



Date: September 28, 2021

To: Ms. Karen Carraher, Executive Director, Ohio Public Employees Retirement System

From: Brian B. Murphy, FSA, EA, MAAA, FCA, PhD and Mita D. Drazilov, ASA, FCA, MAAA  
Gabriel, Roeder, Smith & Company

cc: James Sparks, ASA, MAAA

**Re: Alternative Retirement Plan (ARP) Mitigating Rate  
for the 5-Year Period Beginning July 1, 2022**

Our original study on this matter was dated December 23, 2016. We have prepared this document to satisfy the ongoing requirements of Ohio Revised Code (ORC) §145.222. That section requires the Board to engage an actuary to complete an actuarial study to determine the percentage of an electing employee's compensation to be contributed by a public institution of higher education under ORC §3305.06(D) related to ARP participation. We have based our calculations upon the specific provisions of ORC §145.222 as described in statutes that are current as of the date of this writing. The most recently completed annual actuarial valuation under ORC §145.22 available at this time is the December 31, 2020 valuation with adjustment for the assumption changes adopted by the Board in connection with the 2016-2020 experience study, which we used for purposes of this study. In particular, the assumed rate of return is 6.90% and the assumed payroll growth rate is 2.75% per year. Please review the methods and figures in this document carefully prior to use, and let us know if you have any questions or if you see any issues with the methods, calculations, or statutory interpretations.

**Background:** House Bill No. 586 of the 121<sup>st</sup> General Assembly established the ARPs. Its provisions became effective March 31, 1997. Initially, ARPs were only available to "Academic or Administrative Employees" of public institutions of higher education. Statutes were subsequently revised to provide that after August 1, 2005 any eligible employee of a public institution who had less than 5 years of service credit in a State retirement system could also join an ARP.

ORC §3305.06(D) provides that public institutions of higher education shall contribute a percentage of each ARP employee's pay to OPERS (or STRS or SERS) sufficient to mitigate any negative financial impact of the ARP on the affected retirement system. The mitigating contribution is to continue until the unfunded actuarial accrued liabilities (UAAL or UAL) for all benefits except health care benefits and liabilities for any benefit increases provided after March 31, 1997 are fully amortized.

We understand the intent of ORC §3305.06 to be to permit OPERS to charge ARP employers for some share of the unfunded liability that existed on or about the time that the ARPs were established. An early interpretation was that once unfunded liabilities were paid off, the ARPs could no longer be charged a mitigating rate. In practice, that did not work well, because unfunded liabilities were paid off at one point and then reemerged subsequently due to investment losses.

**Methodology:** OPERS prepared Chart 1 on page 2 that develops certain statistics related to ARP contributions through December 31, 2015. We have reviewed Chart 1 for general reasonableness, but did not perform an audit of the figures.

Chart 1									
Year	ARP Members	ARP Payroll	ARP Payroll Increase %	DB ROA	Mitigating Rate	UAL Funding Rate	Rate Difference	Accum ARP Contribution	Accum UAL Contribution
1998	677	\$ 7,142,046		14.35%	4.50%	3.10%	-1.40%	\$ 343,937	\$ 236,934
1999	3,972	90,218,211	1163.20%	11.94%	6.00%	3.10%	-2.90%	6,115,184	3,225,817
2000	4,623	130,660,437	44.83%	-0.74%	0.00%	1.10%	1.10%	6,069,932	4,633,886
2001	4,844	147,930,195	13.22%	-4.60%	0.00%	1.50%	1.50%	5,790,715	6,588,244
2002	4,554	159,463,202	7.80%	-10.74%	0.00%	1.50%	1.50%	5,168,792	8,141,735
2003	4,619	174,086,517	9.17%	25.39%	0.00%	2.30%	2.30%	6,481,148	14,702,066
2004	4,874	200,802,095	15.35%	12.50%	0.00%	3.50%	3.50%	7,291,292	23,998,531
2005	5,360	219,267,086	9.20%	9.25%	0.00%	3.80%	3.80%	7,965,737	34,930,225
2006	6,497	268,978,233	22.67%	15.05%	0.00%	3.50%	3.50%	9,164,580	50,293,336
2007	7,058	329,086,705	22.35%	8.89%	0.29%	3.70%	3.41%	10,975,481	67,474,172
2008	7,030	345,565,224	5.01%	-27.15%	0.77%	2.40%	1.63%	10,276,241	56,263,308
2009	6,995	361,606,711	4.64%	19.09%	0.77%	3.90%	3.13%	15,280,381	82,413,558
2010	7,049	373,449,661	3.28%	13.98%	0.77%	3.80%	3.03%	20,488,760	109,096,390
2011	7,214	386,836,435	3.58%	0.36%	0.77%	4.80%	4.03%	23,546,518	128,090,689
2012	7,368	400,357,506	3.50%	14.54%	0.77%	4.80%	4.03%	30,271,981	167,297,723
2013	7,638	426,973,836	6.65%	14.38%	0.77%	10.80%	10.03%	38,143,884	240,709,626
2014	7,922	452,212,466	5.91%	6.96%	0.77%	8.90%	8.13%	44,400,550	299,094,813
2015	8,281	479,345,271	6.00%	0.31%	0.77%	8.90%	8.13%	48,234,868	342,749,828

The chart indicates that if the ARP participants had been in OPERS, the accumulated value of UAAL contributions received on behalf of ARP participants would have been \$342.7 million as of December 31, 2015. This figure can be compared with the accumulated value of contributions actually received through that date, which was \$48.2 million. The estimated shortfall as of December 31, 2015 is therefore the difference between those two figures or \$294.5 million. This is the "Historical Liability" described in ORC §145.222(A)(4). In the original report on this topic, dated December 23, 2016, perpetual amortization of the historical liability was estimated to require 2.42% of ARP payroll. The historical liability and the percentage required to amortize it are carried over unchanged into future calculations in accordance with ORC §145.222(D).

Chart 2 on the next page is intended to calculate the ARP mitigating rate reflecting the provisions of ORC §145.222(D). Those provisions say that, within certain bounds, the ARP mitigating rate is the sum of the perpetual amortization of the original historical liability and the 30 year rolling amortization of the ARP share of other remaining liabilities.

The statute refers to fiscal years in a few places and since we only have calendar year information, we had to use calendar year information. We based the Traditional Plan (TP) UAAL in Row 1 of Chart 2 on the market value of assets (MVA) as opposed to the actuarial value of assets. We did so because it is anticipated that the resulting ARP mitigating rate will be fixed for at least 5 years, which is longer than the smoothing period used to determine the funding value of assets. Please verify that calendar year data and market value of assets are acceptable interpretations of the statutory requirements.



Chart 2		
ARP Mitigating Rate Determination as of December 31, 2020		
1 Traditional Plan UAAL	Based on MVA	\$16,671,706,285
<b>2 Historical Liability: ORC §145.222(A)(4)</b>	<b>From December 23, 2016 Study</b>	<b>294,514,960</b>
3 Non-historical Portion of (1)	1-2	16,377,191,325
4 2020 ARP Payroll	Supplied By OPERS	585,212,992
5 2020 TP Payroll	December 31, 2020 Valuation	13,498,676,785
	Payroll	
6 Total 2020 ARP +TP Payrolls	4+5	14,083,889,777
<b>7 Compensation Ratio: ORC §145.222(A)(2)</b>	<b>4/6</b>	<b>4.1552%</b>
8 ARP % of Row 3	3 x 7	680,504,128
9 Projected 2021 ARP Payroll	1.0275 x 4	601,306,349
10 30-year Amortization Factor		17.3214
<b>11 30 year amortization of 8: ORC §145.222 (D)(1)</b>	<b>8/9/10</b>	<b>6.53%</b>
<b>12 Perpetual Amortization of Row 2: ORC §145.222 (C)(1)</b>	<b>From December 23, 2016 Study</b>	<b>2.42%</b>
<b>13 Preliminary Mitigating Rate: ORC §145.222(D)(2)</b>	<b>(11 +12) x 25%</b>	<b>2.24%</b>
14 Maximum Mitigating Rate: ORC §145.222(D)(2)		4.50%
15 Minimum Mitigating Rate: ORC §145.222(D)(2)	12. x 25%	0.61%
<b>16 Final Mitigating Rate: ORC §145.222(D)(2)</b>	<b>Max(Min(13,14),15)</b>	<b>2.24%</b>

Our conclusion is that the ARP mitigating rate for the 5-year period beginning July 1, 2022 will be 2.24% of ARP Payroll unless the Board selects a different interpretation of the statute.

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Brian B. Murphy and Mita D. Drazilov 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.

*This communication shall not be construed to provide tax advice, legal advice or investment advice.*

