
• Average Monthly Benefit	\$999	\$979	+2.1%

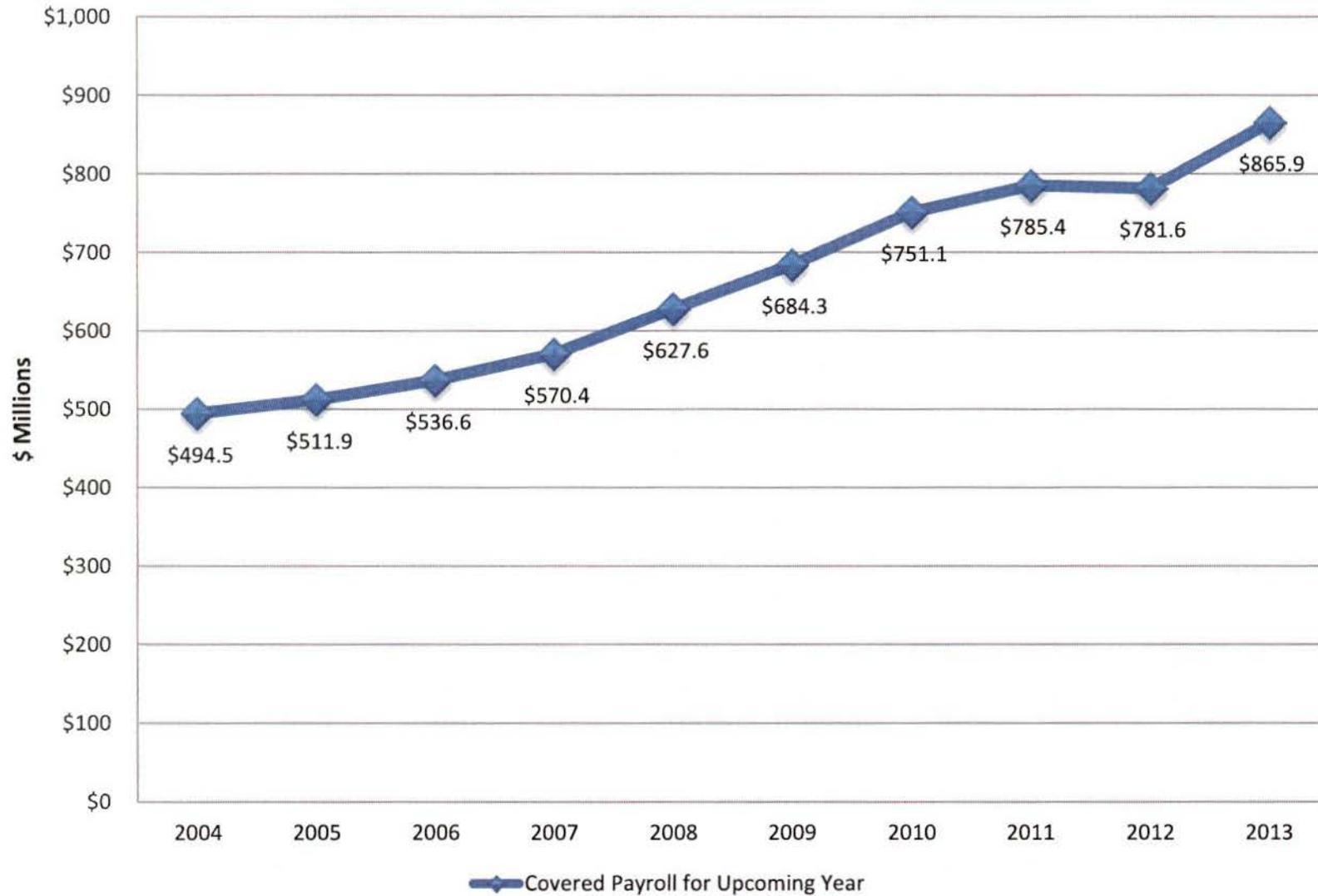
* This increase includes a change in our data processing methodology.

Active and Retired Membership – Main System

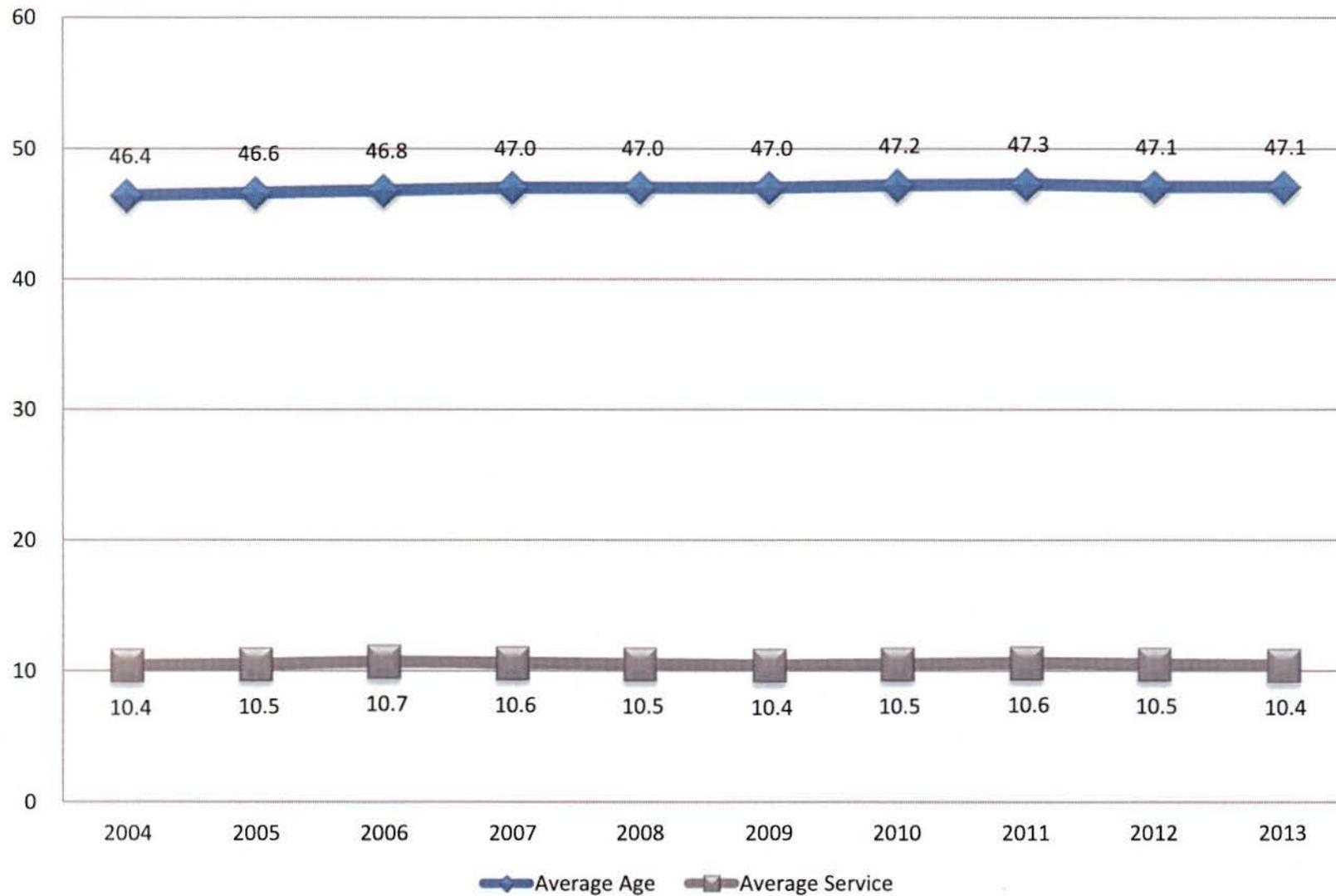


*Retired Members excludes beneficiaries.

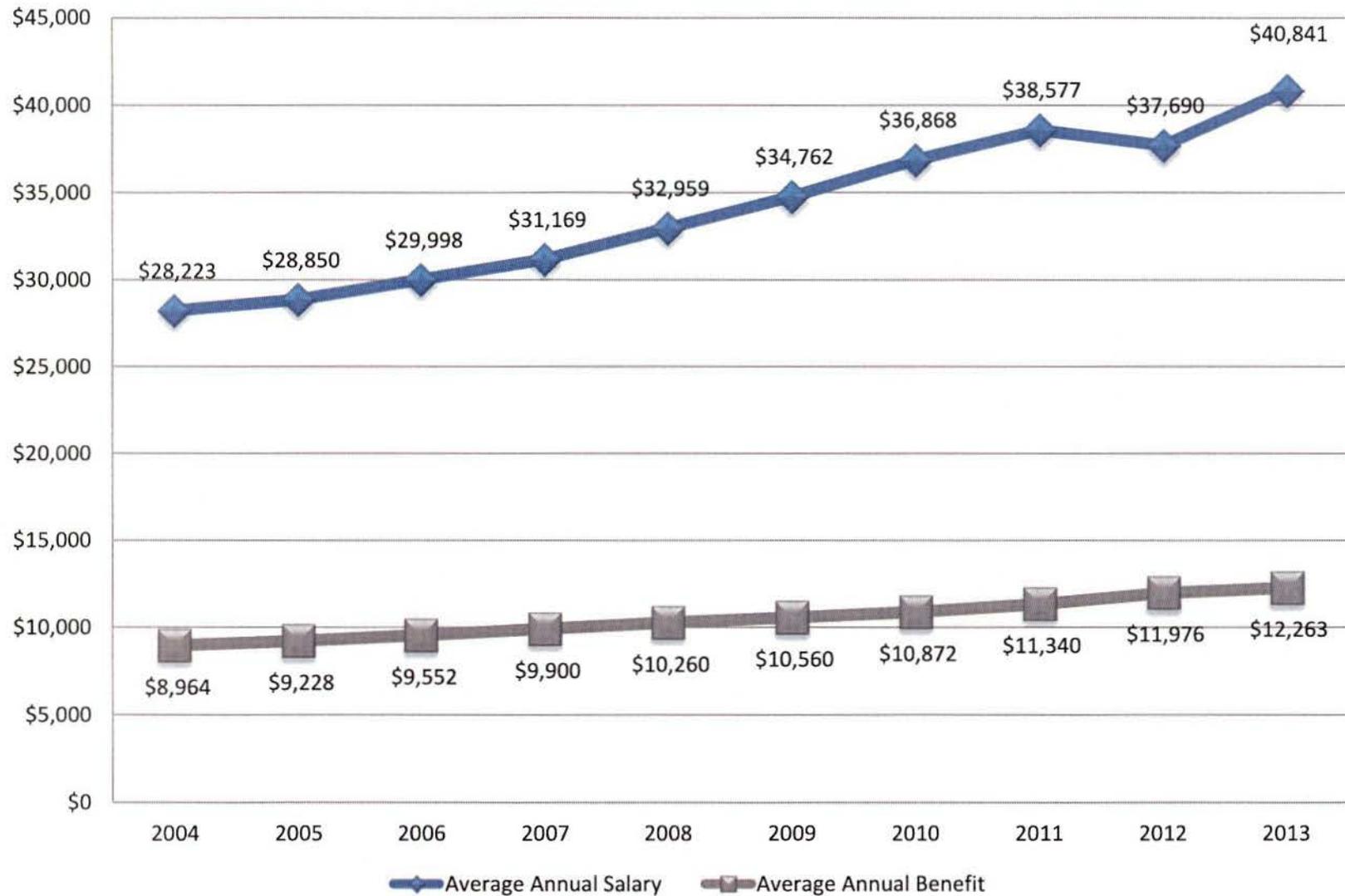
Active Payroll – Main System



Average Age and Service of Active Members – Main System



Average Salary and Average Benefit – Main System



Assets – PERS and HPRS

- The market value of assets increased from \$1.785 billion (as of June 30, 2012) to \$2.015 billion (as of June 30, 2013)
 - Segal determined the investment return was 13.41%, net of investment expenses
- The actuarial value of assets – which smooths investment gains and losses over five years – increased from \$1.675 billion (as of June 30, 2012) to \$1.732 billion (as of June 30, 2013)
 - Investment return of 3.93%, net of investment expenses
 - Actuarial value is 86.0% of market value
 - There is a total of \$283 million of deferred investment gains that will be recognized in future years
- The average annual return on market assets over the past 10 years is 6.8%
- The average annual return on actuarial assets over the past 10 years is 4.7%

Market Value of Assets (\$ in billions) – PERS and HPRS – Historical Returns

Year Ending June 30	Market Value	Actuarial Value
2004	16.65%	3.16%
2005	14.17	4.36
2006	12.04	7.79
2007	19.63	15.84
2008	(5.21)	8.51
2009	(24.05)	1.72
2010	13.25	1.48
2011	21.09	3.31
2012	(0.20)	(0.15)
2013	13.41	3.93

Market Value of Assets (\$ in billions) – PERS and HPRS

Fiscal Year Ending June 30, 2013	
Beginning of Year	\$1.785
Contributions:	
• Employer	0.050
• Member	0.048
• Service Purchases	0.008
• Total	0.106
Benefits, Expenses and Refunds	(0.115)
Investment Income (net)	0.239
End of Year	\$2.015
Rate of Return	+13.41%

Actuarial Value of Assets (\$ in billions) – PERS and HPRS

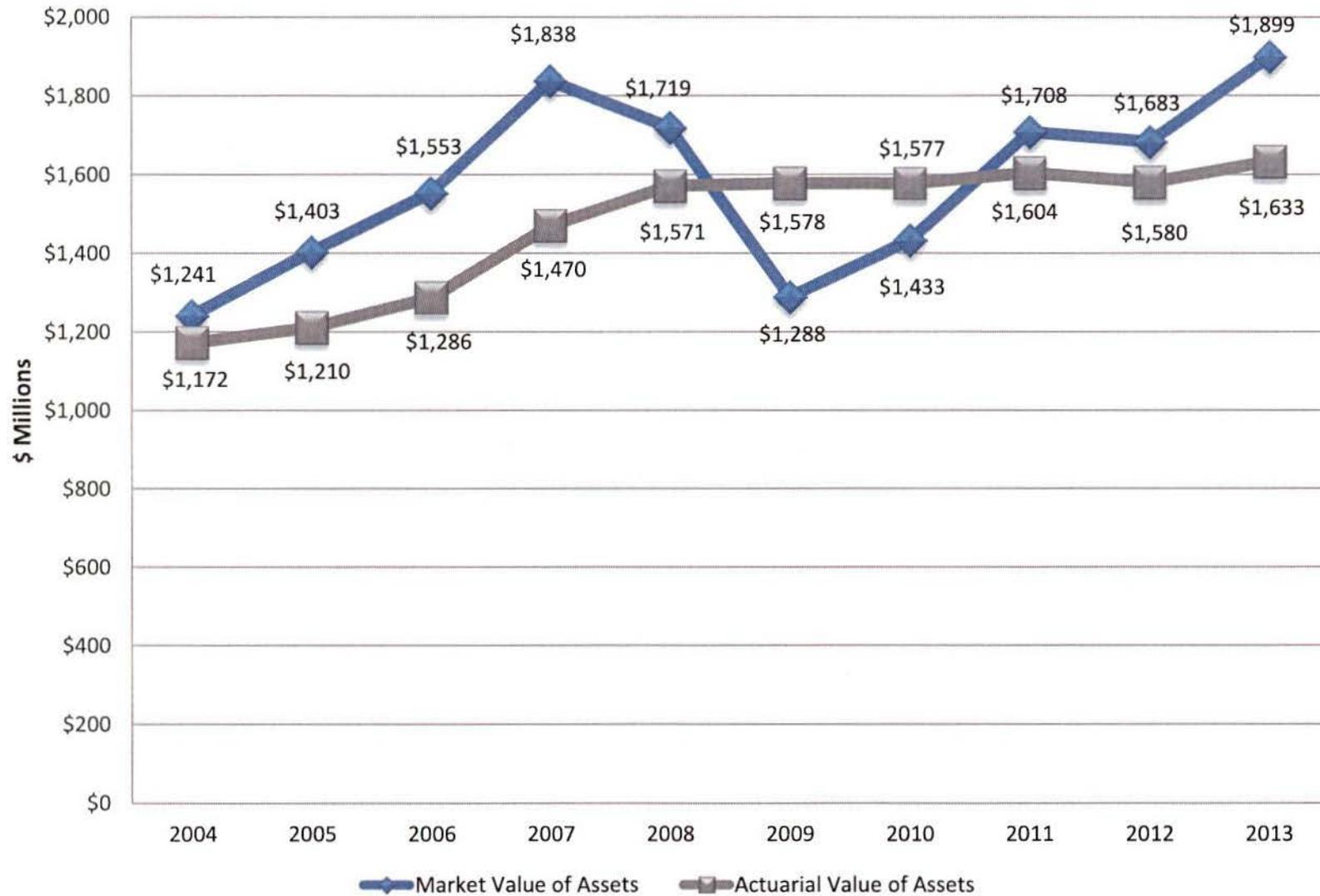
1. Market Value of Assets as of June 30, 2012	\$1.785
2. Contributions, Interest, Dividends, Benefits and Expenses	<u>0.029</u>
3. Preliminary Market Value as of June 30, 2013	\$1.814
4. Actual Market Value as of June 30, 2013	<u>2.015</u>
5. Excess/(Shortfall) Return for Year Ended June 30, 2013	\$0.201
Excess/(Shortfall) Returns:	

Year	Initial Amount	Deferral %	Unrecognized Amount
2013	\$0.201	80%	\$0.160
2012	(0.040)	60%	(0.024)
2011	0.289	40%	0.116
2010	0.153	20%	0.031
2009	(0.464)	0%	<u>0.000</u>
6. Total			\$0.283
7. Actuarial Value of Assets as of June 30, 2013: (4) - (6)			\$1.732
8. Actuarial Value of Assets as a % of Market Value of Assets			86.0%

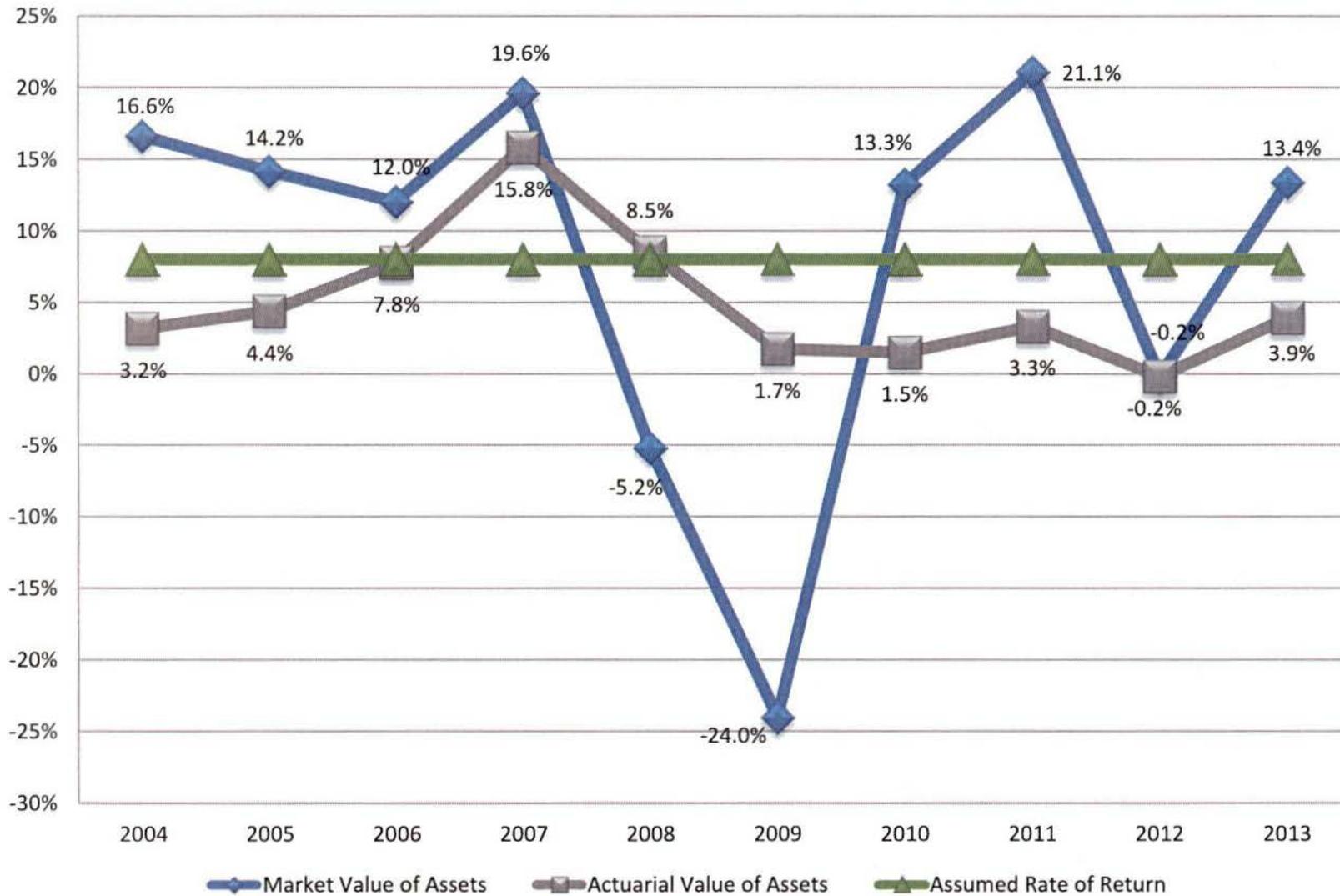
Market Value of Assets (\$ in billions) – Main System

Fiscal Year Ending June 30, 2013	
Beginning of Year	\$1.683
Contributions	0.100
Benefits, Refunds and Expenses	(0.109)
Investment Income (net)	0.225
End of Year	\$1.899
Rate of Return	+13.40%

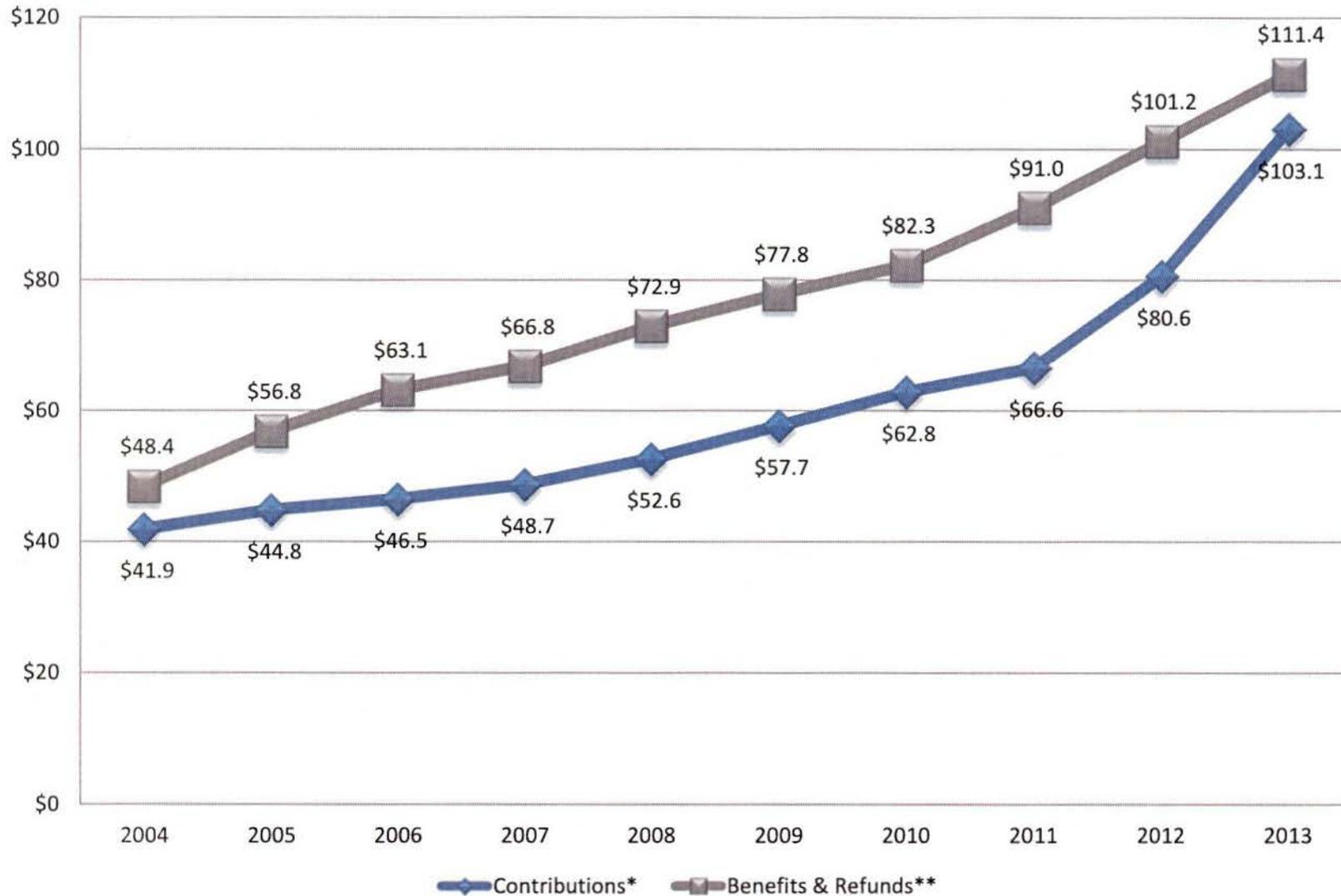
Market and Actuarial Values of Assets – Main System



Asset Returns – PERS and HPRS



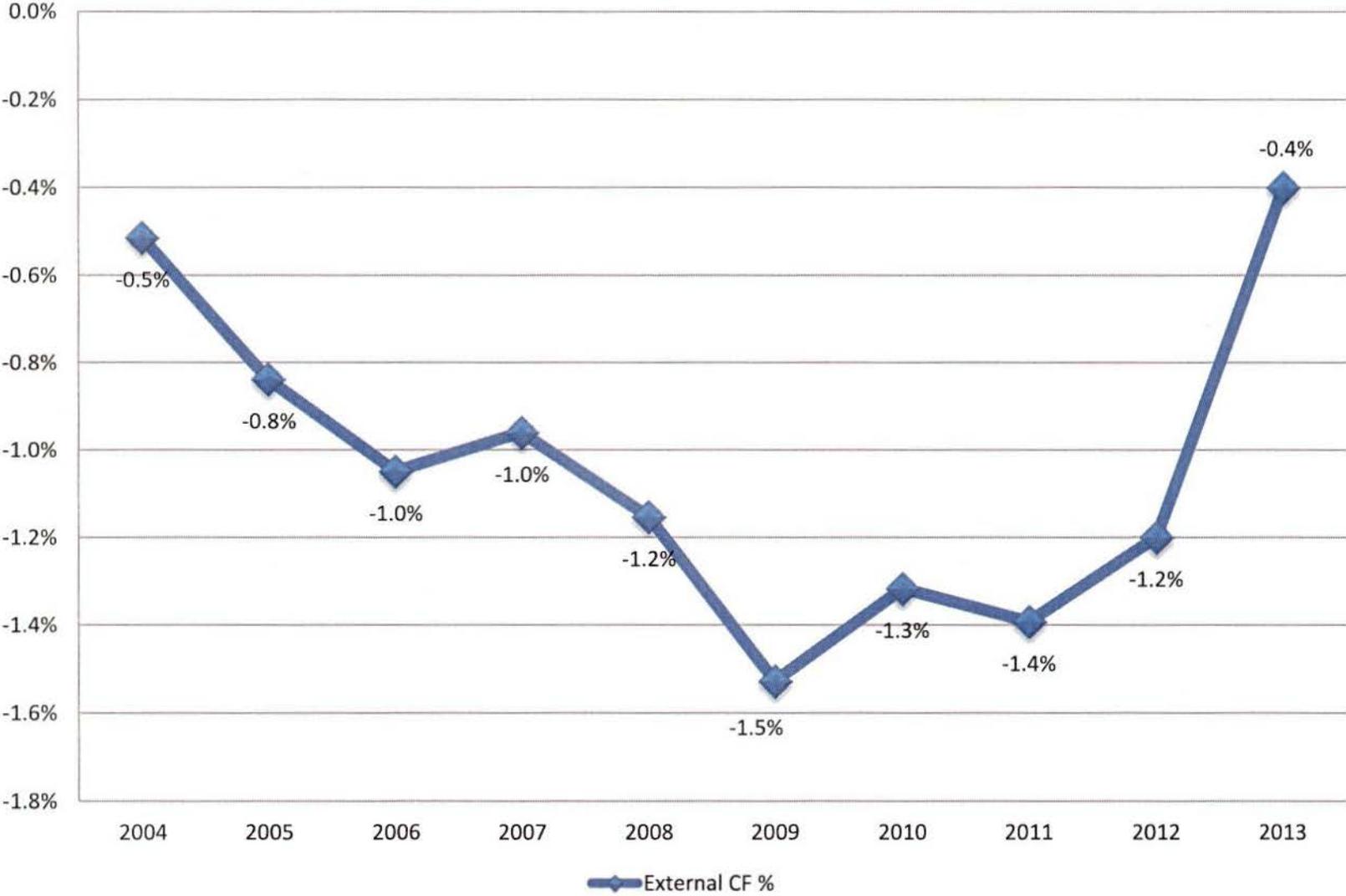
Contributions vs Benefits and Refunds – PERS



* Includes member and employer contributions, and service purchases

** Includes administrative expenses

External Cash Flow as a % of Market Value – PERS



Valuation Results (\$ in millions) – Main System

	July 1, 2013	July 1, 2012
Actuarial Accrued Liability:		
• Active Members	\$1,552	\$1,396
• Inactive Members	155	171
• Retirees and Beneficiaries	<u>944</u>	<u>875</u>
Total	\$2,651	\$2,442
Actuarial Assets	<u>1,633</u>	<u>1,580</u>
Unfunded Accrued Liability	\$1,018	\$862
Funded Ratio	61.6%	64.7%

Actuarially Recommended Contribution – Main System

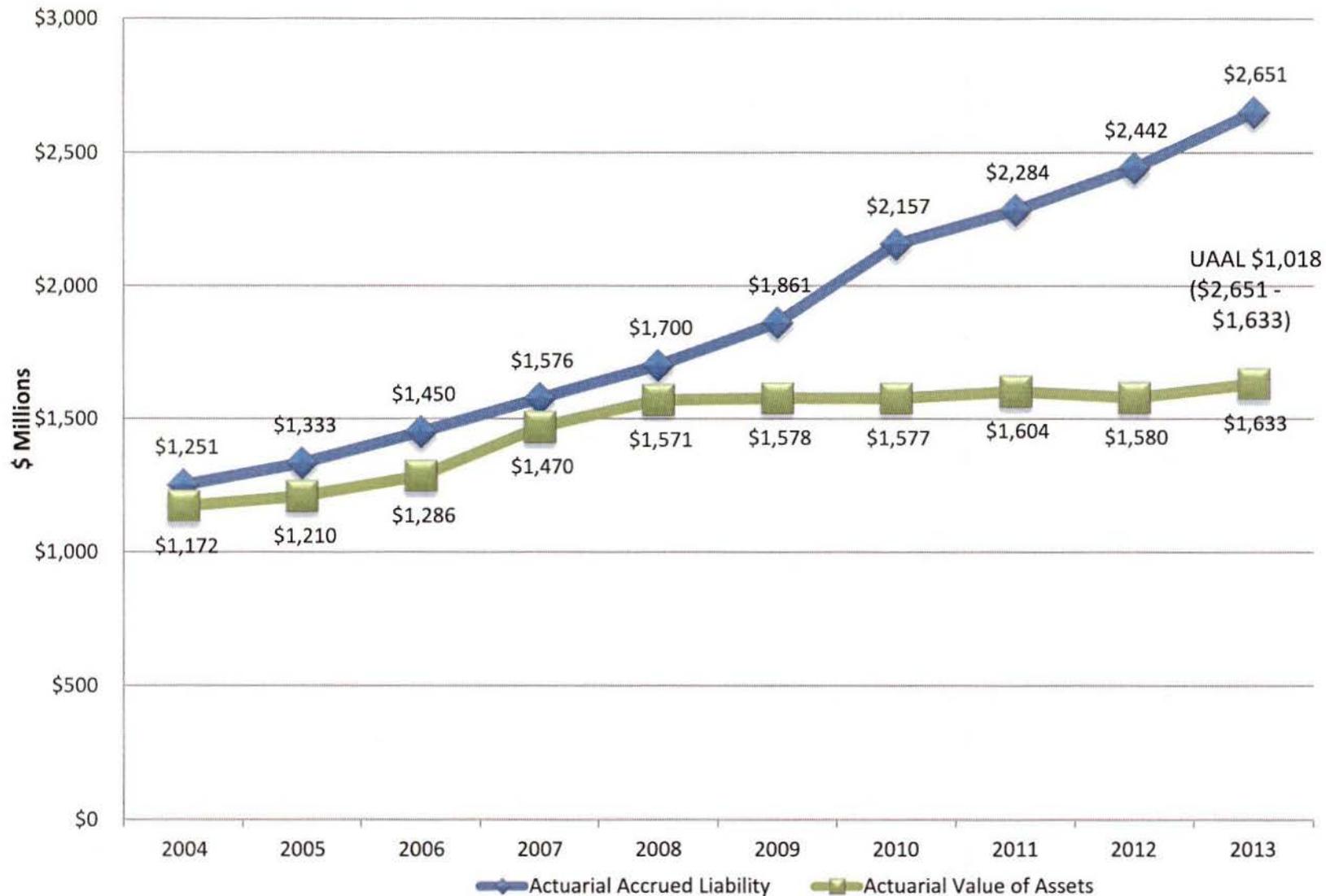
	July 1, 2013	July 1, 2012
Normal Cost Rate	10.31%	10.04%
Member Rate	<u>6.50%</u>	<u>5.50%</u>
Employer Normal Cost Rate	3.81%	4.54%
Amortization of UAAL	<u>8.33%</u>	<u>7.70%</u>
Actuarially Recommended Contribution	12.14%	12.24%
Employer Rate	6.12-7.12%	5.12-6.12%
Contribution Sufficiency/(Deficiency)	(4.52%)	(5.62%)

If the actuarially recommended contribution is calculated using the market value of assets, the ultimate contribution sufficiency/(deficiency) is (2.37%).

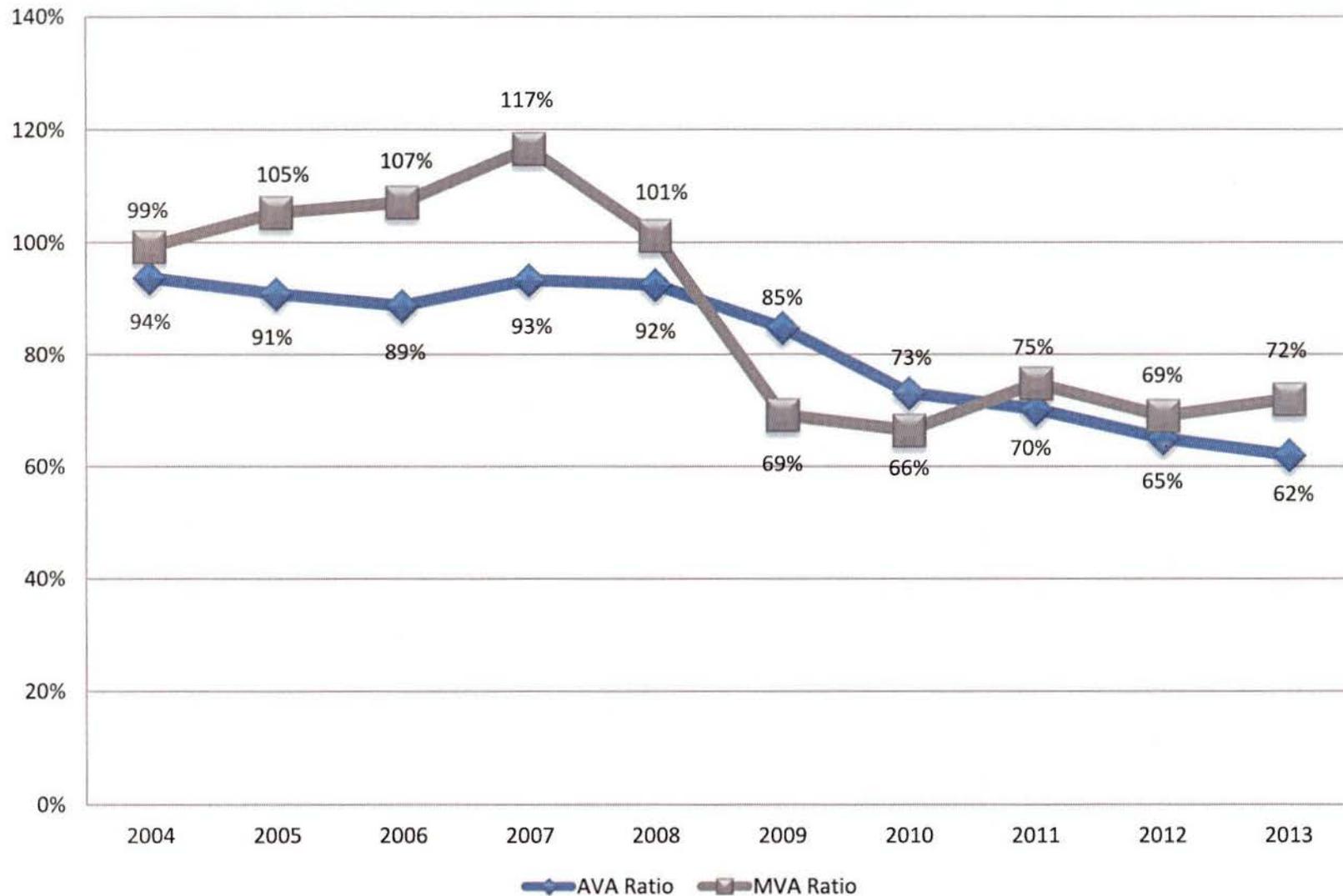
Valuation Results (\$ in millions) – PERS

	July 1, 2013	July 1, 2012
Actuarial Accrued Liability:		
• Active Members	\$1,591	\$1,430
• Inactive Members	969	173
• Retirees and Beneficiaries	<u>157</u>	<u>898</u>
Total	\$2,717	\$2,501
Actuarial Assets	<u>1,683</u>	<u>1,627</u>
Unfunded Accrued Liability	\$1,034	\$874
Funded Ratio	62.0%	65.1%

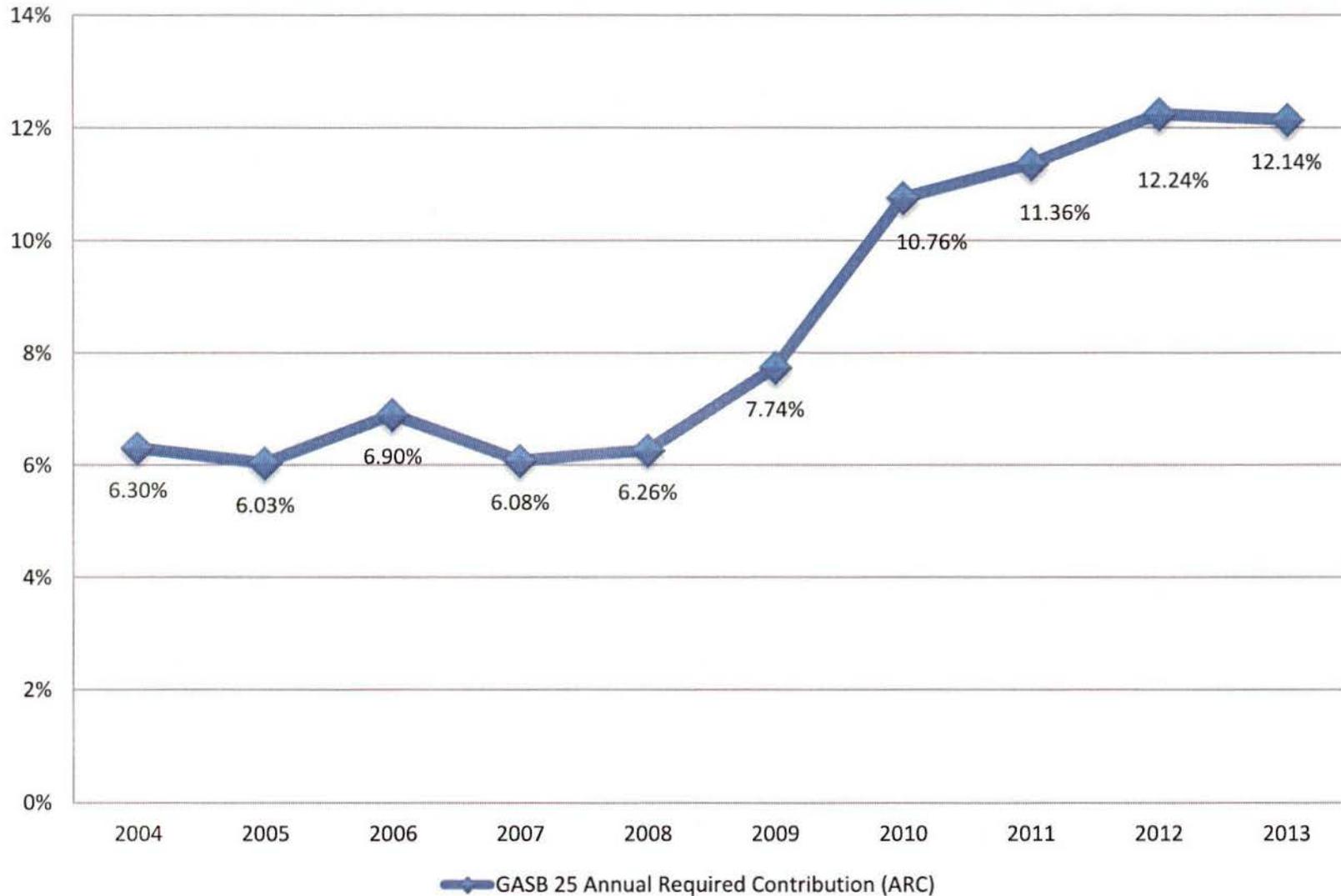
Actuarial Value of Assets and Actuarial Accrued Liability – Main System



Funded Ratios – Main System

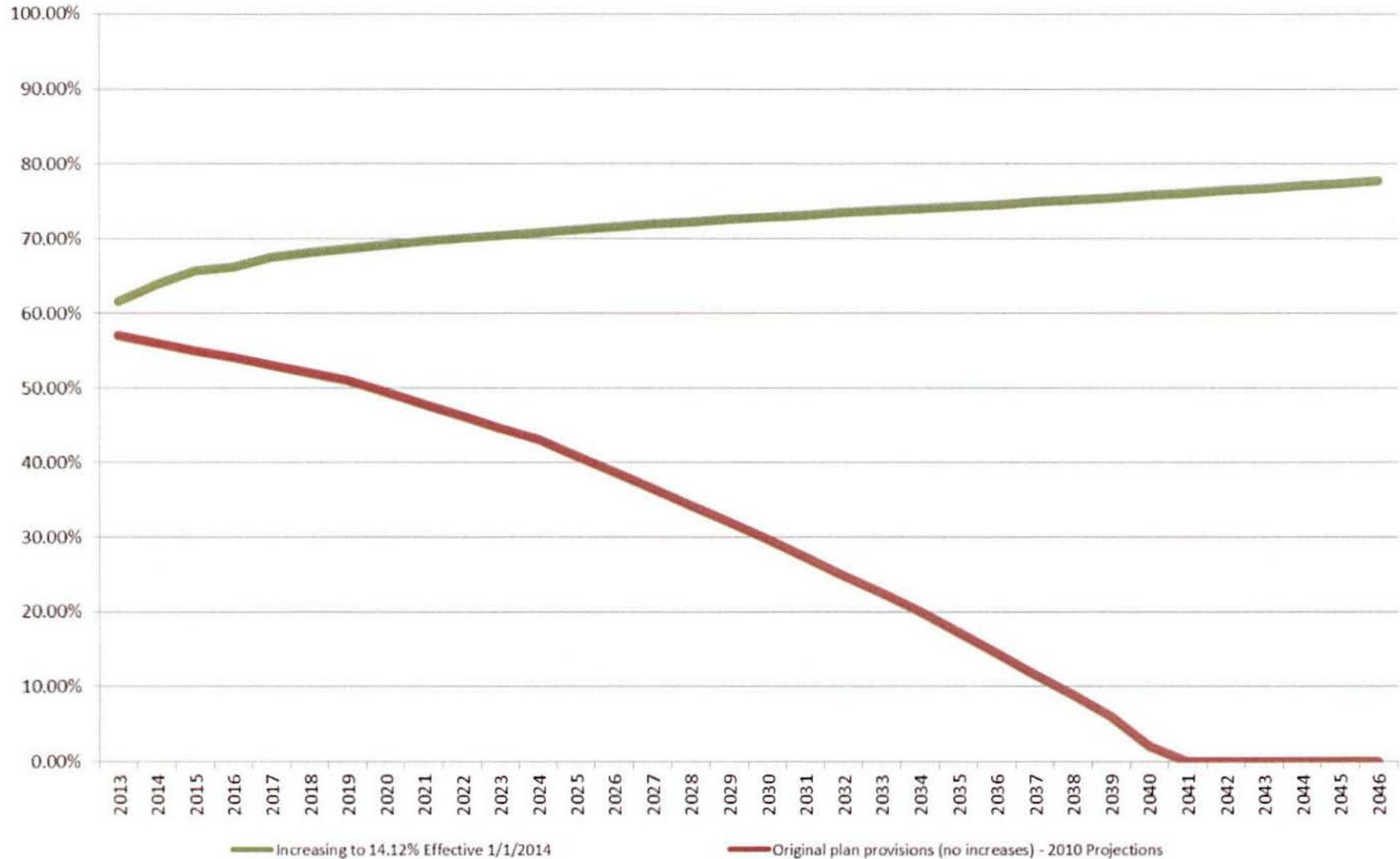


GASB 25 Annual Required Contribution (ARC) – Main System

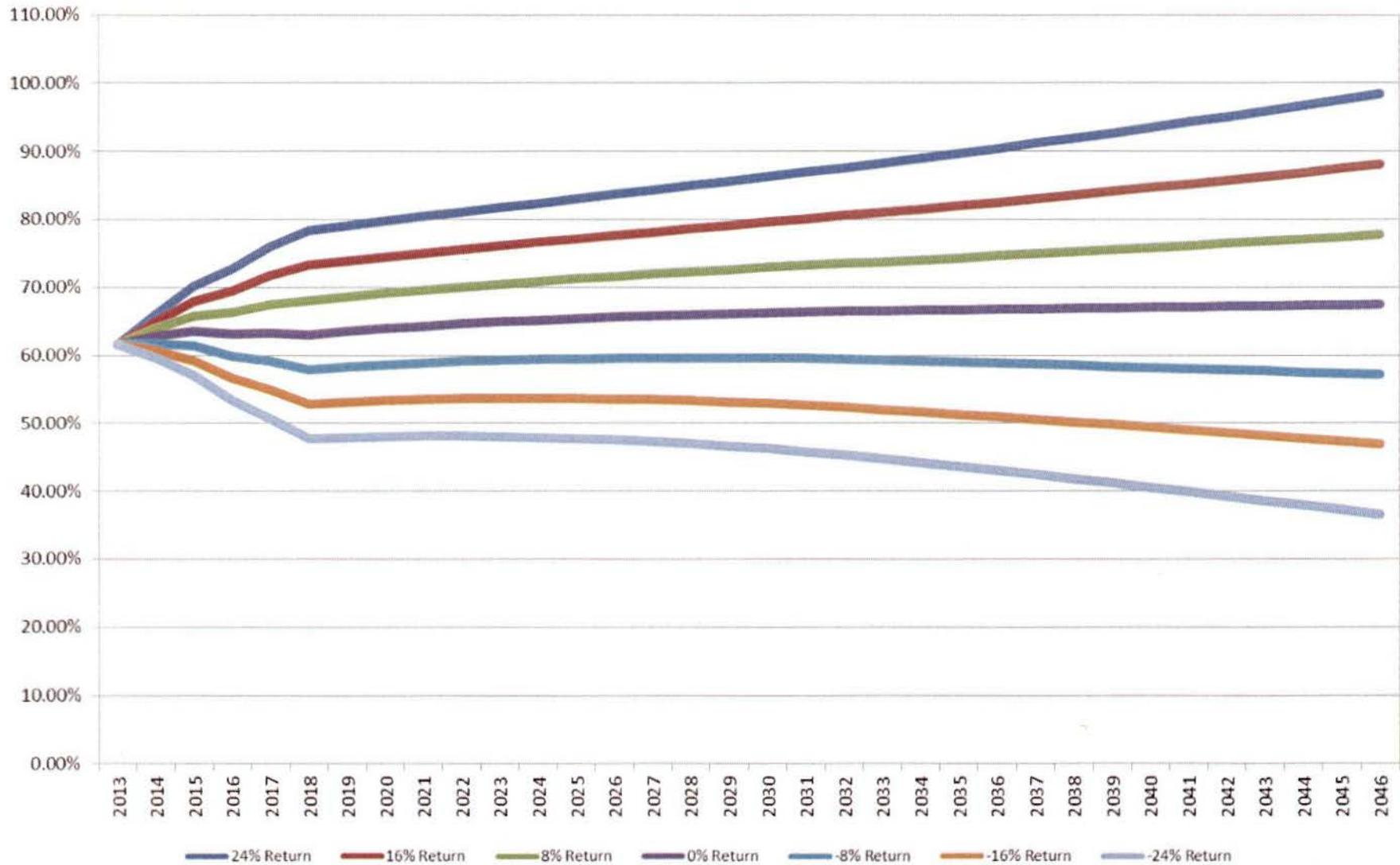


System

Current Plan vs. Original Plan (2010 Projection)



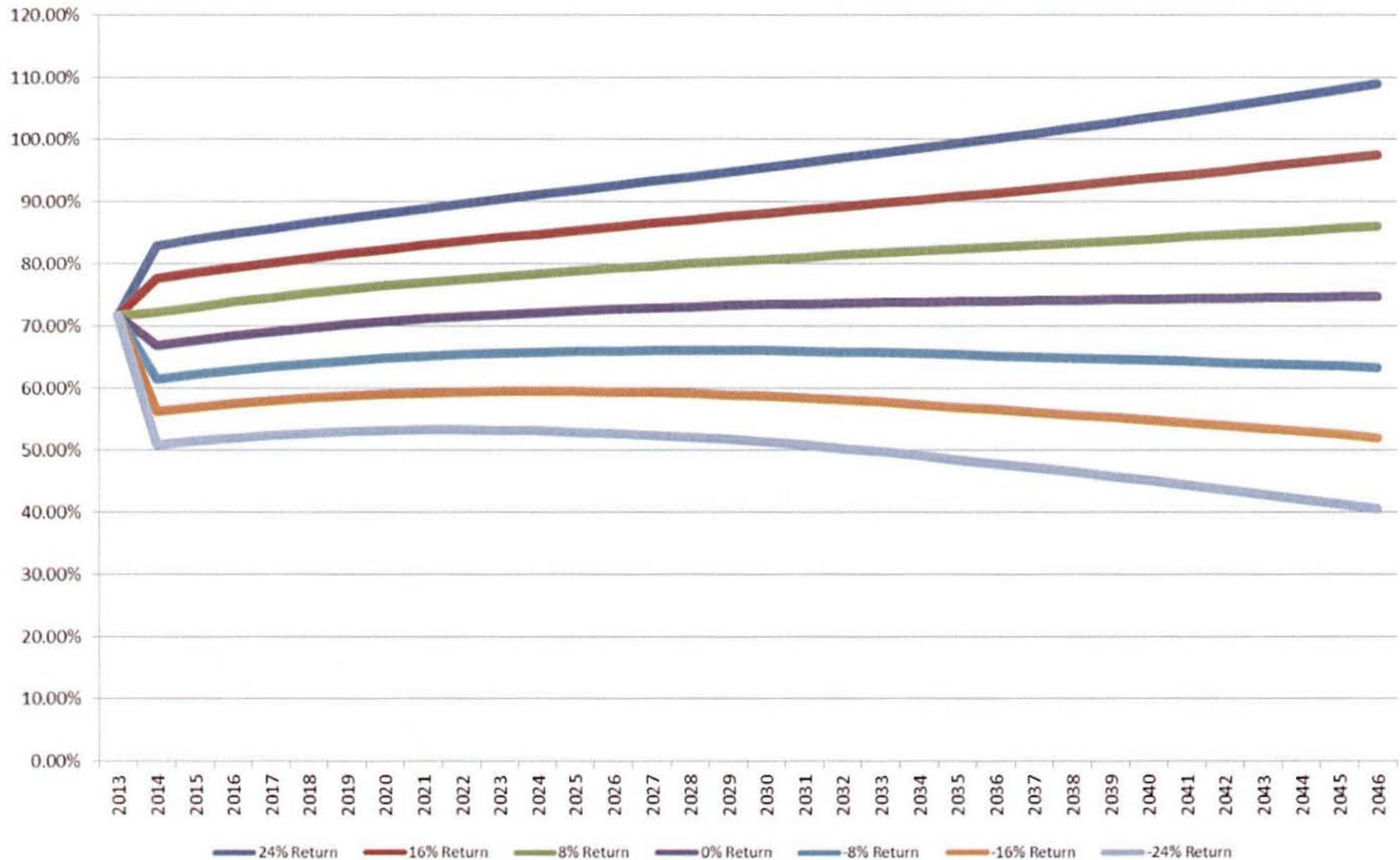
Projected Funded Ratios (AVA Basis) – Main System



Target Funded Ratios – Main System

Target Funded Ratio	Rate of Return Required for All Years Beginning on and after 2014/2015 To Achieve Target in 2033						
	Assumed 2013/2014 Return						
	24.0%	16.0%	8.0%	0.0%	-8.0%	-16.0%	-24.0%
70%	6.8%	7.3%	7.7%	8.3%	8.8%	9.5%	10.2%
80%	7.5%	7.9%	8.4%	9.0%	9.5%	10.2%	10.9%
90%	8.1%	8.6%	9.1%	9.6%	10.2%	10.8%	11.5%
100%	8.7%	9.1%	9.6%	10.1%	10.7%	11.4%	12.1%

Projected Funded Ratios (MVA Basis) – Main System



Questions?

 Segal Consulting

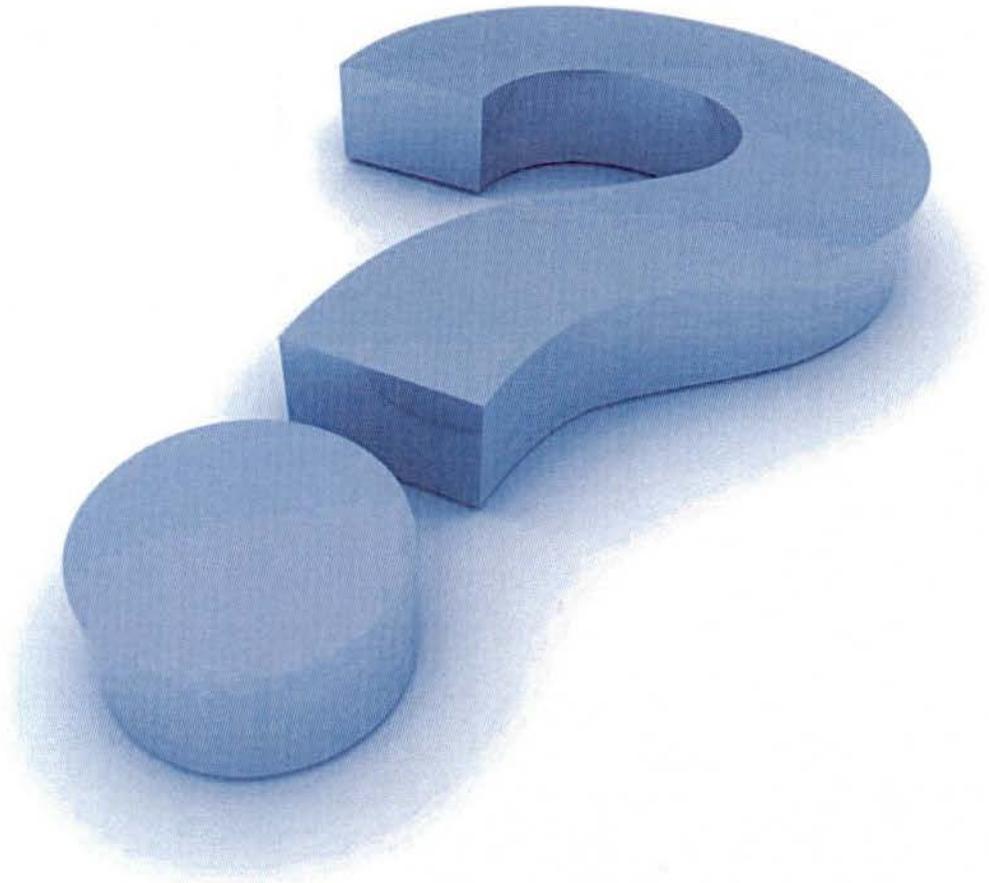
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