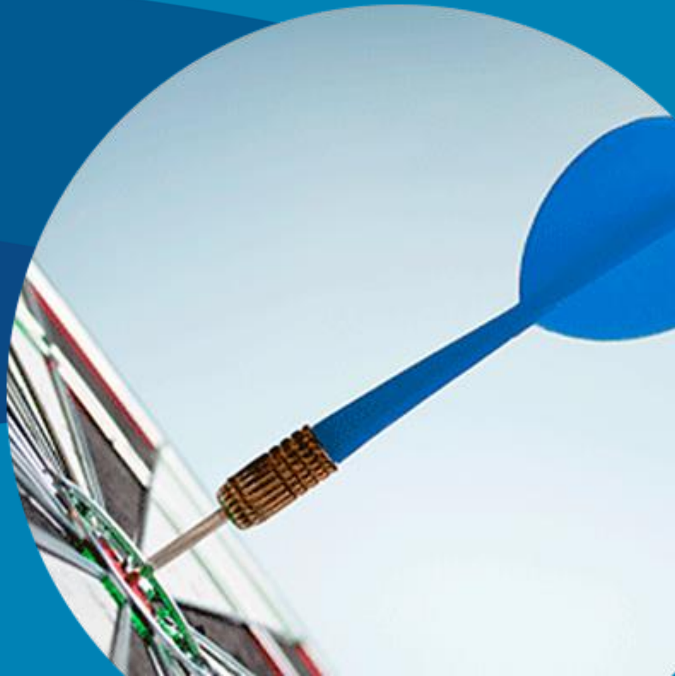
Michigan Public School Employees

Retiree Health Actuarial Valuation Results as of September 30, 2018



Retiree Health Benefits
The Funding Issue

- Unlike pensions, health benefits have not been pre-funded for a long period of time
  - Most plan sponsors nationwide have not pre-funded health benefits either
  - Currently very little investment income to help pay benefits
- Costs rise as more members retire, and health inflation outpaces general inflation
- Pre-funding contributions have been calculated since 1999 – but pre-funding started only recently

Full Funding Employer Contribution

- Reported that full funding for MPSERS began in fiscal year (FY) 2013
- September 30, 2018 valuation establishes the required employer contribution for FY 2021
- Reflects 3% of payroll active member contributions required to participate in the defined benefit retiree health program
- Reflects plan changes resulting from Public Act 300 of 2012
- Reflects investment return assumption that was lowered from 7.15% to 6.95% in accordance with the Dedicated Gains Policy adopted by the Board of Trustees

GRS Retirement Consulting

Full Funding Employer Contribution

- Reflects the adoption of new assumptions in conjunction with the Experience Study covering the period October 1, 2012 through September 30, 2017
- Reflects payroll growth schedule for amortization purposes dictated by Public Act 181 of 2018
- Employer contribution rates included in this presentation do not incorporate the "contribution floor" provisions of Public Act 181 of 2018 or Public Act 92 of 2017

GRS Retirement Consulting

Retiree Health Valuation Results
Full Actuarial Funding

- FY 2018 expenditures for employer paid retiree health care benefits
  - $ 532.0 million
    - Excludes retiree paid premiums
    - Excludes $96.7 million in other governmental contributions
- FY 2018 contributions for retiree health care benefits:
  - $ 663.7 million – Employer contributions
    - Excludes $96.7 million in other governmental contributions
  - $ 210.7 million – Employee contributions

Above reported amounts from the MPSERS 2018 financial statements.

Actuarially Computed Employer Contribution FY 2021 ($ in Millions)

- Actuarially computed employer contribution for FYE September 30, 2021:

	FY 2021	
Employer Normal Cost	$	54.5
Amortization of UAAL[1]		550.8
Actuarially Computed Employer Contribution	$	605.3

[1] Unfunded Actuarial Accrued Liabilities (UAAL) were amortized over 18 years from October 1, 2020.

- Once fully funded, the annual employer contribution requirement decreases to the normal cost contribution

Actuarial Gain/(Loss) ($ in Millions)

		Gain/(Loss)
1. **Premiums.** Gains and losses resulting from actual premiums in valuation year versus that assumed from prior valuation.	$	1,446.4
2. **Investment Income.** If there is greater investment income than assumed, there is a gain. If less income, a loss.		186.8
3. **Demographic and Other.** Gains and losses resulting from demographic experience, data adjustments, timing of financial transactions, etc.		223.9
4. **Composite Gain/(Loss) During Year.**	$	1,857.1

GRS Retirement Consulting

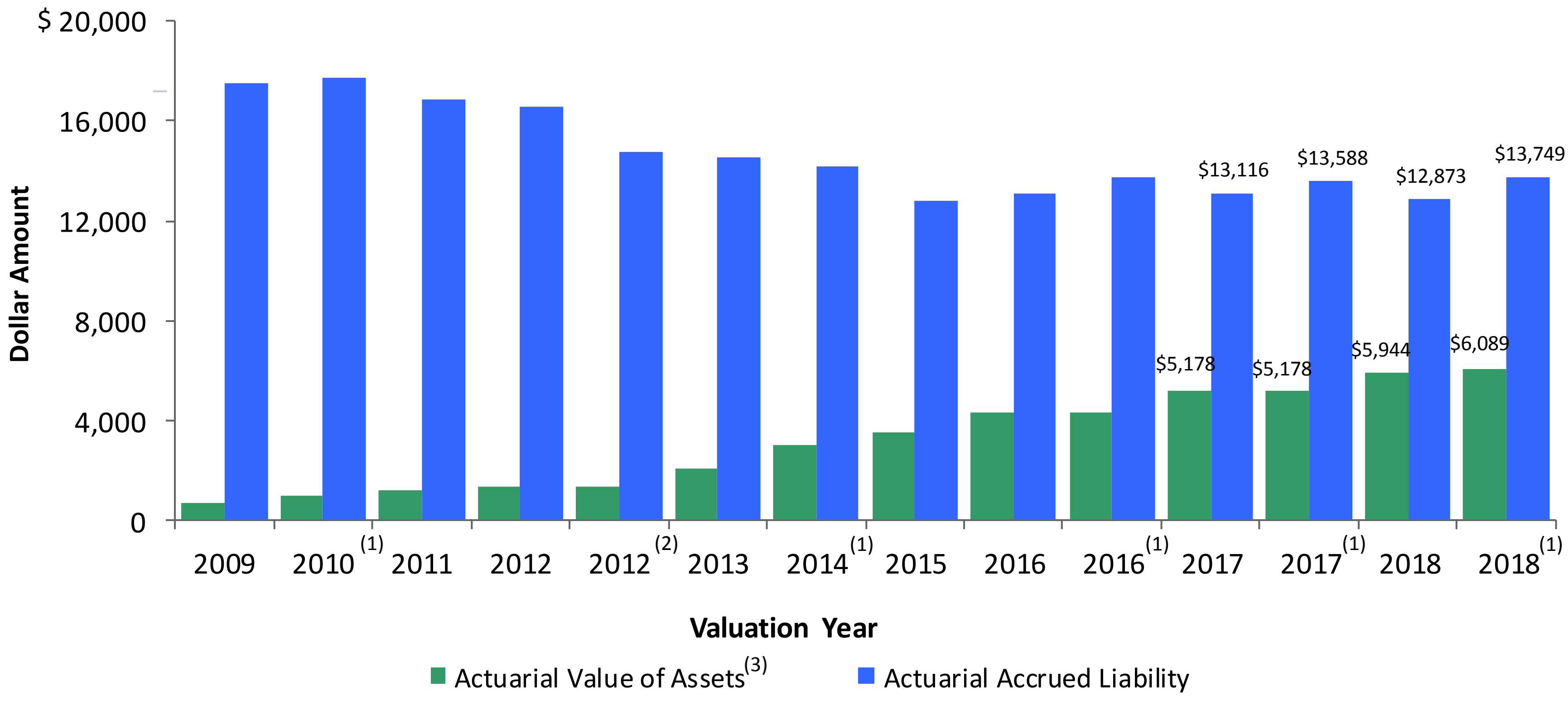
Circumstances That Would Increase Projected Costs

- Medicare funding reductions or cost shifting
- Unexpected new benefit recipients (from health benefit cutbacks of other employers)
- Medical inflation worse than assumed; the actual future contributions will depend on future per capita health cost increases (health inflation)*
- Active member population decline (contribution rates as a percentage of payroll would increase)
- Lower than expected investment returns; bigger impact as plan assets grow
- This is not a complete list

* *Per capita costs are projected to increase 7.5% the first year, graded down to 3.5% in the twelfth and later years.*

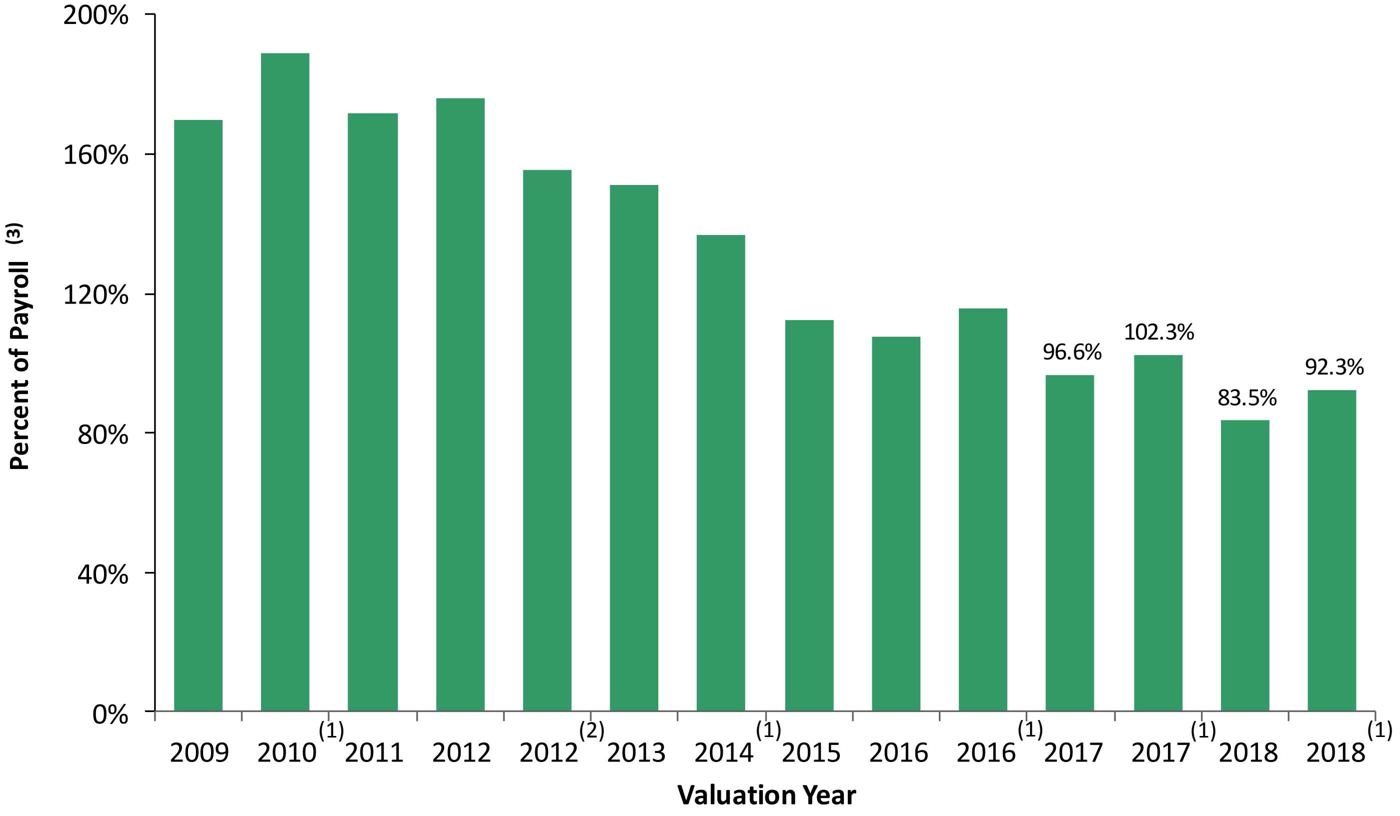
GRS Retirement Consulting

Health Assets & Accrued Liabilities Full Actuarial Funding ($ in Millions)



(1) Reflects assumption changes (not including trend assumption)
(2) Reflects plan changes resulting from Public Act 300 of 2012
(3) Actuarial value of assets were equal to the market value of assets prior to 2018

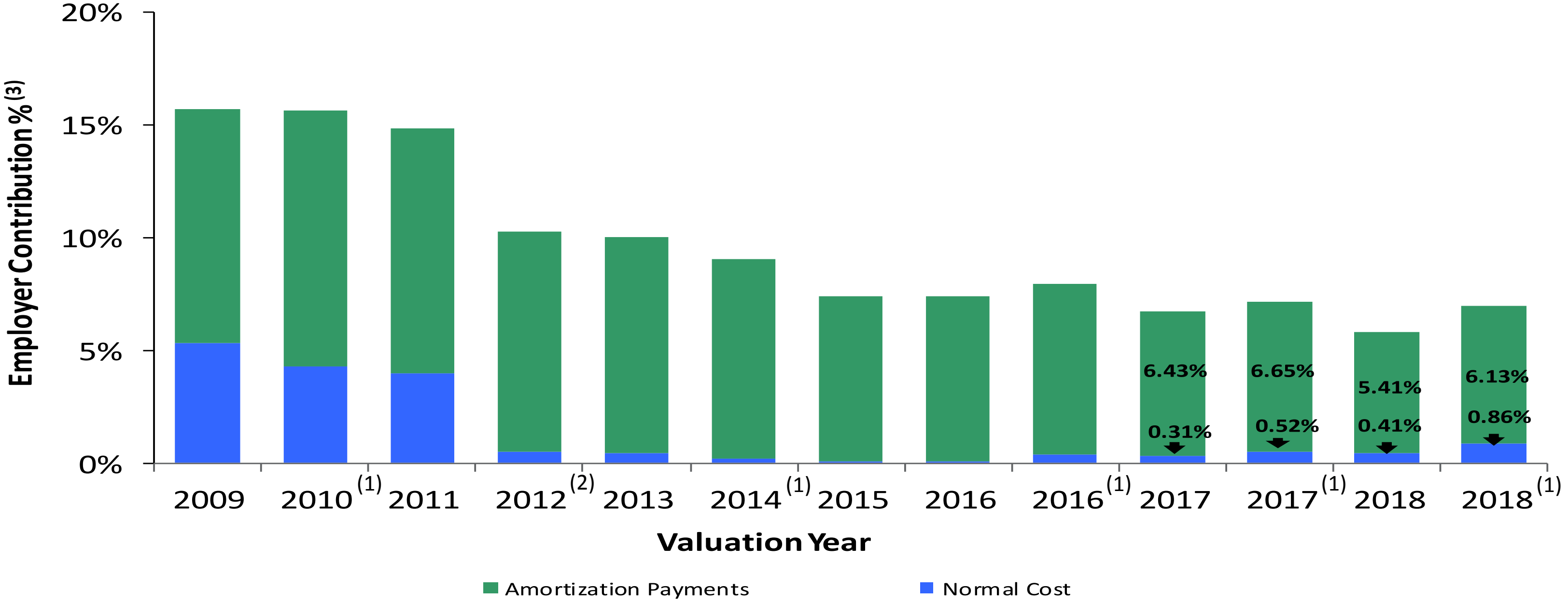
Unfunded Accrued Liabilities as %'s of Payroll – Full Actuarial Funding



(1) Reflects assumption changes (not including trend assumption)
(2) Reflects plan changes resulting from Public Act 300 of 2012
(3) Percentage of total MPSERS payroll (including both PHF and non-PHF members)

GRS Retirement Consulting

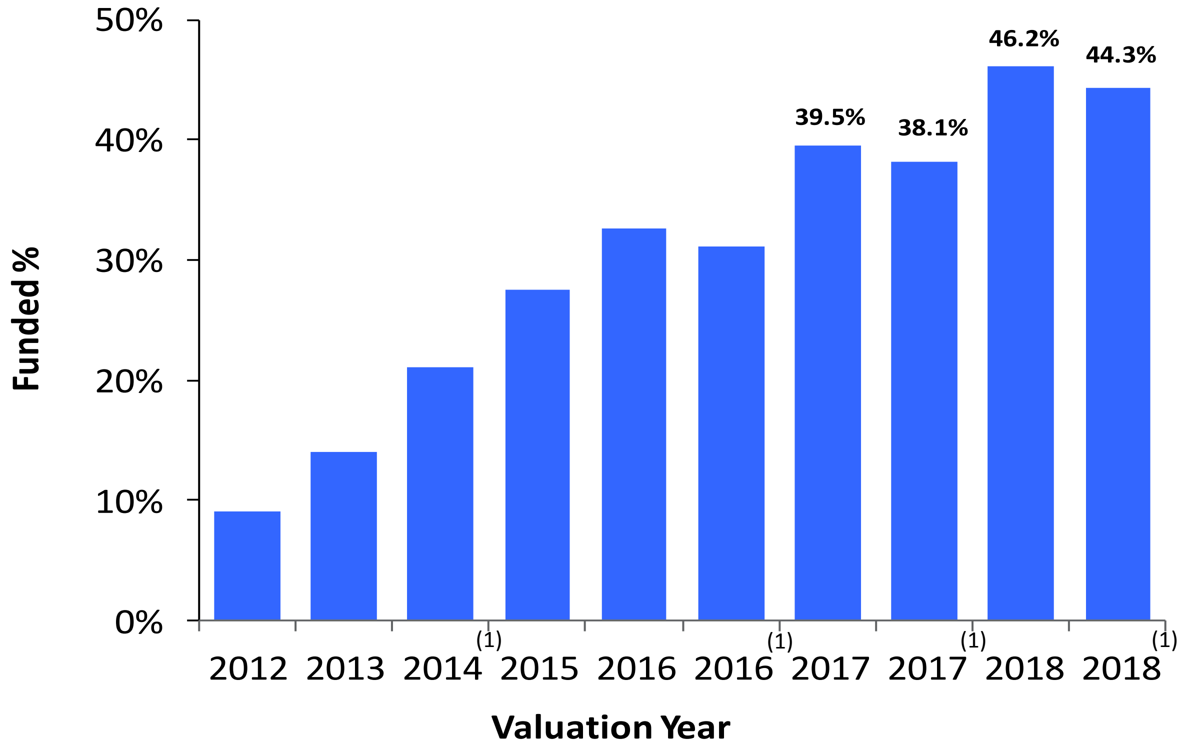
Required Employer Contributions as Percents of Payroll (Full Actuarial Funding)



(1) Reflects assumption changes (not including trend assumption)
(2) Reflects plan changes resulting from Public Act 300 of 2012
(3) Starting with the 2012 valuation year, (a) the normal cost is expressed as a percentage of non-PHF active member payroll, (b) the Amortization Payment is expressed as a percentage of total MPSERS active member payroll (including PHF and non-PHF), and (c) the required employer contribution is for the fiscal year beginning two years after the valuation date

GRS Retirement Consulting

Funded Percent



(1) Reflects assumption changes (not including trend assumption)

GRS Retirement Consulting

Disclaimers

- This presentation is intended to be used in conjunction with the September 30, 2018 retiree health actuarial valuation report issued March 6, 2019. This presentation should not be relied on for any purpose other than the purpose described in the valuation report.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- The actuaries submitting this presentation (Mita Drazilov and Louise Gates) are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

GRS Retirement Consulting