



September 27, 2022

Ms. Bethany Rhodes, Director  
Ohio Retirement Study Council  
30 East Broad Street, 2<sup>nd</sup> Floor  
Columbus, OH 43215

Dear Ms. Rhodes:

I have reviewed the Actuarial Audit Report for HPRS completed by PTA/KMS Actuaries. In the summary, PTA/KMS points out two concerns regarding the assumptions used by Foster & Foster Actuaries and Consultants. HPRS obtained a response from Foster & Foster, which provides a reference to their methodology as it relates to the actuarial standards of practice, and a copy is enclosed.

Additionally, a copy of the HPRS Funding Policy is enclosed. Although PTA/KMS references the policy, they do not mention the strict criteria provided for in the policy before the HPRS board can consider a Cost-Of-Living-Adjustment (COLA). This is a critical piece that should be taken into consideration.

Finally, HPRS will engage with Foster & Foster to conduct an actuarial investigation to review the experience of HPRS members, retirants, and beneficiaries and evaluate the actuarial assumptions used in the actuarial valuation. This investigation will cover the five-year period from December 31, 2017 to December 31, 2022. The report will be delivered to the Ohio Retirement Study Council (ORSC) no later than November 1, 2023.

Sincerely,

Carl Roark, Ph.D.  
*Executive Director*  
direct dial 614.430.3557  
[c.roark@ohprs.org](mailto:c.roark@ohprs.org)

August 8, 2022

Mr. Carl Roark  
Executive Director  
Ohio Highway Patrol Retirement System  
1900 Polaris Parkway  
Suite 201  
Columbus, OH 43240

RE: Actuarial Audit

Dear Mr. Roark:

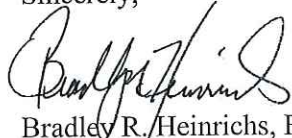
I am writing in response to a letter dated June 23, 2022, from Willam Fornia, the actuary who conducted an actuarial audit of the Ohio Highway Patrol Retirement System (HPRS). His letter raised concern that we were not including an explicit assumption that a Cost-of Living Adjustment (COLA) will be granted annually. In fact, we assume that no future COLA will be granted, essentially suggesting that the COLA is NOT substantively automatic. As you know, the Board has gone to great lengths to refine and implement a COLA policy which requires that the plan is well-funded even after undergoing an intense stress-test before any COLA can be considered. It is our view that any future COLA being provided will be ad-hoc in nature and not something that should be counted on or considered when developing actuarial liabilities.

Mr. Fornia references the Governmental Accounting Standards Board (GASB) in his letter which provide input on this topic in the GASB 68 implementation guide. After reviewing this guide, we feel the guide supports our conclusion that the HPRS COLA is not substantively automatic. Specifically, question 55 asks "Q -- A defined benefit pension plan's enabling statute provides that the board of trustees can annually authorize a COLA not to exceed a specified percentage increase or the change in the consumer price index, whichever is lower. The maximum allowable COLA has always been authorized. Should the effects of this COLA provision be included in the projection of future benefit payments?" The answer provided by the GASB 68 implementation guide reads "A -- This COLA is not automatic because approval of the board of trustees is required to authorize the benefit increase. Therefore, the effects of the COLA provision should be included in the projection of future benefit payments only if the provision is evaluated to be substantively automatic."

Furthermore, Footnote 9 of Statement 68 identifies some of the factors that might be relevant in making this determination -- the historical pattern of granting the changes, the consistency in the amounts of the changes or in the amounts of the changes relative to a defined cost-of-living or inflation index, and whether there is evidence to conclude that changes might not continue to be granted in the future despite what might otherwise be a pattern that would indicate such changes are substantively automatic. As you know, in addition to the strict criteria that might allow a COLA to be considered in the future, the Board of Trustees must vote to approve and authorize any such COLA, and as you know, the Board has not regularly authorized COLAs in the past. Hence, we feel comfortable in our approach in this matter and do not feel it is appropriate to include an automatic COLA in determining the liabilities which might trigger future benefit reductions or contribution increases.

If you would like to discuss this request further, I would be happy to do so.

Sincerely,

A handwritten signature in black ink, appearing to read "Bradley R. Heinrichs". The signature is written in a cursive style with a large initial "B" and "H".

Bradley R. Heinrichs, FSA, EA, MAAA  
President / CEO



September 22, 2022

Mr. Carl Roark  
Executive Director  
Ohio Highway Patrol Retirement System  
1900 Polaris Parkway  
Suite 201  
Columbus, OH 43240

RE: Actuarial Audit

Dear Mr. Roark:

I am writing in response to a concern raised in the report issued by the Ohio Retirement Study Council dated September 12, 2022. The report details a possible issue with mortality improvement rates used in the most recent actuarial valuation of the Ohio Highway Patrol Retirement System, stating that the improvement scale as applied results in mortality rates less optimistic than those widely used. Commonly, as stated in the report, mortality improvement rates are applied on a fully generational basis, resulting in mortality improvements far into the future. However, we believe that our assumptions projecting mortality improvement five years beyond the valuation date with none thereafter is appropriate for the following reasons:

- Mortality improvement scales, as published by the Society of Actuaries, have tended to overestimate expected mortality improvement compared to actual in recent years. Given this trend, we believe it is appropriate to project mortality improvements for a limited number of years beyond the valuation date.
- The Retirement System's mortality experience has supported less mortality improvement as ages increase than recently published scales would suggest. Limiting mortality improvement to years nearer the valuation date allows mortality rates to align with the actual experience of the Plan more closely. This is supported by the results of an experience study conducted in 2020.
- Finally, while the Actuarial Standards of Practice suggest that actuaries consider mortality improvements in their development of liabilities, the standards do not opine as to whether or not the improvements be perpetual in nature. As stated in our report, we have improved mortality from the date of the table up until 5 years beyond the valuation date, and we believe that assumption to be most in-line with our expectation of future experience, as supported from prior plan experience.

As stated in recent valuations, this assumption will continue to be monitored as part of the regular actuarial valuation process and examined in even greater detail in an upcoming Experience Study. Adjustments will be made to ensure assumptions align with experience as needed.

Sincerely,



Bradley R. Heinrichs, FSA, EA, MAAA  
President / CEO



## 8.11 Funding Policy

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### FUNDING OBJECTIVE:

Effective April 21, 2022 (the "Effective Date"), the Board adopts this Funding Policy to assist the System in meeting the objectives of funding the long-term cost of benefits in an equitable manner and by maintaining intergenerational equity. Below are the mission and vision statements which can be found on the System's website <https://www.ohprs.org/ohprs/missionStatement.jsp>.

*Mission Statement* - Provide stable pension services that are fiscally responsible, prudently administered, and delivered with understanding and responsiveness to all members and beneficiaries.

*Vision Statement* – Maintain a financially sound pension system that is a leader in the oversight of our investments and liabilities, providing for the long-term financial wellbeing of our retirement system.

The System will strive to satisfy these objectives by targeting a 100% funded ratio, which is the ratio of the System's Actuarial Value of Assets divided by the System's Actuarial Accrued Liability, by 2049.

This Funding Policy also establishes the philosophy, objectives, and protocols of the Board as they pertain to setting annual rates for Employee Contributions, Cost-of-Living Adjustments (COLAs), and health care funding contributions.

This Funding Policy sets forth the System's strategy for achieving these objectives.

The execution of this Funding Policy should be accomplished in a manner that fulfills the statutory requirements of ORC Chapter 5505 and fairly represents the entire membership body. This Funding Policy will be actively managed as part of the decision-making process related to finances, benefits, fund balances, investment returns, revenues, and expenses to ensure it remains comprehensive and sound.

### STRATEGIC PLAN:

The System adopted a Strategic Plan for years 2019-2024 which sets forth the mission, vision, values, goals, objectives, and performance measures to address future fiscal and health care challenges in an ever-changing economic environment. A copy of the Strategic Plan can be found at <https://www.ohprs.org/ohprs/downloads/miscDocs/StrategicPlanning.pdf> and the goals applicable to this Funding Policy have been restated below.

*Goal #1* – Ensure the financial soundness and effective management of the Highway Patrol Retirement System while maintaining an Amortization Period of no more than 30 years with a System design goal to reduce the Unfunded Actuarial Accrued Liability (UAAL) to a fully-funded System by 2049.

*Goal #2* – Ensure continued financial soundness of the retiree Health Care Fund (HCF) with a System design policy goal to maintain a minimum 20-year funding balance by 2029 and be fully-funded by 2050 while maintaining a program that is valued and responsive to the needs of the members.



## **AMORTIZATION METHOD:**

Based on the nature of the System's fixed-rate contributions, there is no explicit amortization method; instead, the funding period required to amortize any existing UAAL (such period, the "Amortization Period") is determined in conjunction with each Actuarial Valuation report. The Amortization Period is calculated as the present value of the expected contributions available to fund the UAAL each year, after considering the contributions allocated to fund the Normal Cost rate.

ORC Section 5505.121, *Amortizing state highway patrol retirement system's unfunded actuarial accrued pension liabilities*, states "the state highway patrol retirement board shall establish a period of not more than thirty years to amortize the state highway patrol retirement system's unfunded actuarial accrued pension liabilities. If in any year the period necessary to amortize the unfunded actuarial accrued pension liability exceeds thirty years, as determined by the annual actuarial valuation required by Section 5505.12 of the Revised Code, the board, not later than ninety days after receipt of the valuation, shall prepare and submit to the Ohio retirement study commission and the standing committees of the house of representatives and the senate with primary responsibility for retirement legislation a report that includes the following information:

- A. The number of years needed to amortize the unfunded actuarial accrued pension liability as determined by the annual actuarial valuation; and
- B. A plan approved by the board that indicates how the board will reduce the amortization period of unfunded actuarial accrued pension liability to not more than thirty years."

## **ESTABLISHMENT OF FUNDING BENCHMARK:**

Since the Employer and Employees each contribute to the System at a fixed rate, it is imperative that the Board be aware of how these rates compare to a rate that is actuarially determined. In this section, an Actuarially Determined Contribution (ADC) benchmark will be created for comparative purposes only and will be constructed under the actuarial assumptions and methods identical to those disclosed in the annual Actuarial Valuation report.

In conjunction with each annual Actuarial Valuation, the System's actuary will calculate the ADC benchmark by determining the fixed-rate contribution rates that would result in a 30-year Amortization Period. The System's actuary will also prepare a comparison of the ADC benchmark with the actual fixed contributions being received by the System each year.

## **OVERSIGHT AND MONITORING:**

As part of its fiduciary duty, the Board will oversee and monitor the ongoing solvency of the System and the adequacy of the scheduled contribution rates. In doing so, the Board will take the following actions or arrange for them to occur:

*Annual Actuarial Valuation* – The Board shall have prepared annually by or under the supervision of an actuary an Actuarial Valuation of the pension assets, liabilities, and funding requirements of the System as established pursuant to Section 5505.12 of the ORC.

*Review of Actuarial Assumptions* – The Board shall, at least once in each five-year period, have prepared by or under the supervision of an actuary an actuarial investigation of pertinent actuarial assumptions used in the Actuarial Valuation report as established pursuant to Section 5505.12 of the ORC.

*Deferred Retirement Option Plan (DROP) Analysis* – The Board shall, at least once in each five-year period, have prepared by or under the supervision of an actuary an actuarial investigation of the DROP established under Section 5505.50 of the ORC. The investigation shall include an examination of the financial impact, if any, on the retirement system of offering the plan to members as established pursuant to Section 5505.12 of the ORC.



*Review of Funding Policy* – The Board will review this Funding Policy periodically, but no less frequently than in connection with any actuarial experience study.

## **BENEFIT / CONTRIBUTION IMPROVEMENTS:**

In 2012, Amended Substitute Senate Bill 345 granted the Board the authority to set Employee Contribution Rates and grant Cost-of-Living Adjustments as the Board deems necessary to comply with the annual Actuarial Valuation requirements of ORC 5505.121.

This section establishes protocols of the Board as they pertain to, but not limited to, setting annual rates for Employee Contributions, COLAs, and health care funding contributions. A primary objective stated with respect to *Goal #1* of the above referenced Strategic Plan is to create a funding policy that will fairly and equitably address the annual setting of Employee Contribution and COLA.

The procedure outlined below provides the Board adequate direction regarding how, when, and if modifications to benefits or contributions will be made by establishing clear pre-defined criteria and defensible parameters which can be communicated to all stakeholders. To the greatest extent possible, the established guidance will produce a decision-making process for the Board which relies on quantitative results. The analysis will be performed by the System's actuary following completion of the annual Actuarial Valuation report.

A decision tree summarizing the step-by-step analysis outlined below and several examples are also included in this section.

## **ANALYSIS:**

### **Step 1 – Determine if current Actuarial Valuation resulted in Amortization Period (using Market Value of Assets) which yields no negative amortization**

If there is negative amortization, there is no availability for improvements. If negative amortization does not exist, move on to Step 2.

### **Step 2 – Determine collective adjustment amount available for improvements**

- A. Determine increase in Actuarial Accrued Liability available such that Amortization Period after improvement yields no negative amortization
- B. Employ Sensitivity Analysis (aka "Stress Test")  
Determine if Amortization Period remains under 25 years if System realizes a 0% investment return for two years immediately following valuation date
  - i. If yes, determine increase in Actuarial Accrued Liability available (as of valuation date)
  - ii. If no, there is no availability for improvements
- C. The amount available for improvements is redetermined by taking the lesser of the results from Step 2A and 2B.

### **Step 3 – Determine amount available for retirees in form of COLA**

Lesser of:

- A. 45% of total amount available for improvements (as determined in Step 2C)
- B. Increase in Actuarial Accrued Liability associated with COLA which is equal to the change in Consumer Price Index (CPI) over valuation year (maximum of 3%)

**Step 4 – Determine amount available for active employees in form of contribution rate reduction**

Active allocation is equivalent to retiree allocation (as determined in Step 3).

Convert the allocation to Employee Contribution Rate reduction by spreading available amount over Present Value of Future Salaries.

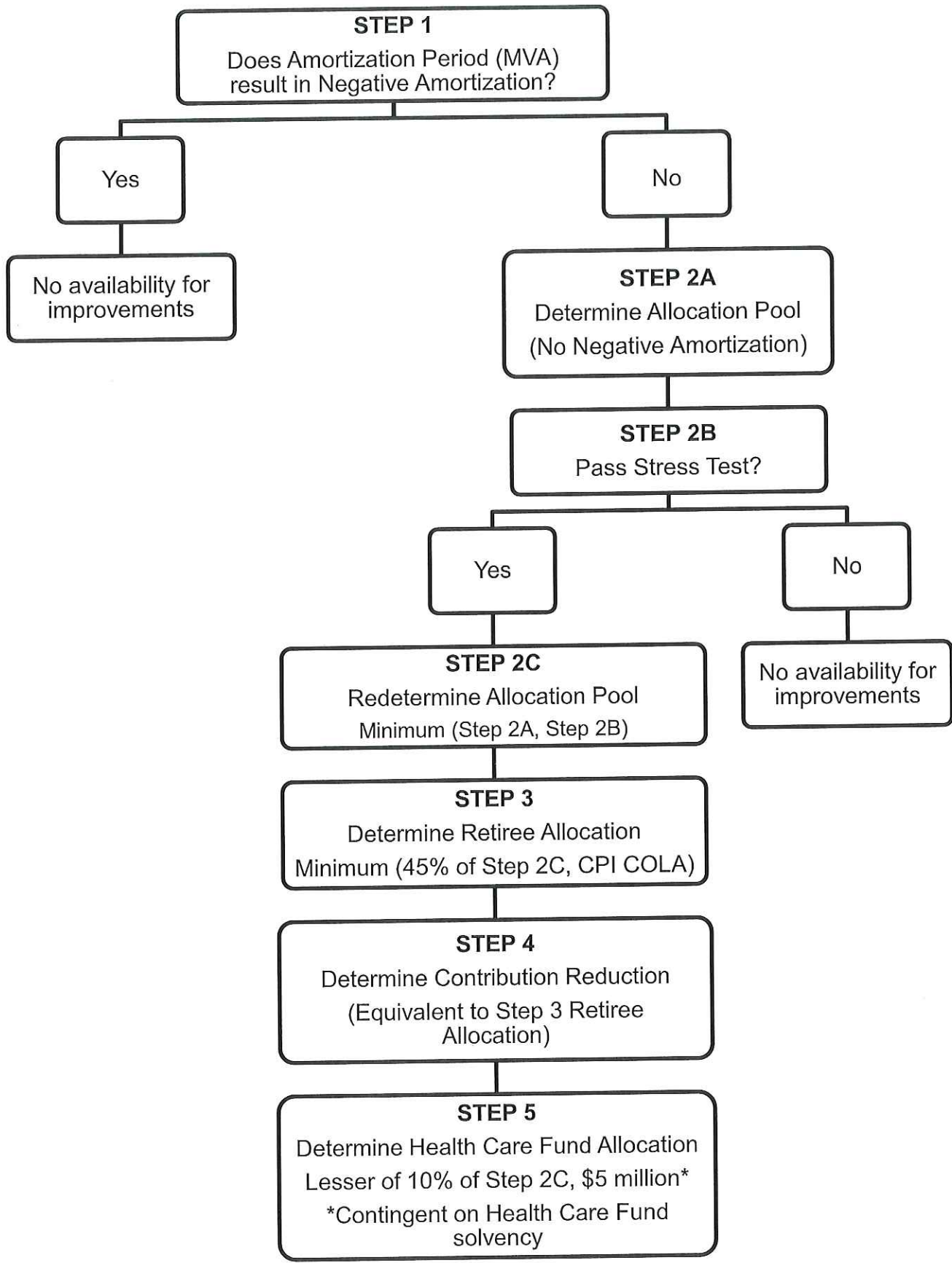
**Step 5 – Determine amount available for health care funding contribution**

Lesser of:

- A. 10% of total amount available for improvements (as determined in Step 2C)
- B. \$5.0 million

\*NOTE\* – Allocation to Health Care Fund will be made only if the Health Care Fund is projected to be insolvent in fewer than twenty (20) years.





**EXAMPLE SCENARIOS:**

	Scenario A	Scenario B	Scenario C	Scenario D
<b>Step 1</b>				
Amortization Period	25 years	19 years	16 years	7 years
Negative Amortization?	Yes	No	No	No
<b>Step 2A</b>				
Available Allocation Pool		\$15 million	\$45 million	\$300 million
<b>Step 2B</b>				
Pass Stress Test?		No	Yes	Yes
Available Allocation Pool		\$0	\$10 million	\$125 million
<b>Step 2C</b>				
Redetermine Allocation Pool (Min Step 2A, Step 2B)		\$0	\$10 million	\$125 million
<b>Step 3</b>				
45% of Pool			\$4.5 million	\$56.3 million
COLA Cost (CPI, Max 3.0%)			\$8.0 million (2.0%)	\$25 million (3.0%)
Retiree Allocation (Min 45% of Pool, COLA Cost)			\$4.5 million	\$25 million
Final COLA Rate			1.1%	3.0%
<b>Step 4</b>				
Active Allocation PV of Future Salaries			\$4.5 million \$900 million	\$25 million \$900 million
Contribution Rate Reduction			0.5%	2.8%
<b>Step 5</b>				
Years to Insolvency			<20 years	>=20 years
10% of Pool			\$1.0 million	\$12.5 million
Health Care Fund Allocation* (Max \$5 Million)			\$1.0 million	\$0
*Contingent on Years to Insolvency				
<b>Summary</b>				
COLA Rate	N/A	N/A	1.1%	3.0%
Contribution Rate Reduction	N/A	N/A	0.5%	2.8%
Health Care Fund Allocation	N/A	N/A	\$1.0 million	N/A



## APPENDIX - GLOSSARY OF TERMS:

*Actuarial Accrued Liability (AAL)* – Equals the actuarial present value of future benefits less the actuarial present value of future normal costs.

*Actuarial Valuation* – Report produced annually for HPRS which provides a best estimate of the system's actuarial liabilities and funding metrics as of December 31. This estimate helps ensure that current assets and future expected contributions will be sufficient to provide benefits to members. Future liabilities are determined by applying a set of actuarial assumptions to project the occurrence, amount and timing of benefits that will become payable.

*Actuarial Value of Assets (AVA)* – Represents the Market Value of Assets with an adjustment to uniformly spread investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a four-year period.

*Amortization Period* – Funding period (in years) required to pay off any existing Unfunded Actuarial Accrued Liability (UAAL). The rate of annual contributions which are allocated to pay off the UAAL is the Employer Contribution Rate plus the Employee Contribution Rate, less the Normal Cost rate.

*Consumer Price Index (CPI)* – Consumer Price Index for All Urban Consumers (CPI-U) percent change for the preceding twelve (12) month period ending December 31<sup>st</sup>.

*Cost-of-Living Adjustment (COLA)* – Any type of post-retirement benefit increase beyond the base benefit at the time of retirement. The HPRS Board has the authority to set the annual COLA rate between 0.0% to 3.0%.

*Employee Contribution Rate* – The percentage deducted from active employee compensation. The HPRS Board has the authority to set the rate between 10.0% to 14.0% of compensation.

*Employer Contribution Rate* – The percentage contribution of active employee compensation on behalf of the employer.

*Health Care Fund* – Access to health care is provided in accordance with ORC 5505.28 and is financed through a combination of employer contributions and retiree premiums, co-pays and deductibles on covered health care expenses, drug subsidies and rebates, and investment returns.

*Interest Rate* – The investment return assumption used in the most recently approved Actuarial Valuation report by the Board of Trustees.

*Market Value of Assets (MVA)* – Fair market value of System assets as of the valuation date.

*Negative Amortization* - when the expected UAAL payment for the System is less than the assumed interest charge on the existing UAAL; determined as a function of the Amortization Period, Interest Rate, Payroll Growth Rate, and UAAL.

*Normal Cost* – Equals the current year's cost for benefits yet to be funded.

*Payroll Growth Rate* – Equal to the payroll growth assumption used in the most recently approved Actuarial Valuation report by the Board of Trustees.

*Present Value of Future Salaries* – Equals the single sum value on the valuation date of all future salaries to be paid to current members.

*Unfunded Actuarial Accrued Liability (UAAL)* – Equals the difference between the Actuarial Accrued Liability and the asset value.

**REVISIONS:**

*Revised, April, 2022*

**REVIEWED:**

*Approved with revisions, April 21, 2022*  
*Approved by HPRS Board, April 18, 2019*