


# Howard County Police and Fire Employees' Retirement Plan

July 1, 2021 Actuarial Report Highlights

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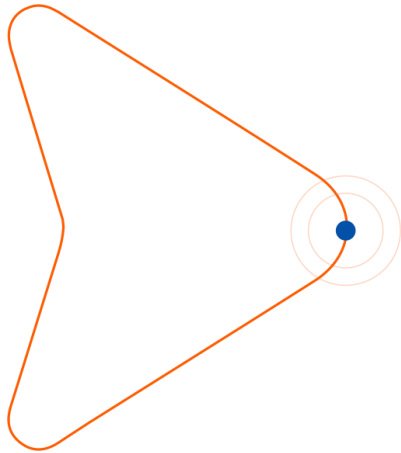
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## Key Valuation Results

- Participant Summary
- Actuarially Determined Contribution
- Funded Status

# Participant Summary

	2017	2018	2019	2020	2021
Active	830	821	847	876	895
DROP	74	79	82	71	73
Terminated Vested	18	18	22	26	24
Retirees & Beneficiaries	341	370	389	430	451
Disabled	33	34	36	35	35
Total Population	1,296	1,322	1,376	1,438	1,478
Active Average Age*	39.37	39.48	39.33	38.83	39.02
Active Average Service*	13.02	13.20	13.09	12.54	12.59
Active Average Salary*	\$88,574	\$90,960	\$91,690	\$92,599	\$94,620

\*Includes participants in DROP

# Actuarially Determined Contribution

	2020 Valuation for FY22 – 7.35%	2021 Valuation for FY23 – 7.35%	2021 Valuation for FY23 – 7.25%
Contribution Amount	\$33,138,107	\$31,373,892	\$33,060,808
Contribution as a Percentage of Payroll	35.8%	32.4%	34.2%
Funded Percentage (AVA)	86.0%	91.3%	90.0%

- COLA capped at 2% for both discount rates

# Historical County Contribution Rates

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FYE	% of Payroll
6/30/2023	32.4% or 34.2%
6/30/2022	35.8%
6/30/2021	34.2%*
6/30/2020	35.4%
6/30/2019	33.1%
6/30/2018	32.5%
6/30/2017	30.6%
6/30/2016	30.0%
6/30/2015	32.0%
6/30/2014	31.0%

\* County elected to contribute 35.4% in FY2021

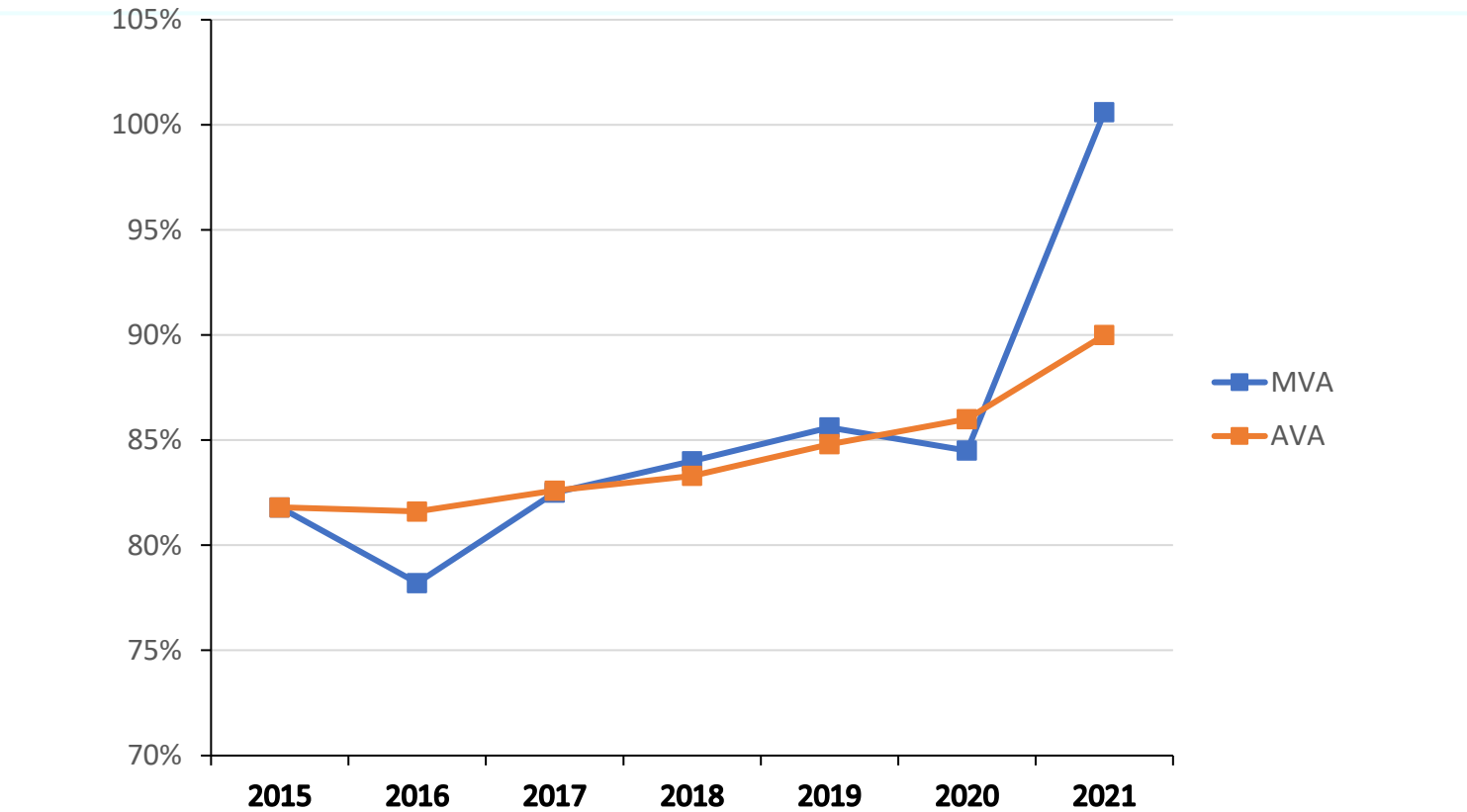
# Funded Status

	7/1/2018	7/1/2019	7/1/2020	7/1/2021
Actuarial Value of Assets	\$567.2	\$614.0	\$660.3	\$739.2
Actuarial Accrued Liabilities	\$680.9	\$723.7	\$768.1	\$821.1
Funded Ratio using AVA	83.3%	84.8%	86.0%	90.0%
Market Value of Assets	\$571.9	\$619.4	\$648.9	\$825.8
Funded Ratio using MVA	84.0%	85.6%	84.5%	100.6%
Unfunded Actuarial Accrued Liabilities based on AVA	\$113.7	\$109.7	\$107.8	\$81.9

(Dollars in millions)

- 7/1/2021 using 7.25% investment return and COLA capped at 2%

# Funded Status

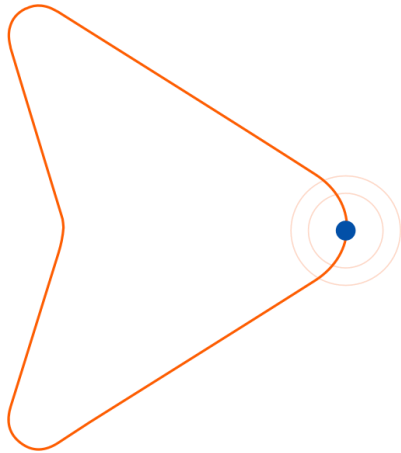




# Historical Investment Returns

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FYE	MVA	AVA
6/30/2021	26.4%	11.1%
6/30/2020	4.0%	6.8%
6/30/2019	6.9%	6.8%
6/30/2018	8.9%	7.9%
6/30/2017	12.3%	7.8%
6/30/2016	1.5%	5.9%
6/30/2015	2.8%	9.0%
6/30/2014	15.7%	11.0%
6/30/2013	11.5%	5.9%
6/30/2012	-1.0%	3.9%



## Discussion Items

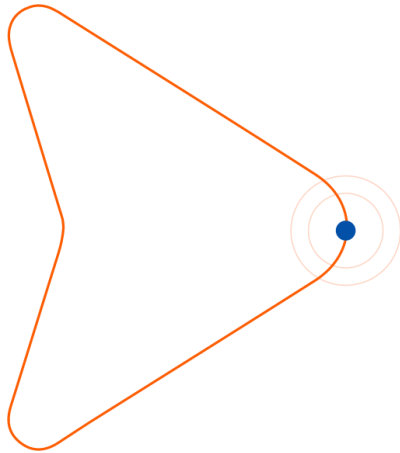
- Gain/Loss Discussion
- Assumption Discussion

# Gain/Loss Discussion

- Large overall gain (about \$33M, or about 4.0% of liability) primarily due to assets returning more than expected (11.1% AVA rate of return vs. 7.35% assumption)
- Under the asset smoothing method, investment gains will be recognized in future years (\$86M in total deferred gains)
- Gain (\$3.3M) due to 1.079% COLA less than the 2% assumed
- Gain (\$3.1M) due to pay increases that were less than expected for continuing employees (average increase 5.65% vs. 6.11% expected)
- Minimal other demographic gains and losses

# Assumption Discussion

- Recommended investment return and inflation/COLA reductions
  - **Decrease investment return assumption from 7.35% to 7.25%**
  - **Decrease inflation/COLA assumption from 2.60% to 2.50% (COLA continues to be capped at 2%)**
  - **Revisit these assumptions next year and consider further reductions in discount rate**
- Next experience study scheduled to begin shortly with any recommended updates implemented in the 2022 actuarial valuation

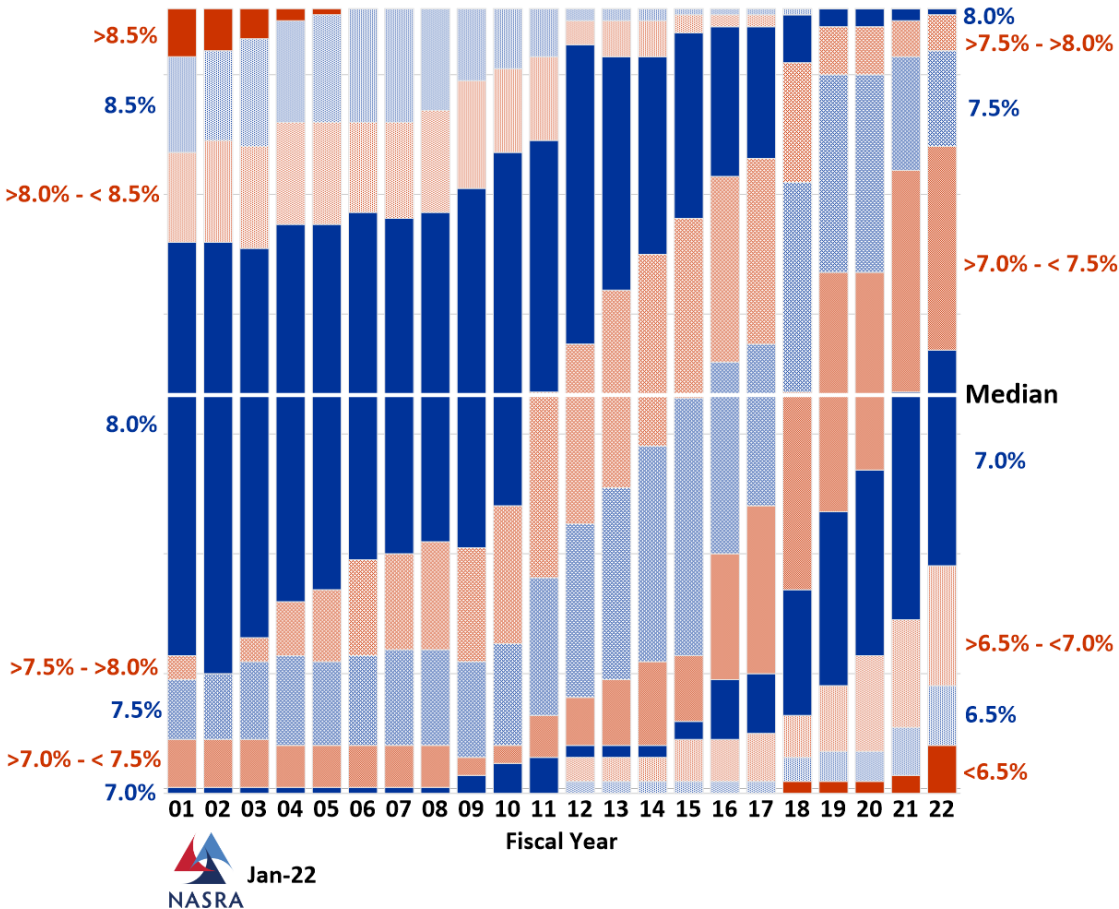


## Comparison to Other Plans

- NASRA Discount Rate Survey
- Local Discount Rate Survey
- NASRA Funded Status Survey
- Benchmarking Public Sector Plan Returns

# NASRA Discount Rate Survey

Distribution of Investment Return Assumptions,  
FY 01 to present

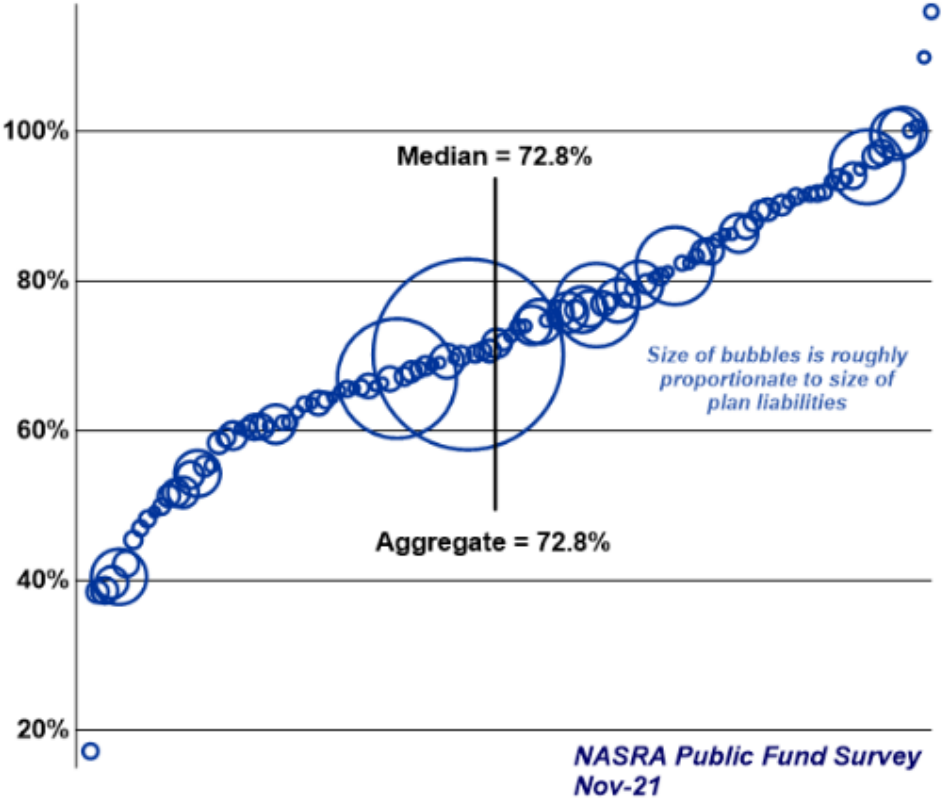


# Local Discount Rate Survey

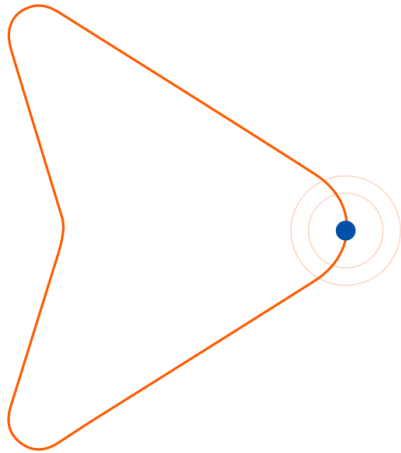
Jurisdiction	Discount Rate
Anne Arundel County	7.00%
Calvert County	7.25%
Caroline County	7.00%
Carroll County	7.00%
Cecil County	7.00%
Charles County General Employees	7.10%
Charles County Sheriff's	7.40%
Frederick County	7.00%
Harford County	7.00%
Montgomery County	7.50%
Prince George's County	7.25%
St. Mary's County	7.25%
State of Maryland	6.80%
Washington County	7.25%

# NASRA Funded Status Survey

Figure B







# Risk Measures

- Types of Risk
- Risk Measures
- Quantitative Risk Assessment Options

# Types of Risk

- **Investment risk:** The potential that investment returns will be different than expected. The Committee is well aware of this risk.
- **Contribution risk:** Most commonly this is associated with the potential that actual future contributions are not made in accordance with the plan's actuarially-based funding policy.
- **Longevity and other demographic risks:** The potential that mortality or other demographic experience will be different than expected.
- **Asset/liability mismatch risk:** The potential that changes in asset values are not matched by changes in the value of liabilities.
- **Cash flow risks:** The potential that contributions coming into the plan will not cover benefit payments.

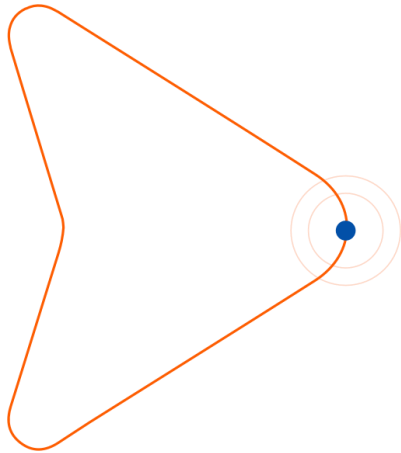
# Risk Measures

Risk Measure	7/1/2019	7/1/2020	7/1/2021	Conservative Measures
Retiree Liability as a Percent of Total Liability	45%	48%	48%	<50%
Market Value of Assets to Payroll	7.3	7.4	9.0	<5
Liabilities to Payroll	8.5	8.8	9.0	<5
Benefit Payments to Contributions	0.8	0.9	0.9	<3

- 7/1/2021 using 7.25% investment return and COLA capped at 2%

# Quantitative Risk Assessments Options

- **Scenario Test**—A process for assessing the impact of one possible event, or several simultaneously or sequentially occurring possible events, on a plan's financial condition.
- **Sensitivity Test**—A process for assessing the impact of a change in an actuarial assumption on an actuarial measurement.
- **Stochastic Modeling**—A process for generating numerous potential outcomes by allowing for random variations in one or more inputs over time for the purpose of assessing the distribution of those outcomes.
- **Stress Test**—A process for assessing the impact of adverse changes in one or relatively few factors affecting a plan's financial condition.



# Hot Topics

- Summary of Hot Topics

# Summary of Hot Topics

- Handling surplus
- Risk assessment
- Experience study
  - **Mortality, including augmented mortality tables**
  - **Actuarial equivalence**
- Actuarial Standard of Practice No. 4
  - **Nearing final release**
  - **Disclosing liabilities at a bond rate**
  - **Reasonable actuarially determined contribution**
- Variable annuity plans

# Disclosures

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- In preparing this presentation, we relied without audit, on information supplied by Howard County.
- The actuarial assumptions, data and methods are those used in the preparation of the latest actuarial valuation report prepared for this plan as of July 1, 2021.
- The assumptions reflect our understanding of the likely future experience of the plans and the assumptions as a whole represent our best estimate for the future experience of the plans. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the plans could vary from our results.
- We certify that, to the best of our knowledge, this report and its contents, which are work products of Bolton are complete and accurate and have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.
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- Risk Management Consulting
- Plan Terminations
- Defined Contribution Consulting
- Plan Compliance



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- Broad-Based Employee Pay
- Sales Compensation
- Global Remuneration
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