

July 26, 2019 - DRAFT

Ms. Kerrie Vanden Bosch Director, Office of Retirement Services Stevens T. Mason Building 530 W. Allegan Lansing, Michigan 48933

Re: Separate Actuarial Valuation as of September 30, 2018 for University Members of MPSERS (Retiree Health Benefits Only)

Dear Ms. Vanden Bosch:

We have completed a separate actuarial valuation of retiree health benefits for current and former employees of the seven Michigan Universities that have withdrawn from the Michigan Public School Employees' Retirement System (for their employees hired on or after January 1, 1996) due to the enactment of Act No. 272 of the Public Acts of 1995. This actuarial valuation was prepared as of September 30, 2018, and utilized the same actuarial assumptions and methods, plan provisions, and premiums used for the September 30, 2018 valuation of the Michigan Public School Employees' Retiree Health Benefits, with the exception that the unfunded actuarial accrued liability for University members is expected to be amortized by September 30, 2036.

The purpose of the valuation is to provide the actuarially computed employer contribution for fiscal year 2021 and to evaluate the liabilities and funded status of the Retiree Health System for the affected members in total. This report should not be relied upon for any other purpose.

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#### Comments

This report was prepared at the request of the Office of Retirement Services (ORS) and those designated or approved by the Office of Retirement Services. This report may be provided to parties other than the Office of Retirement Services only in its entirety and only with the permission of the Office of Retirement Services. GRS is not responsible for unauthorized use of this report.

The valuation was based upon information furnished by the Office of Retirement Services, concerning retiree health benefits, financial transactions, plan provisions, and active members, terminated members, retirees and beneficiaries. Data was checked for internal and year-to-year consistency but was not audited by us. We are not responsible for the accuracy or completeness of the information provided by the Office of Retirement Services.

The valuation summarized in this report involves actuarial calculations that require making assumptions about future events. The assumptions and methods are disclosed fully in the September 30, 2018 actuarial valuation of the Michigan Public School Employees' Retiree Health Benefits report, dated March 6, 2019. In particular, we have assumed that the University members experience the same per capita costs as that of the entire MPSERS population. We believe that the assumptions and methods used in this report are reasonable and appropriate. However, other assumptions and methods could also be reasonable and could result in materially different results. Some of the numbers in this report are rounded. The use of rounded numbers should not imply a lack of precision. In addition, because it is not possible or practical to consider every possible contingency, we may use summary information, estimates or simplifications of calculations to facilitate the modeling of future events. We may also exclude factors or data that we deem to be immaterial.

To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Mita D. Drazilov and Louise Gates are Members of the American Academy of Actuaries (MAAA), are independent of the plan sponsor, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Sincerely,

Mita D. Drazilov, ASA, FCA, MAAA

Mita Drazilor

Louise Gates, ASA, FCA, MAAA



# Summary of Reported Participant Data Comparison of University and Non-University MPSERS Members as of September 30, 2018

Reported Program Participants		Total - All MPSERS Members		University MPSERS Members	N	on-University MPSERS Members
Active Members						
Graded Premium						
Number Average age Average service Reported payroll (millions) Average annual pay  Other Coverage <sup>3</sup> Reported payroll (millions)	\$ \$	134,992 48.9 16.4 6,683.2 49,508	\$ \$	1,038 57.4 27.3 52.5 50,583	\$	133,954 48.8 16.3 6,630.7 49,500
Inactive Vested Members						
Number <sup>1</sup> Average age		2,452 57.4		45 58.6		2,407 57.4
Retirees and Beneficiaries						
Number <sup>2</sup> Average age		216,618 72.7		5,013 74.5		211,605 72.7

Only includes inactive vested persons with 21 or more years of service at termination.

UAAL contributions are expected to be collected on total payroll, not just the payroll of those employees eligible for Graded Premium retiree health coverage. For the Total MPSERS column, Other Coverage refers to payroll attributable to those covered by the Personal Healthcare Fund. For the University column, Other Coverage refers to payroll attributable to University MPSERS members covered by the Personal Healthcare Fund and University Non-MPSERS members.



Includes alternate payees and other individuals not eligible for or otherwise receiving subsidized retiree health benefits.

# Development of the Actuarially Computed Employer Contribution as of September 30, 2018 for Fiscal Year 2021

	Fiscal Year Beginning October 1, 2020 Full Funding (6.95% Interest)					
		Total - All MPSERS <u>Members</u>		University MPSERS Members		Ion-University MPSERS <u>Members</u>
Employer Normal Cost	\$	54,458,296	\$	348,962	\$	54,109,334
Amortization of UAAL <sup>1</sup>	\$	550,832,062	\$	8,468,957	\$	542,363,105
Actuarially Computed Employer Contribution	\$	605,290,358	\$	8,817,919	\$	596,472,439

<sup>&</sup>lt;sup>1</sup> Unfunded Actuarial Accrued Liabilities (UAAL) were amortized over 18 years from October 1, 2020 in the total MPSERS retiree health valuation (16 years in the University retiree health valuation).

The UAAL was amortized as a level percent of active member payroll over a period of 18 years and a payroll growth assumption (for amortization purposes only) of 3.50% for the total MPSERS retiree health valuation. The UAAL was amortized as a level percent of active member payroll over a period of 16 years and a payroll growth assumption (for amortization purposes only) of 2.75% for the University retiree health valuation.

The actuarially computed employer contribution amounts presented throughout this report do not reflect: (1) the normal cost or UAAL "floor" provisions of Public Act 92 of 2017 and Public Act 181 of 2018 or (2) the payroll floor provisions of Public Act 136 of 2016.



Table 3

Determination of Unfunded Actuarial Accrued Liability as of September 30, 2018

	September 30, 2018				
	Full Funding (6.95% Interest)				
	Total - All MPSERS <u>Members</u>	University MPSERS <u>Members</u>	Non-University MPSERS <u>Members</u>		
A. Present Value of Future Benefits					
i) Retirees and Beneficiaries	\$ 8,504,851,251	\$ 177,710,316	\$ 8,327,140,935		
ii) Inactive Vested Members	78,905,758	1,517,339	77,388,419		
iii) Active Members	6,860,862,000	63,519,273	6,797,342,727		
Total Present Value of Future Benefits	\$ 15,444,619,009	\$ 242,746,928	\$ 15,201,872,081		
B. Present Value of Future Normal Costs	1,695,680,061	\$ 8,204,484	1,687,475,577		
C. Actuarial Accrued Liabilities (A-B)	\$ 13,748,938,948	\$ 234,542,444	\$ 13,514,396,504		
D. Funding Value of Assets	6,089,485,632	127,559,892	5,961,925,740		
E. Unfunded Actuarial Accrued Liability (C-D)	\$ 7,659,453,316	\$ 106,982,552	\$ 7,552,470,764		
F. Funded Ratio (D/C)	44.29%	54.39%	44.12%		



# Summary of MPSERS Liability Transfers Between Non-University and University from October 1, 2017 through September 30, 2018

Transfe	ers between segments		
Transfe	ers to University		
a)	3 Non-University actives as of 10/1/2017 who transferred to		
•	University actives by 10/1/2018	\$	164,742
b)	0 Non-University terminated vested as of 10/1/2017 who		
	transferred to University actives by 10/1/2018		0
c)	0 Non-University pensioners as of 10/1/2017 who transferred to		
	University actives by 10/1/2018		0
d)	0 Non-University actives as of 10/1/2017 who transferred to		
	University terminated vesteds by 10/1/2018		0
e)	1 Non-University terminated vesteds as of 10/1/2017 who		
	transferred to University terminated vesteds by 10/1/2018		0
f)	0 Non-University pensioners as of 10/1/2017 who transferred to		
	University terminated vesteds by 10/1/2018		0
g)	0 Non-University actives as of 10/1/2017 who transferred to		
	University pensioners by 10/1/2018		0
h)	5 Non-University terminated vested as of 10/1/2017 who		
	transferred to University pensioners by 10/1/2018		76,490
i)	3 Non-University pensioners as of 10/1/2017 who transferred to		
	University pensioners by 10/1/2018		68,358
j)	Total Transfers into University	\$	309,590
		\$	309,590
	Total Transfers into University	\$	309,590
ransfe		\$	309,590
ransfe	ers from University	<b>\$</b> \$	<b>309,590</b> 109,828
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Due to eligibility and/or elections in relation to the retiree health benefits, not all transfers will have an associated liability.



# Allocation of September 30, 2018 MPSERS Assets Between University and Non-University Members

	Total	MPSERS	MPSERS
Year Ended September 30, 2018	MPSERS	University	Non-University
A. Funding Value Beginning of Year	\$ 5,177,774,602	\$ 112,299,654	\$ 5,065,474,948
B. Market Value			
B1. Market Value End of Year	6,111,241,252	128,022,779	5,983,218,473
B2. Market Value Beginning of Year	5,177,774,602	112,299,654	5,065,474,948
B3. Audit Adjustment	-	-	· · · · · -
C. Non-Investment Net Cash Flow			
C1. Member Contributions	210,679,559	1,781,909	208,897,650
C2. Employer Contributions	663,708,218	12,991,528	650,716,690
C3. Other Governmental Contributions	96,707,671	2,502,447	94,205,224
C4. Benefit Payments	(628,361,484)	(14,253,271)	(614,108,213
C5. Contribution Refunds / Transfers	(344,297)	(3,549)	(340,748
C6. Administrative Expenses <sup>1,2</sup>	Included in D1	Included in D1	Included in D1
C7. Other	96,020	-	96,020
C8. University/Non-University Participant Transfer	-	129,964	(129,964
C9. Total Net Cash Flow: C1+C2+C3+C4+C5+C6+C7+C8	342,485,687	3,149,028	339,336,659
D. Investment Return	, ,	, ,	
D1. Market Return Total: B1 - B2 - B3 - C9 <sup>1</sup>	590,980,963	12,574,097	578,406,866
D2. Assumed Rate of Return	7.15%	7.15%	7.159
D3. Market Rate of Return	11.05%	11.05%	11.059
D4. Dedicated Gains Policy Trigger (Excess Return %)	3.39%	3.39%	3.399
D5. Market Return for Immediate Recognition: D4 x (B2 + B3 + (C9 - C8)/2)	181,331,691	3,858,131	177,473,560
D6. Assumed Amount of Return: D2 x (A + B3 + (C9 - C8)/2)	382,454,747	8,137,357	374,317,390
D7. Amount Subject to Phase-In: D1 - D5 - D6	27,194,525	578,609	26,615,916
E. Phased-In Recognition of Investment Return	, ,	,	
E1. Current Year: 0.20 x D7	5,438,905	115,722	5,323,183
E2. First Prior Year	-	-	-,,
E3. Second Prior Year	_	-	
E4. Third Prior Year	_	-	
E5. Fourth Prior Year	_	-	
E6. Total Phase-Ins	5,438,905	115,722	5,323,183
F. Funding Value End of Year	, ,	,	, ,
F1. Preliminary Funding Value End of Year: A + B3 + C9 + D5 + D6 + E6	\$ 6,089,485,632	\$ 127,559,892	\$ 5,961,925,740
F2. Corridor Percent	30%	30%	30'
F3. Upper Corridor Limit: (100% + F2) x B1	7,944,613,628	166,429,612	7,778,184,016
F4. Lower Corridor Limit: (100% - F2) x B1	4,277,868,876	89,615,945	4,188,252,93
F5. Funding Value End of Year	\$ 6,089,485,632	\$ 127,559,892	\$ 5,961,925,740
G. Difference Between Market and Funding Value	21,755,620	462,887	21,292,73
H. Recognized Rate of Return	10.64 %	10.64 %	10.64
. Market Rate of Return	11.05 %	11.05 %	11.05
I. Ratio of Funding Value to Market Value	0.9964	0.9964	0.9964

<sup>&</sup>lt;sup>1</sup> Allocated in proportion to average market value.

Administrative expenses include staff salaries and benefits, consulting, printing, postage, telephone, and other.



# **University Experience Gains/(Losses)**During Year Ended September 30, 2018

#### A. Derivation of Actuarial Gain/(Loss):

1. 2. 3.	Unfunded Actuarial Accrued Liability (UAAL) - Previous Valuation Total Normal Cost (employer plus member) for Year Ending 9/30/2018 Total Contributions (employer plus member) for Year Ending 9/30/2018 Interest on:	\$ 126,142,568 1,859,913 14,773,437
	a. UAAL: Discount Rate* x (1)	9,019,194
	b. Normal Cost and Contributions: Discount Rate* / 2 x [(2) - (3)]	(461,658)
	c. Net Total: (a) + (b)	8,557,536
5. 6.	Change in UAAL due to Benefit Changes Change in UAAL due to Assumption Changes	- 21,305,907
7.	Expected UAAL Current Year:	
	(1) + (2) - (3) + (4c) + (5) + (6)	143,092,487
8.	Actual UAAL Current Year	106,982,552
9.	Experience Gain/(Loss): (7) - (8)	36,109,935
	as a percent of beginning of year liability	15.14%

<sup>\*</sup> Discount rate is 7.15%.

#### **Type of Activity**

	 Gain/(Loss)
1. <b>Premiums</b> Gains and losses resulting from actual premiums in valuation year versus that assumed from prior valuation.	\$ 25,684,428
2. <b>Investment Income.</b> If there is greater investment income than assumed, there is a gain. If less income, a loss.	3,973,853
3. <b>Demographic and Other.</b> Gains and losses resulting from demographic experience, data adjustments, timing of financial transactions, etc.	 6,451,654
5. Composite Gain/(Loss) During Year.	\$ 36,109,935

Please note that the Investment Income row above includes the accelerated recognition of investment gains associated with the Dedicated Gains Policy, if applicable. Gain/(loss) for the year ended September 30, 2018 is measured on pre-Experience Study assumptions. The impact of the Experience Study assumptions on the gain/(loss) will first be reflected in the September 30, 2019 valuation.



**Comment A:** It has been reported that full funding of the retiree health benefit program began in fiscal year 2013 for the Non-University group. It has been reported that full funding of the retiree health benefit program began in fiscal year 2015 for the University group. It has also been reported that the September 30, 2018 annual actuarial valuation is used to establish the employer contribution for fiscal year 2021. Therefore, this report presents the actuarially computed employer contribution for fiscal year 2021 (based upon a 6.95% investment return assumption). Plan changes resulting from Public Act 300 of 2012 are reflected in this annual valuation. (They were first reflected in the September 30, 2012 valuation.) A brief summary of the plan changes follows:

- (1) 90% employer subsidy for benefit recipients already Medicare eligible as of January 1, 2013
- (2) 80% employer subsidy for other members not covered by a grading provision
- (3) 80% maximum employer subsidy for members covered by a grading provision
- (4) Members hired prior to September 4, 2012 had the option to elect to forfeit employer subsidized retiree health coverage and participate in the Personal Healthcare Fund (PHF)
- (5) Members hired on or after September 4, 2012 participate in the PHF with defined benefit retiree health coverage essentially limited to a lump sum at termination (\$1,000 or \$2,000 depending on age at termination), except in cases of duty death-in-service

In addition to the above changes, future 3% of payroll active member contributions required to participate in the defined benefit retiree health program have been reflected in this valuation. A potential refund of a member's 3% contributions is assumed to occur from the pension portion of the Retirement System.

The actuarially computed employer contribution for fiscal year 2021 was determined to be \$605,290,358 for the total MPSERS retiree health valuation with \$8,817,919 attributable to the University members.

As indicated in the cover letter, only University members hired before January 1, 1996 are eligible for MPSERS retiree health benefits.

**Comment B:** One of the key assumptions used in any valuation of the cost of post-employment benefits is the investment rate of return on Plan assets. Higher assumed investment returns will result in a lower actuarially computed employer contribution. Lower returns will tend to increase the actuarially computed employer contributions. We have calculated the liability and the resulting actuarially computed employer contribution based on a 6.95% assumed rate of return, and based on the employer's funding policy of contributing the full actuarially computed employer contribution into a qualified trust.

In accordance with the Dedicated Gains Policy, the investment return assumption was lowered from 7.15% to 6.95% effective with this valuation of MPSERS. The change in investment return assumption increased the actuarial accrued liability by \$291.8 million in the total MPSERS retiree health valuation with \$4.3 million attributable to the University members.



**Comment C:** It is our understanding that full funding of the retiree health benefits based on University specific employer contributions began in fiscal year 2015. As such, to the extent possible, assets attributable to University retiree health benefits will be tracked separately from those attributable to Non-University retiree health benefits. ORS provided certain non-investment cash flow items. The remaining cash flow items were estimated. The allocation of MPSERS retiree health assets is shown in Table 5, including accompanying notes describing the basis for allocating cash flow items not provided by ORS.

Comment D: Starting with the September 30, 2018 valuation, the funding value of assets was developed using an asset smoothing method. The funding value of assets recognizes assumed investment return fully each year. Differences between actual and assumed investment return are phased-in over a closed 5-year period. Prior to the September 30, 2018 valuation, the funding value of assets was equal to the market value of assets. For the total MPSERS retiree health valuation, the market value of assets as of September 30, 2018 was \$6,111.2 million, while the funding value of assets as of September 30, 2018 was \$6,089.5 million. For the University retiree health valuation, the market value of assets as of September 30, 2018 was \$128.0 million, while the funding value of assets as of September 30, 2018 was \$127.6 million.

**Comment E:** Because retiree health benefits are not related to active member payroll, full funding employer contributions are reported as a dollar amount, instead of expressed as a percentage of payroll. Some readers, however, are interested in the actuarially computed employer contributions expressed as a percentage of payroll. The actuarially computed employer contribution amounts expressed as percentages of payroll do not reflect: (1) the normal cost or UAAL "floor" provisions of Public Act 92 of 2017 and Public Act 181 of 2018, or (2) the payroll floor provisions of Public Act 136 of 2016.

#### **Total Retiree Health Valuation**

The non-PHF active member payroll is projected to be \$6,332.4 million for the year beginning October 1, 2020, and the PHF active member payroll is projected to be \$2,651.8 million for the year beginning October 1, 2020. With the introduction of the PHF, the employer normal cost percent (i.e., 0.86%) is expressed as a percentage of non-PHF active member payroll, while the UAAL percent (i.e., 6.13%) is expressed as a percentage of total payroll (i.e., including both non-PHF and PHF active member payroll) based on current administrative practice.

#### **University Retiree Health Valuation**

The non-PHF (Graded Premium) University MPSERS active member payroll is projected to be \$37.9 million for the year beginning October 1, 2020, and the active member payroll for all University members not eligible for Graded Premium retiree medical coverage is projected to be \$137.3 million for the year beginning October 1, 2020. With the introduction of the PHF, the employer normal cost percent (i.e., 0.92%) is expressed as a percentage of non-PHF (Graded Premium) University MPSERS active member payroll, while the UAAL percent (i.e., 4.83%) is expressed as a percentage of total University member payroll (i.e., including both University MPSERS and non-MPSERS active member payroll) based on current administrative practice.



As previously noted, the payroll floor associated with Public Act 136 of 2016 is not reflected in this valuation report. The amortization payment portion of the employer contribution in dollars for the fiscal year beginning October 1, 2020 is \$8,468,957. The source of this payment, either from the Universities or from the State, does not impact valuation results.

**Comment F:** The fiscal year 2021 employer contribution rates shown include amortization of the unfunded actuarial accrued liability over 18 years, beginning October 1, 2020 for the total MPSERS retiree health valuation. The amortization of the unfunded actuarial accrued liability is over a 16-year period, beginning October 1, 2020 for the University retiree health valuation. The 16-year period was chosen to be consistent with the amortization period used in the 2018 University pension valuation. A shorter amortization period would result in a higher actuarially computed employer contribution.

**Comment G:** It is our understanding that the schedule of decreasing payroll growth assumptions for amortization purposes associated with Public Act 181 of 2018 does not apply to the Universities. As such, a payroll growth assumption for amortization purposes of 2.75% was used in determining the amortization of the UAAL component of the actuarially computed employer contribution for the University retiree health valuation.

**Comment H:** The medical and prescription drug trend rates used in the valuation were changed to better reflect anticipated future experience. The change in medical and drug trend rates increased the actuarial accrued liability by \$316.0 million for the total MPSERS retiree health valuation with \$4.8 million attributable to the University members.

**Comment I:** Assumption and method changes based on the adoption of the findings of the recently completed 5-year Experience Study (2012-2017) were reflected in this valuation. The assumption and method changes associated with the Experience Study increased the actuarial accrued liability by \$584.5 million in the total MPSERS retiree health valuation with \$12.1 million attributable to the University members.

**Comment J:** The employer subsidized October 1, 2018 per person health benefit costs were lower than projected by the 2017 valuation assumptions. The 2017 valuation assumptions projected annual increases of 7.5% October 1, 2018, 7.0% October 1, 2019, trending down to 3.5% annual increases beginning October 1, 2029 for medical and prescription drug claims and Medicare reimbursements. The lower actual increases from 2017 to 2018 resulted in a lower-than-projected actuarially computed employer contribution and accrued liability.

**Comment K:** It is our understanding that the plan is participating in the Medicare Advantage program for calendar year 2019. The September 30, 2018 actuarial valuation was completed under the assumption that the plan will participate in the Medicare Advantage program for each year following the valuation date.



**Comment L:** In a Medicare Advantage program, the liability is based on the difference between the present value of future claims minus the present value of future Medicare reimbursements. For purposes of this valuation, future growth in Medicare reimbursements was assumed to be equal to future growth in medical and prescription drugs claims.

**Comment M:** Future trends in health costs defy accurate prediction. To the extent that future costs increase more (or less) than projected in this report, the computed liabilities and actuarially computed employer contributions will be higher (or lower) than shown in this report.

**Comment N:** Governmental Accounting Standards Board (GASB) Statement No. 74 is effective for the plan year ending September 30, 2017. A separate report was issued to comply with the actuarial requirements of this Statement.

**Comment O:** Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the market value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's obligations. In addition, the measurement is inappropriate for assessing benefit security for the membership.
- (2) The measurement is dependent upon the actuarial cost method, which, in combination with the plan's amortization policy and asset valuation method, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
- (3) The measurement would produce a different result if the market value of assets were used instead of the funding value of assets, unless the market value of assets is used in the measurement.

