

Howard County Police & Fire Employees' Retirement Plan

July 1, 2017 Actuarial Valuation Results

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 @BoltonPartners



Agenda

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- Five year participant summary
- Contribution results
- Changes to contribution rate
 - FY17 investment gains
 - Lower than expected COLAs
- Return and return assumption
- Funded ratio/Risk measures

Participant Summary

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	2013	2014	2015	2016	2017
Active	827	856	828	799	830
DROP	22	26	54	73	74
Terminated Vested	24	20	18	19	18
Retirees & Beneficiaries	274	286	304	320	341
Disabled	24	27	31	33	33
Total Population	1,171	1,215	1,235	1,244	1,296
Active Average Age	38.19	38.31	38.82	39.41	39.37
Active Average Service	11.83	11.99	12.53	13.08	13.02
Active Average Salary	\$76,200	\$78,323	\$82,529	\$86,787	\$88,574

County Contribution Results

	Amount	Percent of Payroll
FYE 6/30/2018	\$25,940,154	32.5%
FYE 6/30/2019	\$27,974,522	33.1%

Historical County Contribution Rates

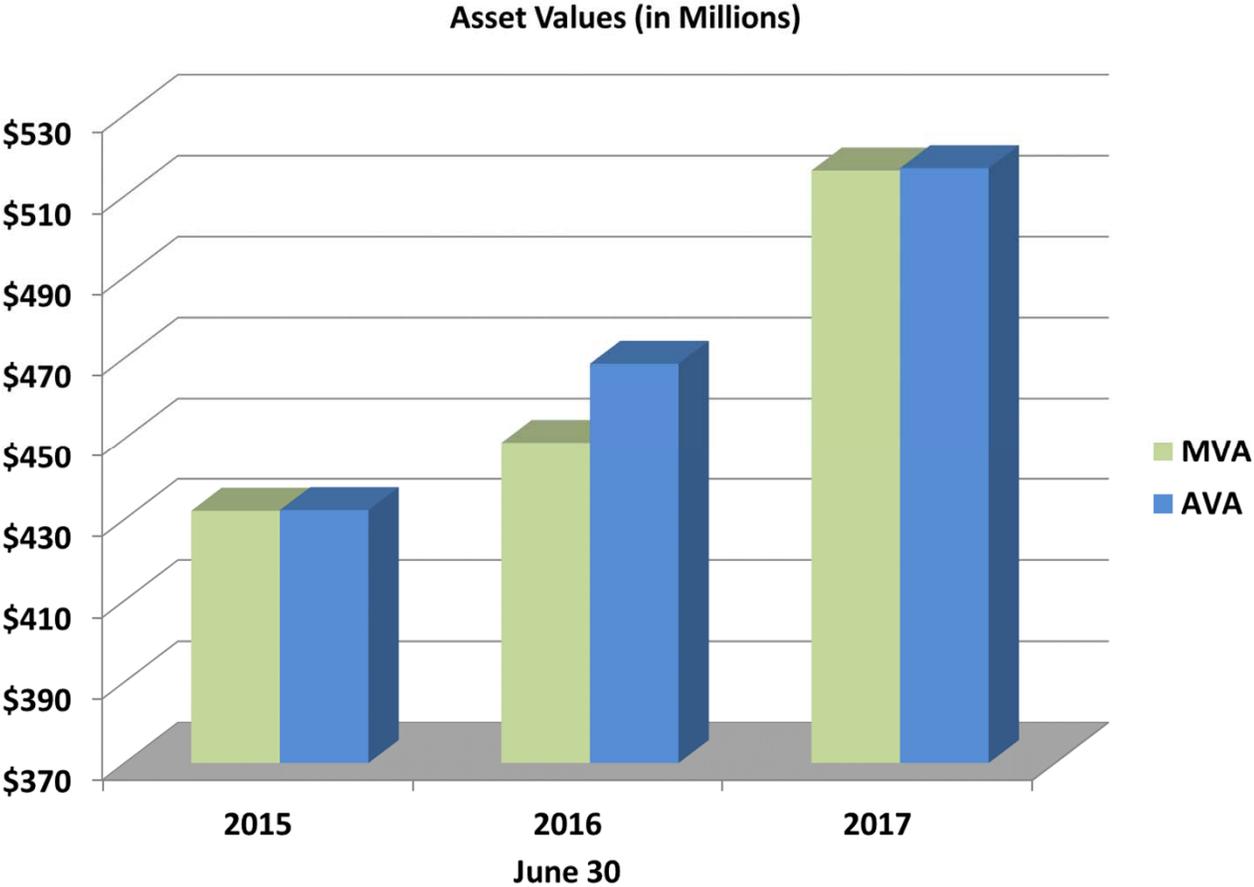
FYE	% of Payroll		FYE	% of Payroll
6/30/2019	33.1%		6/30/2014	31.0%
6/30/2018	32.5%		6/30/2013	30.5%
6/30/2017	30.6%		6/30/2012	29.6%
6/30/2016	30.0%		6/30/2011	26.3%
6/30/2015	32.0%		6/30/2010	25.5%

Reasons for Rate Change

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- FY17 return was 12.3% but “AVA” return was 7.8%
- Retiree COLA was 1.32% but assumed to be 2%

Three Year Asset Summary



Investment Return

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- Investment Return on actuarial basis for year ended 6/30/2017 was greater than expected
 - Assume that assets will earn 7.5% net return
 - Investment return on a market value basis was 12.3%: MVA = \$516.3 million
 - Investment return on an actuarial value basis was 7.8%: AVA = \$516.8 million
 - Investment losses of \$0.6 million not recognized (in last year's valuation \$19.5 million of investment losses not recognized)

Historical Investment Returns

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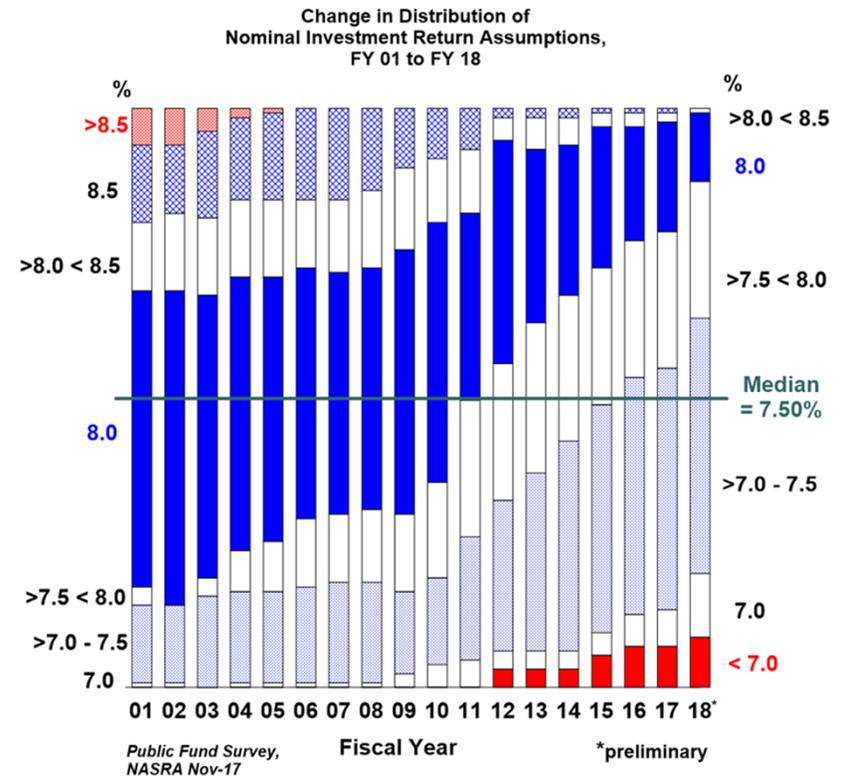
FYE	MVA	AVA	FYE	MVA	AVA
6/30/2017	12.3%	7.8%	6/30/2012	-1.0%	3.9%
6/30/2016	1.5%	5.9%	6/30/2011	20.2%	4.8%
6/30/2015	2.8%	9.0%	6/30/2010	14.0%	2.3%
6/30/2014	15.7%	11.0%	6/30/2009	-15.6%	2.6%
6/30/2013	11.5%	5.9%	6/30/2008	-6.6%	9.2%

Current Trends

LOCAL

County	Discount Rate
Anne Arundel County	7.50%
Baltimore County	6.375%
Caroline County	7.10%
Carroll County	7.00%
Cecil County	7.00%
Charles County	7.50%
Frederick County	7.00%
Harford County	7.00%
St. Mary's County	7.25%

NATIONAL

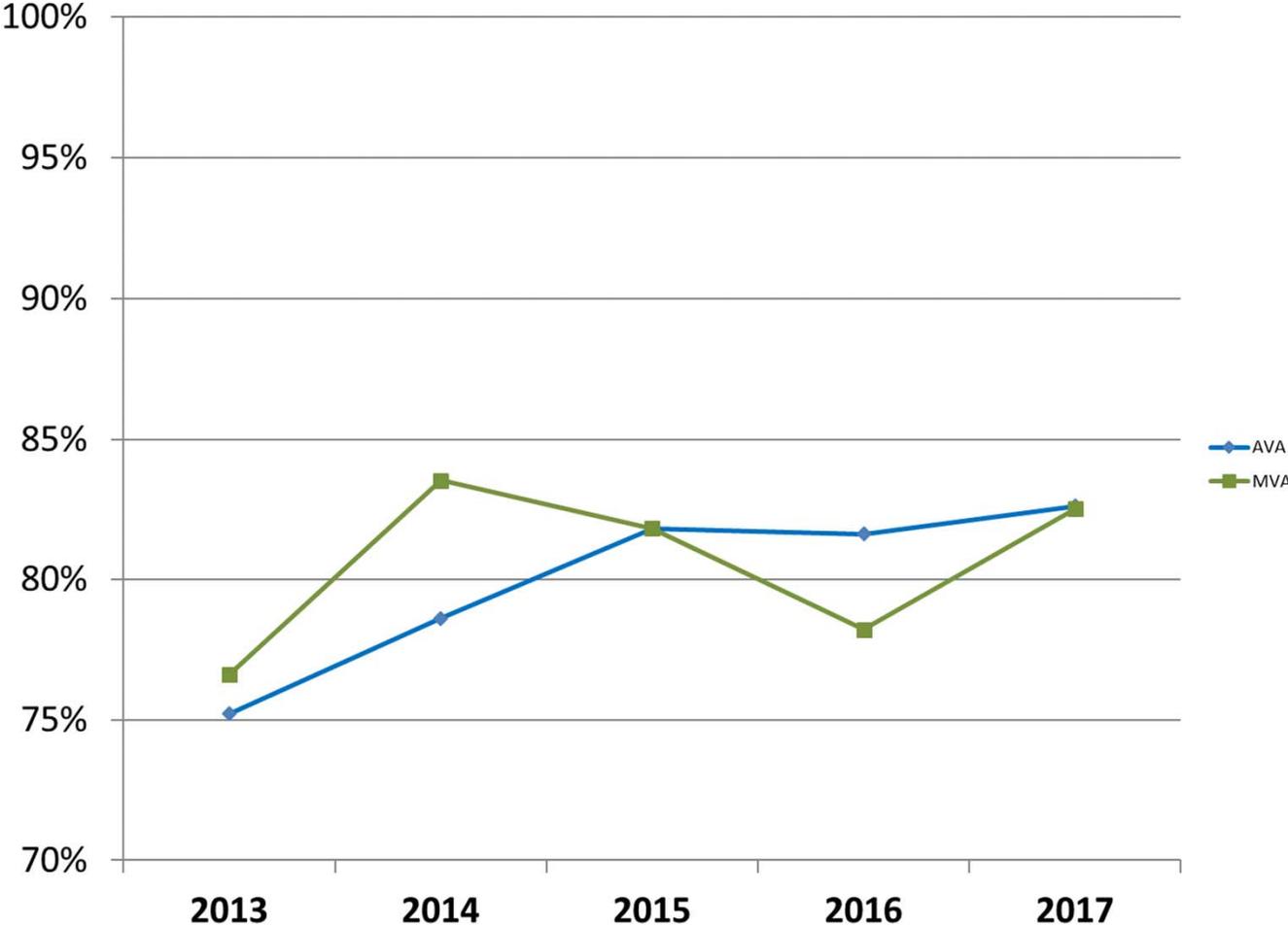


Funded Ratio

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	7/1/2014	7/1/2015	7/1/2016	7/1/2017
Actuarial Value of Assets	\$386.6	\$432.2	\$468.5	\$516.8
Actuarial Accrued Liabilities	\$491.6	\$528.5	\$574.4	\$625.9
Funded Ratio	78.6%	81.8%	81.6%	82.6%
Unfunded Actuarial Accrued Liabilities	\$105.0	\$96.3	\$105.9	\$109.1
Market Value of Assets	\$410.3	\$432.0	\$448.9	\$516.3
Funded Ratio on MVA	83.5%	81.8%	78.2%	82.5%
Covered Payroll	\$63.4	\$62.7	\$63.7	\$68.2
UAAL as a Percentage of Payroll	165.5%	153.5%	166.3%	160.0%

Funded Ratio



Risk Measures

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Risk Measure	7/1/2015	7/1/2016	7/1/2017	Conservative Measures
Retiree Liability as a Percent of Total Liability	42%	42%	42%	<50%
Market Value of Assets to Payroll	5.9	5.9	6.4	<5
Liabilities to Payroll	7.3	7.6	7.8	<5
Benefit Payments to Contributions	0.6	0.6	0.6	1-3

Summary

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- Plan reasonably funded (over 80% on MVA and AVA basis)
- Funding levels improving
- More focus on risk
- Possible changes in future valuations
 - Experience study prior to 7/1/2018 valuation

Disclosure

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This presentation was prepared for the Howard County Police & Fire Retirement Committee and is not intended for use by anyone else. The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments based on assumptions and methods and data sources contained in the annual actuarial reports. Those reports describe the limitations on the uses/purposes of these results. Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely “correct” level of contributions for the coming plan year.

Ann Sturner and Kris Seets are credentialed actuaries meeting the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. They are currently compliant with the Continuing Professional Development Requirement of the Society of Actuaries. We are not aware of any direct or material indirect financial interest or relationship that could create a conflict of interest that would impair the objectivity of our work.