GRS Retirement Consulting

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July 11, 2018 - 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, 2017 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valuation of retiree health benefits for current and former employees of the seven Michigan Universities that have withdrawn from the Michigan Public School Employees' Retirement System (for their employees hired on or after January 1, 1996) due to the enactment of Act No. 272 of the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, 2017, and utilized the same actuarial assumptions and methods, plan provisions, and premiums used for the September 30, 2017 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 2020 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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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. 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, 2017 actuarial valuation of the Michigan Public School Employees' Retiree Health Benefits report, dated March 6, 2018. 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 M. 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 Drazilov

Mita D. Drazilov, ASA, FCA, MAAA

Louise Gates

Louise M. Gates, ASA, FCA, MAAA

MDD:cs

Table 1

Summary of Reported Participant Data
Comparison of University and Non-University MPSERS Members
as of September 30, 2017

Reported Program Participants	Total - All MPSERS Members	University MPSERS Members	Non-University MPSERS Members
Active Members			
Graded Premium			
Number	141,991	1,213	140,778
Average age	48.5	57.1	48.4
Average service	15.9	26.9	15.8
Reported payroll (millions)	$ 6,806.4	$ 60.9	$ 6,745.5
Average annual pay	$ 47,936	$ 50,205	$ 47,916
Other Coverage [3]			
Reported payroll (millions)	$ 1,414.4	$ 107.1	
Inactive Vested Members			
Number [1]	2,349	49	2,300
Average age	56.2	57.5	56.2
Retirees and Beneficiaries			
Number [2]	213,989	5,004	208,985
Average age	72.4	74.6	72.3

[1] *Only includes inactive vested persons with 21 or more years of service at termination.*

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

[3] *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.*

Table 2

Development of the Actuarially Computed Employer Contribution as of September 30, 2017 for Fiscal Year 2020

	Fiscal Year Beginning October 1, 2019		
	Full Funding (7.15% Interest)		
	Total - All MPSERS Members	University MPSERS Members	Non-University MPSERS Members
Employer Normal Cost	$ 34,221,716	$ 254,758	$ 33,966,958
Amortization of UAAL [1]	$ 604,162,855	$ 9,246,658	$ 594,916,197
Actuarially Computed Employer	$ 638,384,571	$ 9,501,416	$ 628,883,155

[1] *Unfunded Actuarial Accrued Liabilities (UAAL) were amortized over 19 years from October 1, 2019 in the total MPSERS retiree health valuation (17 years in the University retiree health valuation).*

The amortization of the unfunded actuarial accrued liabilities component of the actuarially computed employer contributions shown in this report have been calculated to increase at the same rate as the projected increase in active member payroll (3.50% per year). The unfunded actuarial accrued liabilities were amortized as a level percent of active member payroll over a period of 19 years in the total MPSERS retiree health valuation (17 years in the University retiree health valuation).

Table 3

Determination of Unfunded Actuarial Accrued Liability as of September 30, 2017

	September 30, 2017		
	Full Funding (7.15% Interest)		
	Total - All MPSERS Members	University MPSERS Members	Non-University MPSERS Members
A. Present Value of Future Benefits			
i) Retirees and Beneficiaries	$ 8,279,266,540	$ 171,750,453	$ 8,107,516,087
ii) Inactive Vested Members	77,034,060	1,673,897	75,360,163
iii) Active Members	6,834,205,837	73,616,247	6,760,589,590
Total Present Value of Future Benefits	$ 15,190,506,437	$ 247,040,597	$ 14,943,465,840
B. Present Value of Future Normal Costs	1,602,806,025	$ 8,598,375	1,594,207,650
C. Actuarial Accrued Liabilities (A-B)	$ 13,587,700,412	$ 238,442,222	$ 13,349,258,190
D. Actuarial Value of Assets	5,177,774,602	112,299,654	5,065,474,948
E. Unfunded Actuarial Accrued Liability (C-D)	$ 8,409,925,810	$ 126,142,568	$ 8,283,783,242
F. Funded Ratio (D/C)	38.11%	47.10%	37.95%

Actuarial Value of Assets as of September 30, 2017 does not include $553.8 million resulting from 3% member contributions collected prior to the passage of Public Act 300. See Table 5 for an allocation of the $553.8 million between University and Non-University.

Table 4

Summary of MPSERS Liability Transfers Between Non-University & University from October 1, 2016 through September 30, 2017

Transfers between segments	
Transfers to University	
a) 6 Non-University actives as of 10/1/2016 who transferred to University actives by 10/1/2017	$ 288,165
b) 0 Non-University terminated vested as of 10/1/2016 who transferred to University actives by 10/1/2017	0
c) 0 Non-University pensioners as of 10/1/2016 who transferred to University actives by 10/1/2017	0
d) 1 Non-University actives as of 10/1/2016 who transferred to University terminated vesteds by 10/1/2017	0
e) 1 Non-University terminated vesteds as of 10/1/2016 who transferred to University terminated vesteds by 10/1/2017	80,084
f) 0 Non-University pensioners as of 10/1/2016 who transferred to University terminated vesteds by 10/1/2017	0
g) 0 Non-University actives as of 10/1/2016 who transferred to University pensioners by 10/1/2017	0
h) 2 Non-University terminated vested as of 10/1/2016 who transferred to University pensioners by 10/1/2017	0
i) 0 Non-University pensioners as of 10/1/2016 who transferred to University pensioners by 10/1/2017	0
j) **Total Transfers into University**	**$ 368,249**
Transfers from University	
k) 9 University actives as of 10/1/2016 who transferred to Non-University actives by 10/1/2017	$ 503,261
l) 3 University terminated vesteds as of 10/1/2016 who transferred to Non-University actives by 10/1/2017	151,836
m) 0 University pensioners as of 10/1/2016 who transferred to Non-University actives by 10/1/2017	0
n) 2 University actives as of 10/1/2016 who transferred to Non-University terminated vesteds by 10/1/2017	59,094
o) 3 University terminated vested as of 10/1/2016 who transferred to Non-University terminated vesteds by 10/1/2017	0
p) 0 University pensioners as of 10/1/2016 who transferred to Non-University terminated vesteds by 10/1/2017	0
q) 0 University actives as of 10/1/2016 who transferred to Non-University pensioners by 10/1/2017	0
r) 0 University terminated vested as of 10/1/2016 who transferred to Non-University pensioners by 10/1/2017	0
s) 5 University pensioners as of 10/1/2016 who transferred to Non-University pensioners by 10/1/2017	57,785
t) **Total Transfers from University**	**$ 771,976**
u) **Total Net Transfers (j - t)**	**$ (403,727)**

Due to eligibility and/or elections in relation to the retiree health benefits, not all transfers will have an associated liability.

Table 5

Allocation of September 30, 2017 MPSERS Assets Between University and Non-University Members

	Total MPSERS Assets	MPSERS Univerisity Assets	MPSERS Non-Univerisity Assets
1. Market Value, Beginning of Year (Total)			
a. Disclosed in Prior Year Report	$ 4,832,178,933	$ 88,917,894	$ 4,743,261,039
b. OAG Audit Adjustment	0	12,541,500	(12,541,500)
c. Adjusted Beginning of Year Assets	$ 4,832,178,933	$ 101,459,394	$ 4,730,719,539
2. Additions			
a. Member Contributions	$ 214,248,867	$ 1,988,018	$ 212,260,849
b. Employer Contributions [1]	794,666,783	16,636,192	778,030,591
c. Net Investment Income [2]	595,264,694	13,200,936	582,063,758
d. Total Additions	$ 1,604,180,344	$ 31,825,146	$ 1,572,355,198
3. Transfers In (Out)	$ 0	$ (403,727)	$ 403,727
4. Deductions			
a. Health Benefit Payments	(702,159,597)	(14,425,022)	(687,734,575)
b. Administrative & Other Expenses [2]	(2,605,149)	(57,349)	(2,547,800)
c. Total Deductions	$ (704,764,746)	$ (14,482,371)	$ (690,282,375)
5. Average Market Value of Assets [4]	$ 4,432,430,434	$ 97,572,631	$ 4,334,857,803
6. Market Value, End of Year (Total)	$ 5,731,594,531	$ 118,398,442	$ 5,613,196,089
7. 3% Member Contributions Collected Prior to PA 300	$ (553,819,929)	$ (6,098,788)	$ (547,721,141)
8. Market Value, End of Year (for Valuation Purposes)	$ 5,177,774,602	$ 112,299,654	$ 5,065,474,948
9. Net, Market Rate of Return [4]	13.36%	13.36%	13.36%

[1] *Includes other governmental contributions in the amount of $4,839 for Total MPSERS assets and $101 for MPSERS University assets. Allocated in proportion to employer contributions not designated as other governmental contributions.*

[2] *Allocated in proportion to average market value (i.e., item 5).*

[3] *For purposes of the Net, Market Rate of Return calculation, only Staff Salaries, Printing, and Postage are considered administrative expenses for fiscal year 2017. Allocated in proportion to average market value (i.e., item 5).*

[4] *The value of the 3% member contributions (both principal and investment earnings) collected prior to PA 300 and held in escrow has been excluded for purposes of determining the net market rate of return and the average market value of assets.*

Table 6

University Experience Gains/(Losses)
During Year Ended September 30, 2017

A. Derivation of Actuarial Gain/(Loss):

1.	Unfunded Actuarial Accrued Liability (UAAL) - Previous Valuation	$ 169,318,832
2.	Total Normal Cost (employer plus member) for Year Ending 9/30/2017	1,955,792
3.	Total Contributions (employer plus member) for Year Ending 9/30/2017	18,624,210
4.	Interest on:	
	a. UAAL: Discount Rate* x (1)	12,698,912
	b. Normal Cost and Contributions: Discount Rate* / 2 x [(2) - (3)]	(625,066)
	c. Net Total: (a) + (b)	12,073,846
5.	Change in UAAL due to Benefit Changes	-
6.	Change in UAAL due to Assumption Changes	12,329,686
7.	Expected UAAL Current Year:	
	(1) + (2) - (3) + (4c) + (5) + (6)	177,053,946
8.	Actual UAAL Current Year	126,142,568
9.	Experience Gain/(Loss): (7) - (8)	50,911,378
	as a percent of beginning of year liability	20.18%

* Discount rate is 7.50%.

Type of Activity

Type of Activity	Gain/(Loss)
Premiums Gains and losses resulting from actual premiums in valuation year versus that assumed from prior valuation.	$ 27,008,475
Investment Income. If there is greater investment income than assumed, there is a gain. If less income, a loss.	4,978,861
OAG Asset Adjustment. The end of year impact of the Office of the Auditor General adjusting the beginning of year University asset balance.	14,216,460
Demographic and Other. Gains and losses resulting from demographic experience, data adjustments, timing of financial transactions, etc.	4,707,582
Composite Gain/(Loss) During Year.	$ 50,911,378

Comments

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, 2017 annual actuarial valuation is used to establish the employer contribution for fiscal year 2020. Therefore, this report presents the actuarially computed employer contribution for fiscal year 2020 (based upon a 7.15% 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

(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 2020 was determined to be $638,384,571 for the total MPSERS retiree health valuation with $9,501,416 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 7.15% 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 7.50% to 7.15% effective with this valuation of MPSERS.

Comments

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.

The market value of assets attributable to University benefits as of the September 30, 2016 retiree health valuation was $88,917,894. During the Governmental Accounting Standards Board (GASB) Statement No. 74 valuation, ORS, in conjunction with the Office of the Auditor General (OAG), determined that an additional $12,541,500 should have been allocated to the University assets. This September 30, 2017 retiree medical valuation reflects the additional money in the University assets (Table 5).

Comment D: Based on information from the plan sponsor, $5,731.6 million of assets were held in trust for all OPEB benefits as of September 30, 2017. However, at the direction of ORS, $553.8 million attributable to 3% active member contributions collected prior to the passage of Public Act 300 was not included in valuation assets for purposes of determining the funded status and the actuarially computed employer contribution. As provided by ORS, $6.1 million attributable to 3% University active member contributions collected prior to the passage of Public Act 300 was not included in valuation assets for purposes of determining the funded status and the actuarially computed employer contribution for University members.

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.

<u>Total Retiree Health Valuation</u>

The non-PHF active member payroll is projected to be $6,581.1 million for the year beginning October 1, 2019, and the PHF active member payroll is projected to be $2,508.9 million for the year beginning October 1, 2019. With the introduction of the PHF, the employer normal cost percent (i.e., 0.52%) is expressed as a percentage of non-PHF active member payroll, while the UAAL percent (i.e., 6.65%) is expressed as a percentage of total payroll (i.e., including both non-PHF and PHF active member payroll) based on current administrative practice.

Comments

University Retiree Health Valuation

The non-PHF (Graded Premium) University MPSERS active member payroll is projected to be $43.9 million for the year beginning October 1, 2019, and the active member payroll for all University members not eligible for Graded Premium retiree medical coverage is projected to be $142.3 million for the year beginning October 1, 2019. With the introduction of the PHF, the employer normal cost percent (i.e., 0.58%) is expressed as a percentage of non-PHF (Graded Premium) University MPSERS active member payroll, while the UAAL percent (i.e., 4.97%) 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.

The payroll floor associated with the enactment of Act No. 136 of the Public Acts 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, 2019 is $9,246,658. The source of this payment, either from the Universities or from the State, does not impact valuation results.

Comment F: The fiscal year 2020 employer contribution rates shown include amortization of the unfunded actuarial accrued liability over 19 years, beginning October 1, 2019 for the total MPSERS retiree health valuation. The amortization of the unfunded actuarial accrued liability is over a 17-year period, beginning October 1, 2019 for the University retiree health valuation. The 17-year period was chosen to be consistent with the amortization period used in the 2017 University pension valuation. A shorter amortization period would result in a higher actuarially computed employer contribution.

Comment G: The reported employer subsidized October 1, 2017 per person health benefit costs were lower than projected by the 2016 valuation assumptions. The 2016 valuation assumptions projected annual increases of 7.5% October 1, 2017, 7.0% October 1, 2018, trending down to 3.5% annual increases beginning October 1, 2028 for medical and prescription drug claims and Medicare reimbursements. The lower actual increases from 2016 to 2017 resulted in a lower-than-projected actuarially computed employer contribution and accrued liability.

Comment H: It is our understanding that the plan is participating in the Medicare Advantage program for calendar year 2018. The September 30, 2017 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 I: 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 overall claims.

Comment J: 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.

Comments

Comment K: Comment F indicates the unfunded actuarial accrued liability for the entire MPSERS retiree health plan is expected to be amortized by September 30, 2038. It also indicates that the unfunded actuarial accrued liability for the combined University retiree health plan group is expected to be amortized by September 30, 2036. As part of our analysis of the combined University retiree health valuation, we forecasted expected disbursements and expected assets and found that for any given year, there were always enough assets at the beginning of the year to fund at least the coming year's expected disbursements, assuming all assumptions are met.

Comment L: Governmental Accounting Standards Board (GASB) Statement No. 74 is effective for the plan year ending September 30, 2017. Separate reports (one for University and one for Non-University) were issued to comply with the actuarial requirements of this Statement.

Comment M: 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, and
(2) The measurement is inappropriate for assessing the need for or the amount of future employer contributions.