County Employees Retirement System
Board of Trustees – Regular Meeting
November 8, 2023, at 2:00 pm ET (1:00 pm CT)
Live Video Conference/Facebook Live

AGENDA

1. Call to Order	**Betty Pendergrass**
2. Opening Statement	**Eric Branco**
3. Roll Call	**Sherry Rankin**
4. Public Comment	**Sherry Rankin**
5. Approval of Minutes* -- September 7, 2023 and September 13, 2023	**Betty Pendergrass**
6. Actuarial Committee Report	**Mike Foster**
a. 2023 Actuarial Valuation*	**Danny White**
b. Annuity conversion & Service Purchase Rates*	**Mike Foster**
7. Joint Retiree Health Plan Committee Report	**Jerry Powell** **Connie Pettyjohn**
8. Administrative	
a. ByLaw amendments*	**Betty Pendergrass**
b. CEO Contract*	**Betty Pendergrass**
9. Closed Session*	**Eric Branco**
10. Adjourn	**Betty Pendergrass**

***Board May Take Action**

MINUTES OF MEETING
COUNTY EMPLOYEES RETIREMENT SYSTEM
AND
KENTUCKY RETIREMENT SYSTEMS
BOARDS OF TRUSTEES SPECIAL CALLED MEETING
LEGAL EDUCATION: ANATOMY OF A CIVIL LAWSUIT
SEPTEMBER 7, 2023, AT 10:00 A.M. ET
VIA LIVE VIDEO TELECONFERENCE

At the Special Called meeting of the County Employees Retirement System (CERS) Board of Trustees and the Kentucky Retirement Systems (KRS) Board of Trustees held on September 7, 2023, the following CERS Trustees were present: Betty Pendergrass (Chair), Dr. Patricia Carver, Michael Foster, JT Fulkerson, Dr. Merl Hackbart, William O'Mara, and Jerry Powell. The following KRS Trustees were present: Lynn Hampton (Chair), Ramsey Bova, Mary Eaves, Dr. Crystal Miller, Prewitt Lane, and Mr. Summers V. Staff members present were CERS CEO Ed Owens, III, KRS CEO John Chilton, David Eager, Erin Surratt, Michael Lamb, Michael Board, Leigh Ann Davis, Victoria Hale, Ashely Gabbard, Katie Park, Phillip Cook and Sherry Rankin.

Ms. Pendergrass called to order the Special Called Meeting of the CERS Board of Trustees.
Ms. Hampton called to order the Special Called Meeting of the KRS Board of Trustees.

Mr. Board read the Legal Public Statement.

Ms. Rankin called Roll for the CERS and KRS Boards of Trustees.

There being no ***Public Comment*** submitted, Mr. Board presented ***The Anatomy of a Civil Lawsuit*** *(Video 00:11:25 to 01:02:15).*

Ms. Pendergrass ***adjourned*** the Special Called Meeting of the CERS Board of Trustees.
Ms. Hampton ***adjourned*** the Special Called Meeting of the KRS Board of Trustees.

The remainder of this page left blank intentionally

CERTIFICATION

I do certify that I was present at this meeting, and I have recorded the above actions of the Trustees on the various items considered by it at this meeting. Further, I certify that all requirements of KRS 61.805-61.850 were met in conjunction with this meeting.

____
Recording Secretary

I, the Chair of the Board of Trustees of the County Employees Retirement System, do certify that the Minutes of Meeting held on September 7, 2023, were approved on November 8, 2023.

____
Chair of the Board of Trustees

I have reviewed the Minutes of the September 7, 2023, Board of Trustees Meeting for content, form, and legality.

____
Executive Director
Office of Legal Services

MINUTES OF MEETING
COUNTY EMPLOYEES RETIREMENT SYSTEM
BOARD OF TRUSTEES MEETING
SEPTEMBER 13, 2023, AT 2:00 P.M. ET
VIA LIVE VIDEO TELECONFERENCE

At the Meeting of the County Employees Retirement System Board of Trustees held on September 13, 2023, the following members were present: Betty Pendergrass (Chair), Dr. Patricia Carver, George Cheatham, Michael Foster, JT Fulkerson, Dr. Merl Hackbart, Dr. Martin Milkman, William O'Mara, and Jerry Powell. Staff members present were CERS CEO Ed Owens, III, David Eager, Rebecca Adkins, Erin Surratt, Connie Pettyjohn, Michael Lamb, Connie Davis, Elizabeth Smith, Michael Board, Victoria Hale, Leigh Ann Davis, Carrie Slayton, Nathan Goodrich, D'Juan Surratt, Kristen Coffey, Steve Willer, Jared Crawford, Ashley Gabbard, Katie Park, Phillip Cook, and Sherry Rankin. Others present included David Lindberg and Chris Tessman with Wilshire, Tracey Garrison, Larry Loew, and Carla Whaley with Humana, and Eric Branco with Johnson Bowman Branco, LLP.

Ms. Pendergrass called the meeting to order.

Mr. Branco read the Legal Opening Statement.

Ms. Rankin called Roll.

There being no ***Public Comment*** received, Ms. Pendergrass introduced agenda item ***Approval of Minutes – June 14, 2023, and July 12, 2023.*** *(Video 00:07:47 to 00:08:21).* Dr. Milkman made a motion to approve all minutes as presented and was seconded by Dr. Carver. The motion passed unanimously.

Ms. Pendergrass introduced agenda item ***Finance Committee Report*** *(Video 00:08:22 to 00:44:15).* Mr. O'Mara stated that the CERS Finance Committee met on August 22, 2023. The Committee reviewed and approved twenty-seven (27) Hazardous Duty Requests. Mr. O'Mara made a motion to ratify the actions of the Finance Committee in approving the Hazardous Duty Requests as presented. Mr. Fulkerson seconded the motion and the motion passed unanimously.

The Committee also approved New Agency Participation in CERS Non-Hazardous for Reid Village Water District and the City of Hanson. Mr. O'Mara made a motion to ratify the actions of the Finance Committee in approving the participation of Reid Village Water District and the City of Hanson as presented. Dr. Milkman seconded the motion and the motion passed unanimously.

Mr. Lamb also presented the Quarterly Financial Reports, said Mr. O'Mara. Mr. Lamb briefly reviewed these reports with the CERS Board of Trustees. He reviewed the Combining Statement of Fiduciary Net Position of the Pension Funds as of June 30, 2023. Next, Mr. Lamb briefly reviewed the Combining Statement of Changes in Fiduciary Net Position of the Pension Funds for the twelve-month period ending June 30, 2023, Combining Statement of Fiduciary Net Position of Insurance Funds as of June 30, 2023, and the Combining Statement of Changes in Fiduciary Net Position of Insurance Funds for the twelve-month period ending June 30, 2023, with the CERS Board of Trustees. Mr. Lamb went on to present the CERS Pension and Insurance Funds Contribution Reports for the twelve-month period ending June 30, 2023. Lastly, he briefly presented the FY 2022-2023 KPPA Administrative Budget and Budget-to-Actual Analysis for the fiscal year ending June 30, 2023. Separation/plan-specific expenses allocated based on the hybrid-percentage were highlighted by Mr. Lamb. Mr. Lamb reviewed the JP Morgan Chase Earnings and Fees and Hard Interest Earned for the fiscal year ending June 30, 2023. Lastly, the CERS Outstanding Invoices by Type and Employer and Penalty Invoices Reports were presented to the CERS Board of Trustees.

Next, Mr. Lamb provided a brief update on the Cyber Insurance Policy. He announced that KPPA released a Request for Proposal (RFP) for a Cyber Insurance Policy. Bids were received and evaluated, said Mr. Lamb. He advised that the named insured would be the Kentucky Public Pensions Authority (KPPA) as well as the County Employees Retirement System (CERS). The Kentucky Retirement Systems (KRS) would also be added. Mr. O'Mara made a motion to include County Employees Retirement System (CERS) as an additional named insured in the Cyber Insurance Policy. Mr. Powell seconded the motion and the motion passed unanimously.

Lastly, Mr. Lamb presented an informational memo and presentation illustrating the FY25-26 Biennial Budget Recommendation from the FY 2024 Budget Planning Workgroup. He briefly reviewed the drafted FY 2024 Administrative Budget, FY 25/26 Baseline Budget, and FY 25/26 Proposed KBUD Baseline Submission with the CERS Board of Trustees. Mr. Lamb advised that an Additional Budget Request would also be submitted to increase KPPA's headcount by requesting additional positions. He provided an overview of this request. Mr. O'Mara reminded Trustees that the FY25-26 Biennial Budget Recommendation would be presented to the KPPA for approval; however, was being presented to the CERS and KRS Boards of Trustees for informational purposes only.

Ms. Pendergrass introduced agenda item ***KPPA Audit Committee Report*** *(Video 00:44:16 to 00:48:47)*. Mr. O'Mara stated that the KPPA Audit Committee met on August 24, 2023. Ms. Kristen Coffey briefly reviewed the KPPA Audit Committee's approval of the items to be regularly presented to various Boards and Committees and Status of Current Internal Audit Projects were presented to the CERS Board of Trustees.

Ms. Pendergrass introduced agenda item ***Joint Retiree Health Plan Committee Report*** *(Video 00:48:48 to 01:25:26)*. Mr. Powell stated that The Joint CERS & KRS Retiree Health Plan (RHP) Committee met on September 05, 2023, and September 12, 2023, to discuss and make recommendations regarding the Non-Medicare and Medicare eligible health plans for retirees of the systems operated by the KPPA. He provided an overview of these recommendations.

Mr. Powell made a motion to ratify the Joint Retiree Health Plan Committee's recommendations for the Non-Medicare Eligible Retirees as presented. Mr. Cheatham seconded the motion and the motion passed unanimously.

Mr. Powell made a motion to ratify the Joint Retiree Health Plan Committee's recommendations for the Medicare Eligible Retirees as presented. Dr. Hackbart seconded the motion and the motion passed unanimously.

Mr. Larry Loew with Humana provided an update on the Humana negotiation with Baptist Health Medical Group. Ms. Pendergrass requested that Mr. Eager work with Mr. Loew, Ms. Garrison, and the KPPA Division of Communications to prepare a supplemental press release specific to CERS Membership regarding the Humana negotiation with Baptist Health Medical Group. Mr. Cheatham added that posting the information to the KPPA website would be helpful to Members. Ms. Surratt advised that a statement/update on the Humana contract negotiations is posted on the homepage of the KPPA website.

Lastly, Mr. Loew briefly discussed the Humana business plans.

Ms. Pendergrass introduced agenda item ***Investment Committee Report*** *(Video 01:25:27 to 01:42:49).* Dr. Hackbart stated that the CERS Investment Committee met on August 30, 2023. No items were approved that would require ratification by the CERS Board of Trustees, said Dr. Hackbart. The KPPA Chief Investment Officer, Mr. Steve Willer, provided a summary of the quarterly and fiscal year reports that were presented to the CERS Investment Committee.

Ms. Pendergrass introduced agenda item ***Administrative*** *(Video 01:42:50 to 01:50:39).* Ms. Pendergrass briefly reviewed proposed amendments to the CERS Bylaws. She directed the Trustees to the Proposed Recurring Meeting Schedule. Ms. Surratt suggested that the CERS Board of Trustees meeting in September be moved from the third to the second Wednesday of the month. Ms. Pendergrass noted the amendment. Mr. Foster made a motion to approve the Bylaw amendments as modified. Mr. Fulkerson seconded the motion and the motion passed unanimously.

Ms. Pendergrass stated that the Strategic Plan discussion would be postponed to a later date.

Mr. Owens directed the Trustees to his written CEO Report.

Mr. Eager also submitted a written KPPA Update. However, he quickly highlighted the importance of KPPA Staff exposure and connectivity to legislators, other state systems, executive branch offices, etc.

Ms. Pendergrass introduced agenda item ***Closed Session*** *(Video 01:50:40 to 01:51:45).* Mr. Powell made a motion to enter closed session to discuss pending litigation pursuant to KRS 61.810(c). The motion was seconded by Mr. Foster and passed unanimously.

Ms. Pendergrass read the following closed session statement: A motion having been made in open session to move into a closed session for a specific purpose, and such motion having carried by majority vote in open, public session, the Board shall now enter closed session to consider litigation, pursuant to KRS 61.810(1)(c), because of the necessity of protecting the confidentiality of the Systems' litigation strategy and preserving any available attorney-client privilege.

****Mr. Fulkerson exited the meeting prior to the start of Closed Session****

Closed Session *(Video - Part 2 - 00:00:58 to 00:01:28)*

Coming back into open session, Ms. Pendergrass requested a motion to authorize the KPPA Legal Staff to initiate action on behalf of CERS in Franklin Circuit Court as discussed in closed session. The motion was made by Mr. Foster and was seconded by Mr. Powell. The motion passed unanimously.

Ms. Pendergrass opened the floor for adjournment. Mr. Powell made a motion and was seconded by Mr. Cheatham to ***adjourn*** the meeting. The motion passed unanimously.

Copies of all documents presented are incorporated as part of the Minutes of the Board of Trustees held September 13, 2023, except documents provided during a closed session conducted pursuant to the open meetings act and exempt under the open records act.

The remainder of this page left blank intentionally.

CERTIFICATION

I do certify that I was present at this meeting, and I have recorded the above actions of the Trustees on the various items considered by it at this meeting. Further, I certify that all requirements of KRS 61.805-61.850 were met in conjunction with this meeting.

____
Recording Secretary

I, the Chair of the Board of Trustees of the County Employees Retirement System, do certify that the Minutes of Meeting held on September 13, 2023, were approved on November 8, 2023.

____
Chair of the Board of Trustees

I have reviewed the Minutes of the September 13, 2023, Board of Trustees Meeting for content, form, and legality.

____
Executive Director
Office of Legal Services

MEMORANDUM

TO: County Employees Retirement System Board of Trustees

From: Mike Foster, Chair
Actuary Committee

Date: November 8, 2023

Subject: Summary of Actuary Committee Meeting

The County Employees Retirement System Actuary Committee held a regularly scheduled meeting on November 1, 2023.

1. **The following items were approved by the Actuary Committee and are being forwarded to the County Employees Retirement System Board of Trustees for ratification***

   a. **2023 Draft Actuarial Valuation Results –** The Actuary Committee considered the presentation of GRS, the System Actuary, concerning the 2023 Draft Actuarial Valuation results. After hearing the presentation from GRS, the Committee unanimously agreed to recommend the Draft Valuation for acceptance by the entire Board of Trustees prior to its statutorily required presentation to the Legislative Research Commission (LRC) on or before November 15, 2023.

   b. **Actuarial Factors Used in Administration of Benefits –** The Actuary Committee entertained a presentation by GRS concerning the assumed rate which should be used for conversion of optional forms of payment and service credit. After considerable discussion of various rates that could be utilized, the Committee unanimously agreed to recommend to the entire CERS Board of Trustees an assumed rate of **5.875%** as a single rate to be utilized by all plans administered by KPPA.

RECOMMENDATION: The Actuary Committee requests the County Employees Retirement System Board of Trustees ratify the actions taken by the Actuary Committee.

County Employees Retirement System
1270 Louisville Road
Frankfort, KY 40601

2. **The following items represent some detail which led to the foregoing recommendations made by the Actuary Committee:**
    a. **2023 Draft Actuarial Valuation Results**. **KRS 78.784(2)** requires that CERS produce an actuarial valuation for the previous Fiscal Year to be completed on an annual basis; along with an interest rate sensitivity study and 30 years projections concerning the funding health of each plan. This year, the 2023 Valuation will need to detail changes to the assumed rate of return adopted by the Board of Trustees in Fiscal Year 2023. The valuation must be completed by the System's actuary and must be submitted to the Legislative Research Commission (LRC) on or before November 15 of the subsequent fiscal year. The full Board of Trustees would then consider approval of the employer contribution rates contained in the Valuation during its December meeting.

    b. **Actuarial Factors Used in the Administration of Benefits**. GRS presented various assumed rate of return options for consideration by the Committee. GRS indicated the last time these actuarial factors were contemplated was in 2018 before there was a separate Board of Trustees for CERS. There were, however, separate assumed rates of return for the plans administered by KERS and those administered on behalf of the County employees. GRS stressed the importance of utilizing a "single rate" to ensure that similarly situated retirees in CERS plans and KERS plans would receive identical benefits upon retirement. In addition, GRS pointed out that a single rate would reduce administrative complexity.

    The Committee considered assumed rates of 5.25% to 6.50%. It was determined the rate most likely to yield a single rate for all KPPA plans was 5.875% which is the middle ground between the KERS assumed rate and the CERS assumed rate. It was discussed that the lower the assumed rate the lower the Tier 3 payment of retirement benefits and the higher the amount needed to purchase service time. Those factors were weighed against the need for a single rate and the compromise recommendation was made.

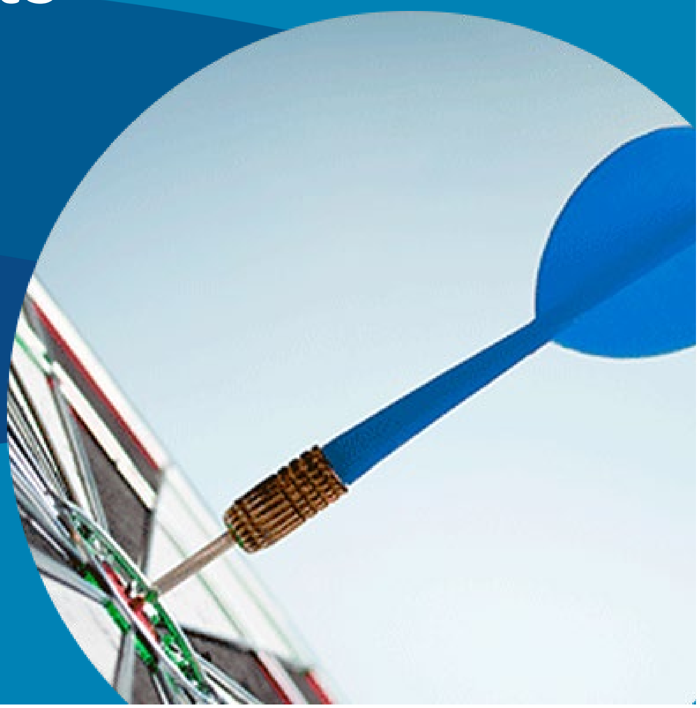
***Board of Trustees Action Required**

County Employees Retirement System

2023 Actuarial Valuation Results

November 8, 2023

Janie Shaw, ASA, EA, MAAA
Danny White, FSA, EA, MAAA



Comments on Valuation Results

- Board adopted new assumptions in May 2023
  - **Investment Return Assumption:** Increased to 6.50% for all funds
  - **Mortality:** Update the base mortality assumption to reflect recent experience (data dependent). Update the improvement assumption based on more recent published report (anticipated trend).
    - Increase disability mortality. No change to pre-retirement mortality
  - **Termination/Withdrawal:** Increase the rates of termination prior to retirement age
  - **Disability incidence:** Decrease the rate of disability incidence
  - **Individual salary increases:** Increase assumption at certain service intervals
  - **Cash Balance Interest Credit:** Increased to 6.75%

Comments on Valuation Results

- Change in active membership and payroll
  - Active membership increased across both funds
  - Non-Hazardous: 8% increase in membership payroll
  - Hazardous: 9% increase in membership payroll
- Overview of legislation passed in 2023
  - **HB 506:** reinstated the Partial Lump Sum Option Form of payment, and adjusted the minimum required separation period for return to work

Comments on Valuation Results

- FYE 2023 Investment Experience
  - 10% return on market value
    - Assumed rate of return: 6.25% (6.50% after the 2023 after the valuation date)
  - Fund assets $601M more than expected for CERS ($421M pension and $180M insurance)
  - $44M in asset gains recognized this year ($33M pension and $11M insurance)

GRS

Comments on Valuation Results

- Retirement Fund Liability Experience
  - $328M loss for both retirement funds combined
  - Primarily attributed to salary increases greater than expected for individual active members
- Insurance Fund Liability Experience
  - $331M loss for both insurance funds combined
  - 2024 Pre-Medicare premiums higher than expected partially offset by Medicare premiums lower than expected

Required Employer Contributions

	CERS Non-Hazardous		CERS Hazardous	
	2022 Val	2023 Val	2022 Val	2023 Val
(1)	(2)	(3)	(4)	(5)
Pension Fund	23.34%	19.75%	41.11%	36.79%
Insurance Fund	0.00%	0.00%	2.58%	2.16%
Actuarially Determined Contribution Rate, payable as a percentage of payroll	**23.34%**	**19.75%**	**43.69%**	**38.95%**
Difference		**-3.59%**		**-4.74%**

Note: 2022 Valuation set the contribution rates for FYE2024.
2023 Valuation will be used to set the contribution rates for FYE2025.

Required Employer Contributions ($millions)

	CERS Non-Hazardous		CERS Hazardous	
	2022 Val	2023 Val	2022 Val	2023 Val
(1)	(2)	(3)	(4)	(5)
Pension Fund	$641	$584	$260	$254
Insurance Fund	0	0	16	15
Total Actuarially Determined Employer Contribution	**$641**	**$584**	**$276**	**$269**
Change in Actuarially Determined Employer Contribution		**$(57)**		**$(7)**

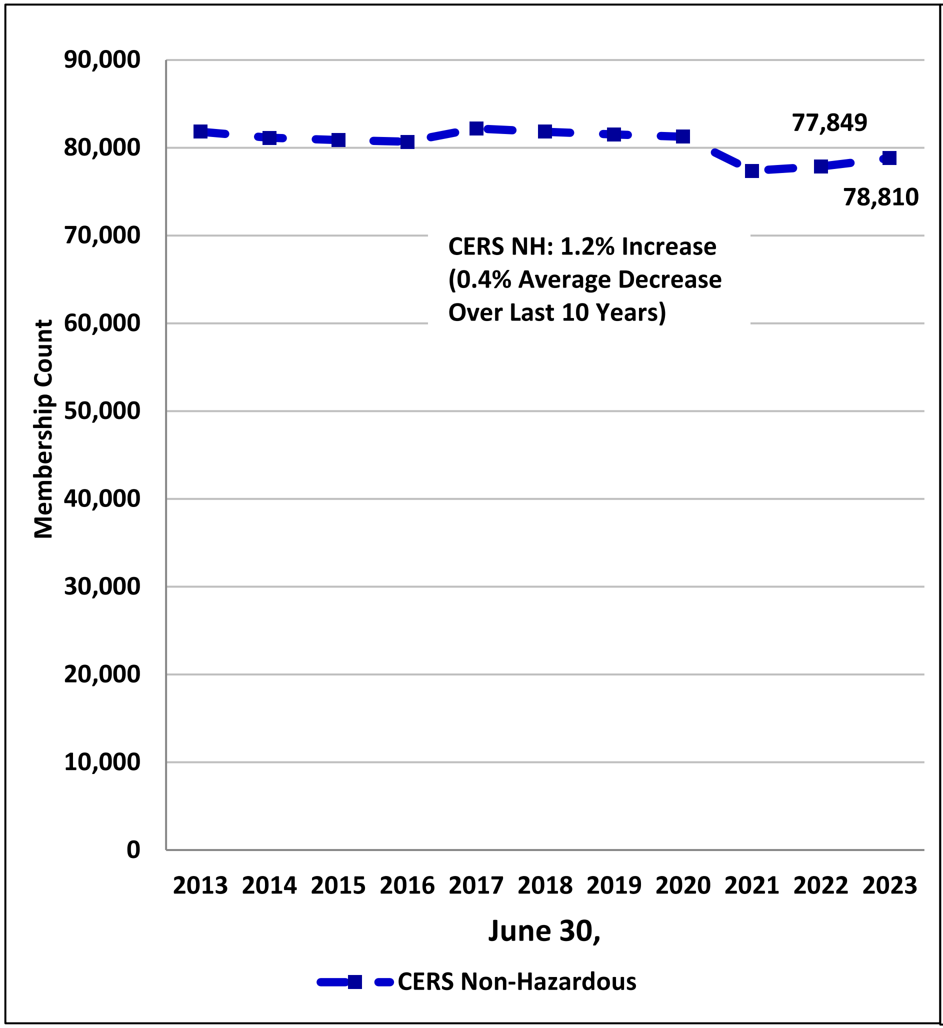
Note: 2022 Valuation set the contribution rates for FYE2024.
2023 Valuation will be used to set the contribution rates for FYE2025.

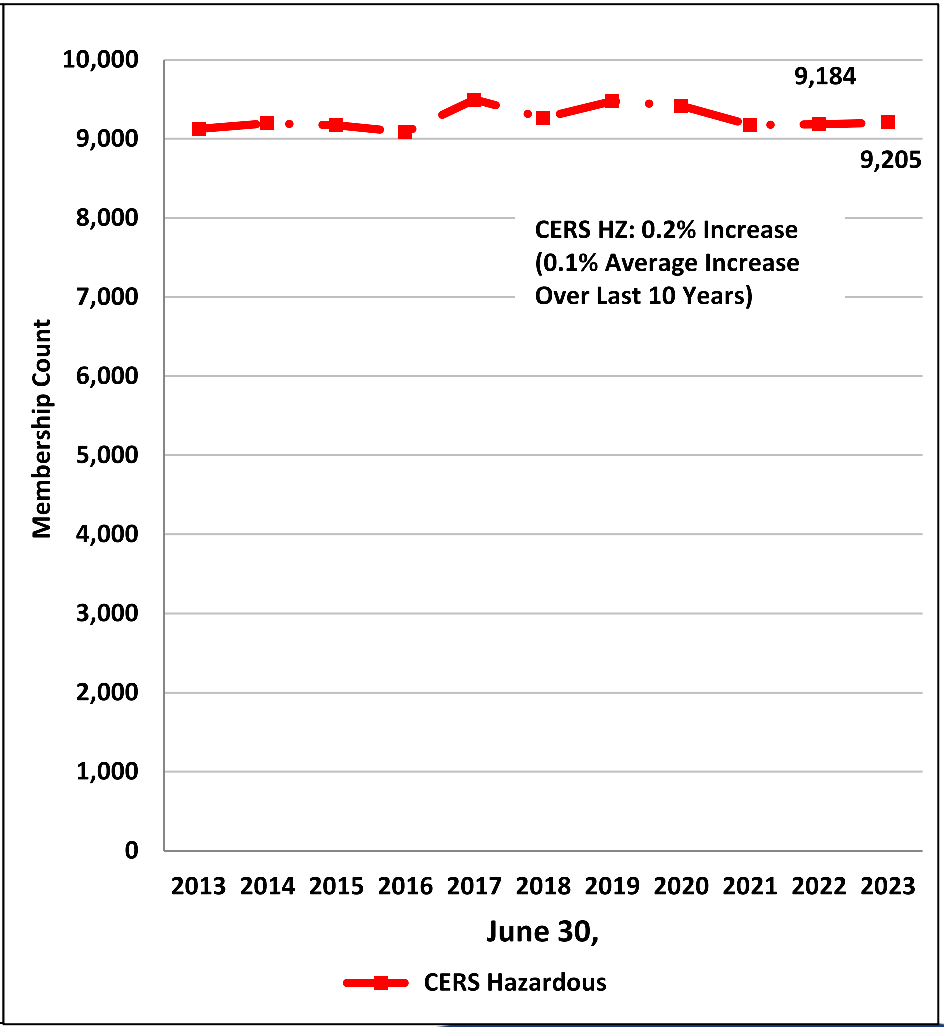
Unfunded Actuarial Accrued Liability – Actuarial Value of Asset Basis ($ in Billions)

	CERS Non-Hazardous		CERS Hazardous	
	2022 Val	2023 Val	2022 Val	2023 Val
(1)	(2)	(3)	(4)	(5)
Pension Fund	$7.53	$6.73	$3.07	$2.87
Insurance Fund	(0.77)	(0.80)	(0.02)	(0.01)
Total Unfunded Actuarial Accrued Liability	**$6.76**	**$5.92**	**$3.06**	**$2.86**
Change in Unfunded Actuarial Accrued Liability		**$(0.84)**		**$(0.20)**

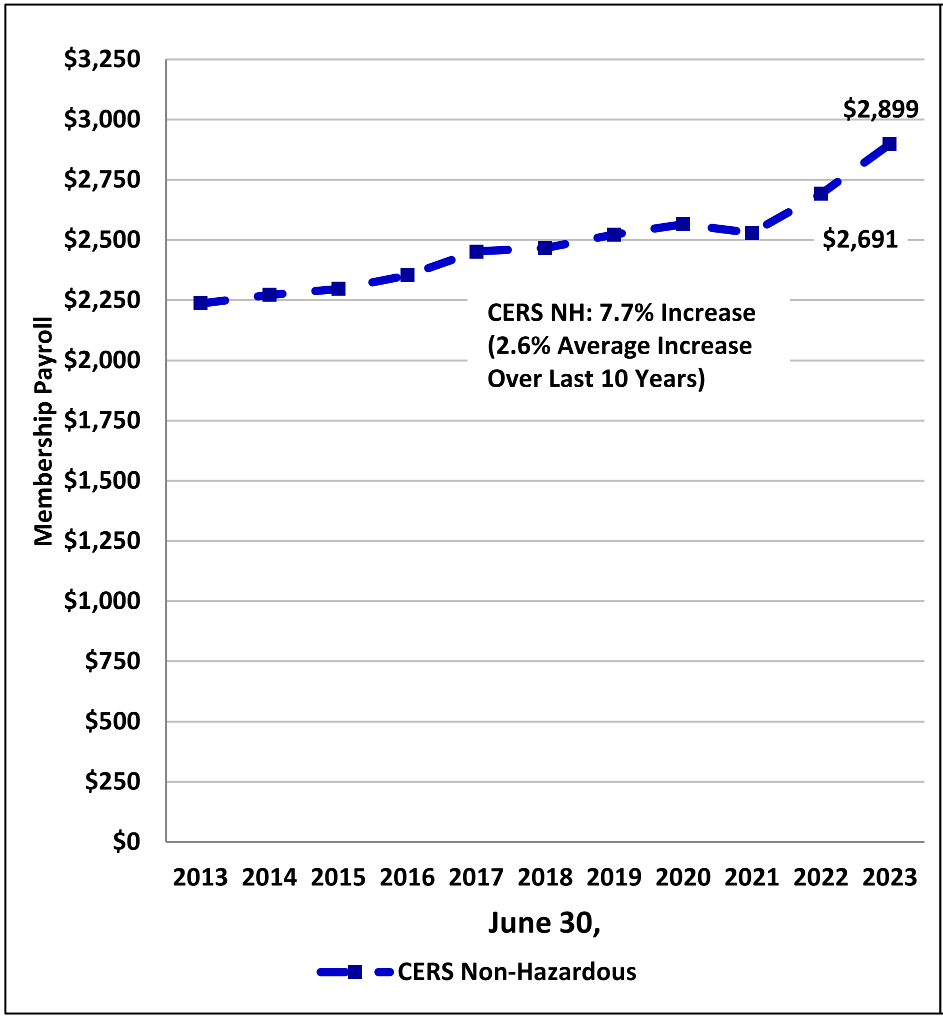
GRS

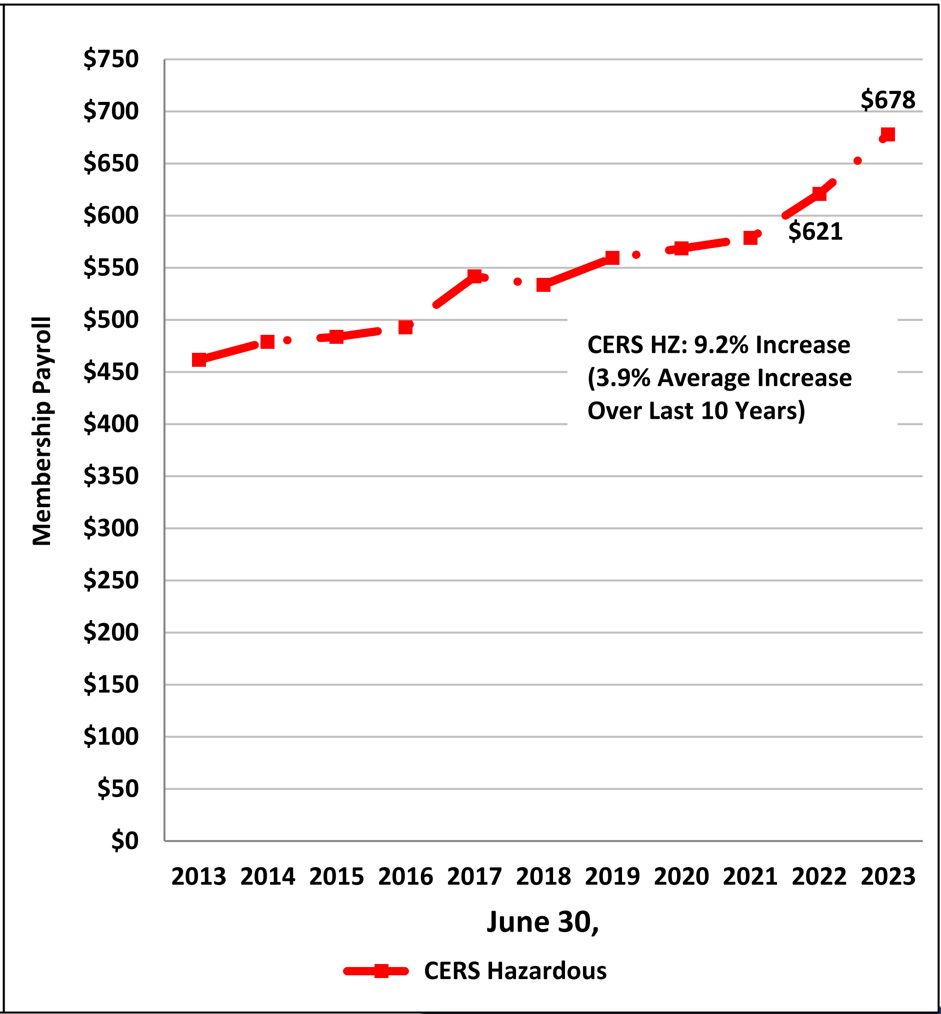
Active Membership Count





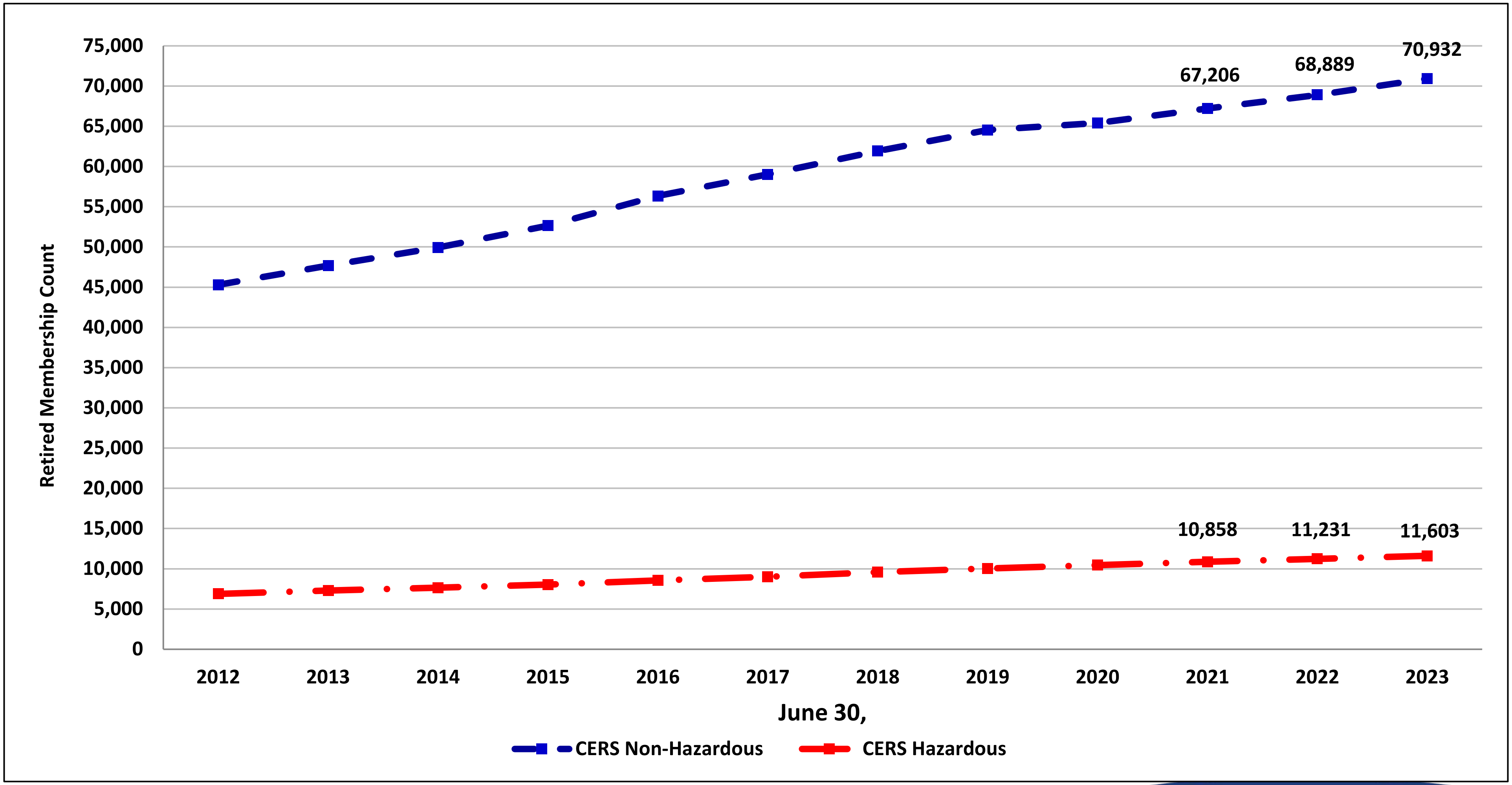
Membership Payroll ($ in Millions)



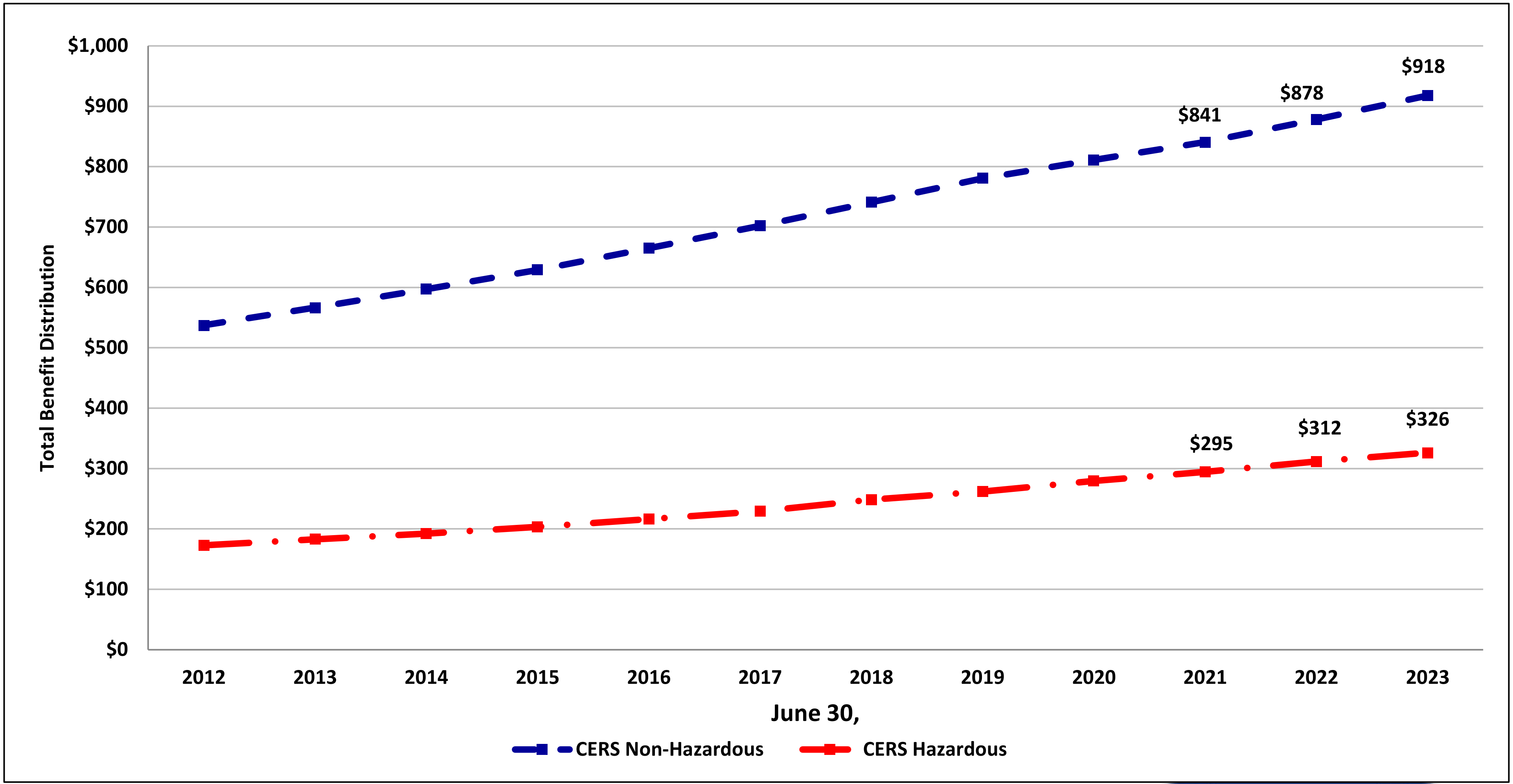


GRS

Retired Membership Count



Pension Benefit Distributions ($ in Millions)



Funding Results – CERS ($ in millions)

	Non-Hazardous System				Hazardous System			
	Pension		Insurance		Pension		Insurance	
Item	2022	2023	2022	2023	2022	2023	2022	2023
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total Normal Cost Rate	10.22%	9.46%	2.69%	2.35%	18.02%	17.46%	4.50%	3.77%
Member Rate	(5.00)%	(5.00)%	(0.59)%	(0.63)%	(8.00)%	(8.00)%	(0.59)%	(0.64)%
Employer Normal Cost Rate	5.22%	4.46%	2.10%	1.72%	10.02%	9.46%	3.91%	3.13%
Administrative Expenses	0.84%	0.83%	0.04%	0.03%	0.32%	0.31%	0.08%	0.08%
Amortization Cost	17.28%	14.46%	(3.01)%	(2.85)%	30.77%	27.02%	(1.41)%	(1.05)%
Total Actuarially Determined Rate	**23.34%**	**19.75%**	**0.00%**	**0.00%**	**41.11%**	**36.79%**	**2.58%**	**2.16%**
Actuarial Accrued Liability (AAL)	$15,674	$15,296	$2,392	$2,560	$5,862	$5,850	$1,538	$1,604
Actuarial Value of Assets	$8,149	$8,571	$3,160	$3,364	$2,789	$2,984	$1,554	$1,612
Unfunded AAL	**$7,525**	**$6,725**	**$(768)**	**$(804)**	**$3,073**	**$2,866**	**$(16)**	**$(8)**
Funded Ratio	**52.0%**	**56.0%**	**132.1%**	**131.4%**	**47.6%**	**51.0%**	**101.0%**	**100.5%**

PROJECTION INFORMATION
PENSION AND INSURANCE

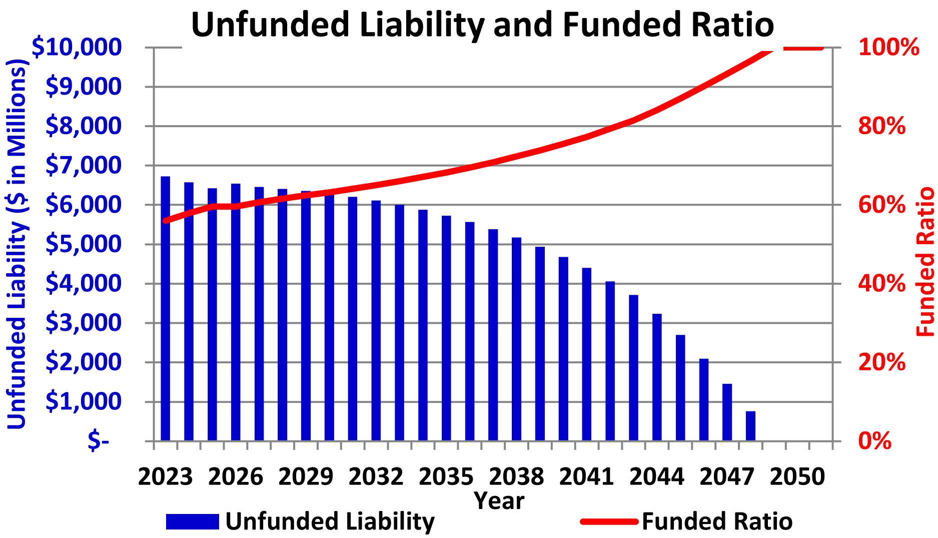
Projection Assumptions

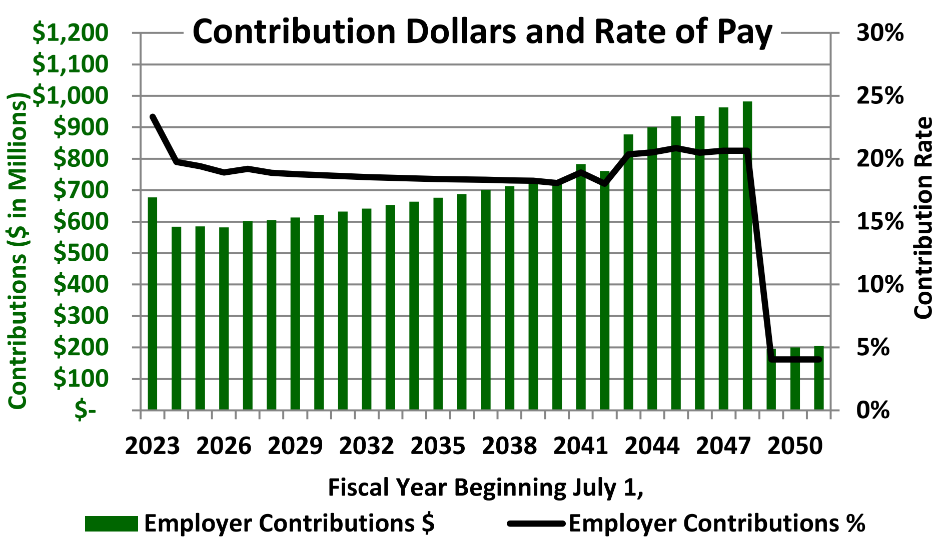
- Assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%
- Full actuarially determined contribution paid each year
- Membership payroll assumed to increase by 2% each year
  - Total active population assumed to remain level

GRS

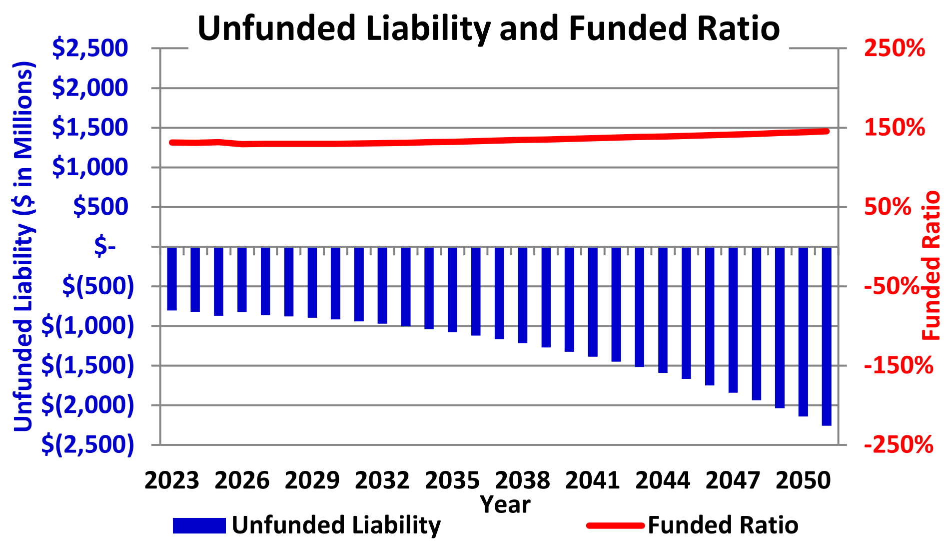
CERS Non-Hazardous Projection

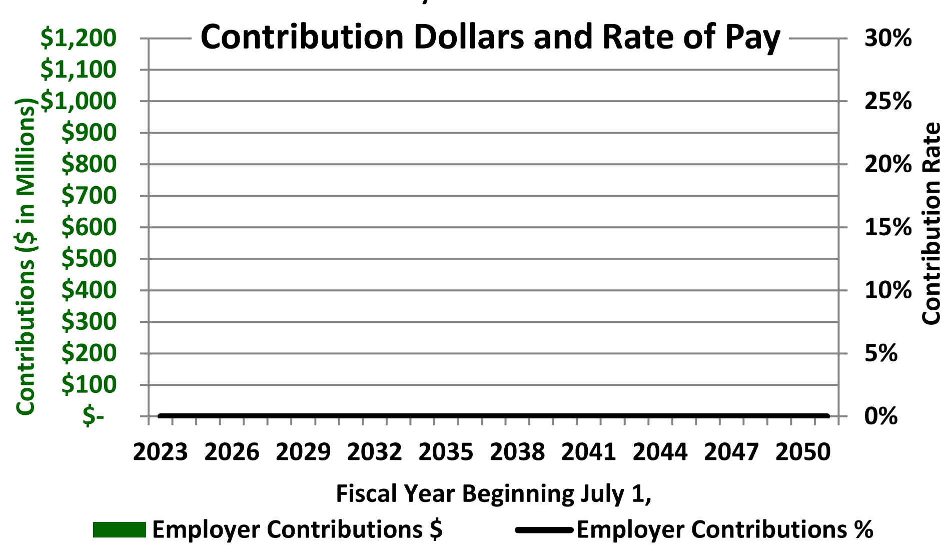
Pension





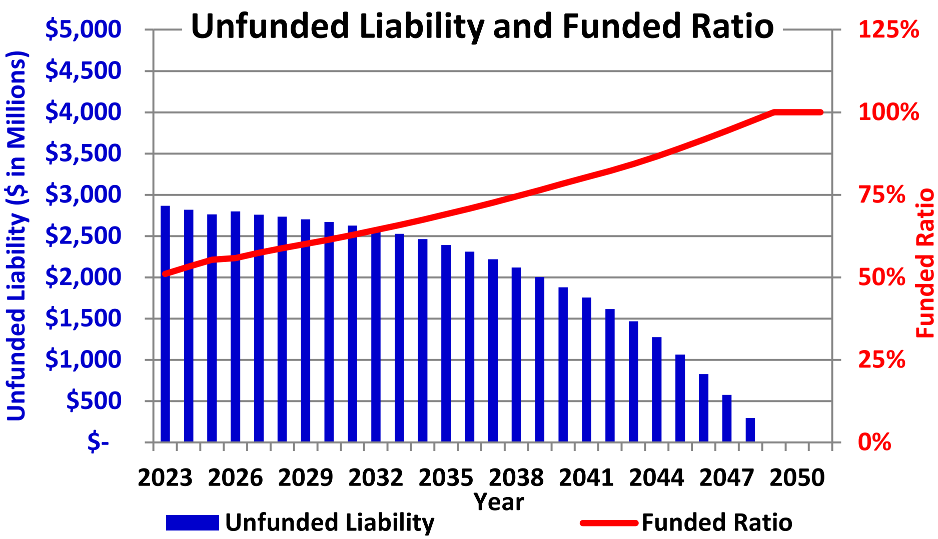
Insurance

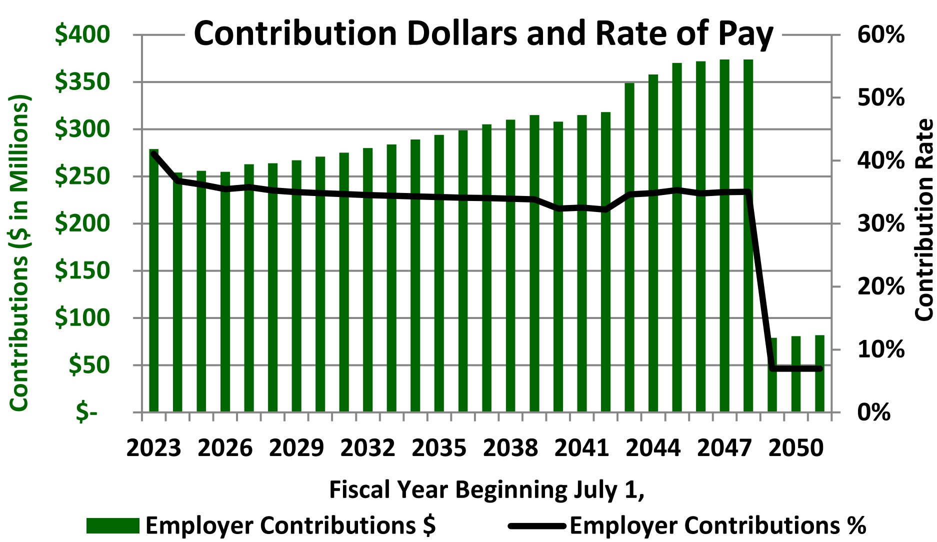




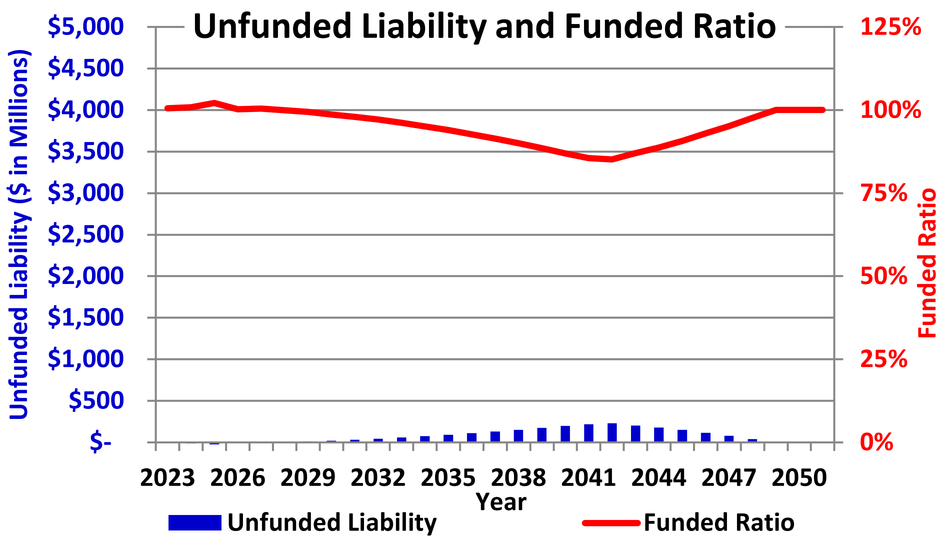
CERS Hazardous Projection

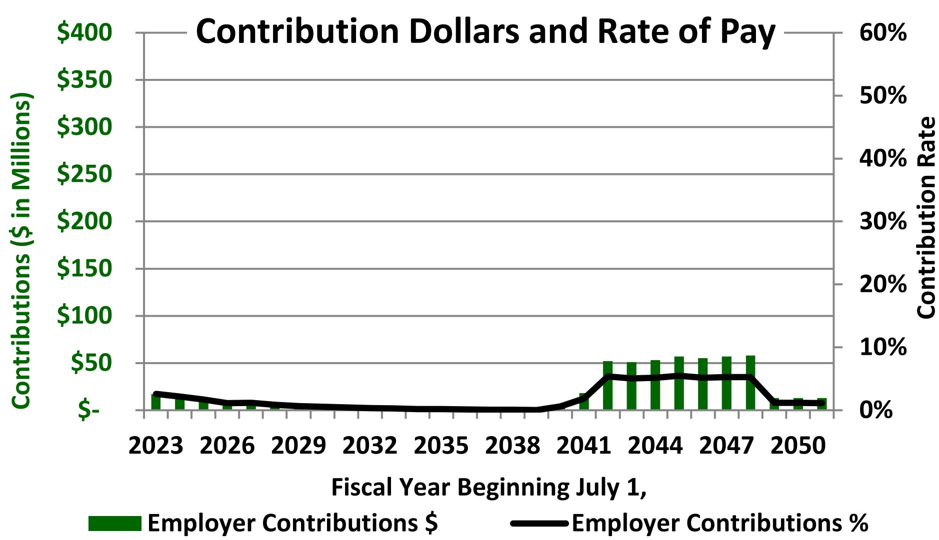
Pension





Insurance





Closing Comments on 2023 Valuation Results

- It is imperative the participating employers continue contributing the actuarially determined contributions in each future year to improve the System’s financial security
- Last year’s increase in active membership and payroll is a positive signal for the System and its participating employers

Disclaimers

- This presentation is intended to be used in conjunction with the actuarial valuation as of June 30, 2023. 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.
- Readers are cautioned to examine original source materials and to consult with subject matter experts before making decisions related to the subject matter of this presentation.

County Employees Retirement System (CERS)

Actuarial Valuation Report as of June 30, 2023

P: 469.524.0000 | www.grsconsulting.com

October 31, 2023

Board of Trustees
County Employees Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, KY 40601

Subject: Actuarial Valuation as of June 30, 2023

Dear Trustees of the Board:

This report describes the current actuarial condition of the County Employees Retirement System (CERS) and provides the actuarially determined employer contribution rates for fiscal year ending June 30, 2025. In addition, the report analyzes changes in CERS's financial condition and provides various summaries of the data.

Separate reports are issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67, 68, 74 and 75. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of June 30, the first day of the plan year for CERS. This report was prepared at the request of the Board of Trustees of the County Employees Retirement System (Board) and is intended for use by the Kentucky Public Pensions Authority (KPPA) staff and those designated or approved by the Board.

Financing Objectives and Funding Policy

The contribution rates determined by these actuarial valuations are intended to become effective twelve months after the valuation date and, as such, are intended to be used by the Board for recommending required contribution rates effective July 1, 2024 and ending June 30, 2025.

The employer contribution rate is determined in accordance with Section 61.565 of Kentucky Statute. As specified by the Statute, the employer contribution is comprised of a normal cost contribution and an actuarial accrued liability contribution. The actuarial accrued liability contribution is calculated by amortizing the unfunded accrued liability as of June 30, 2019 over a closed 30-year amortization period (26 years remaining as of June 30, 2023). Gains and losses incurring in years after June 30, 2019 are amortized as separate closed 20-year amortization bases.

5605 North MacArthur Boulevard | Suite 870 | Irving, Texas 75038-2631

If the contributions made are equal to the Actuarially Determined Contribution (ADC), and if all actuarial assumptions are met, there will not be an unfunded accrued liability at the end of the 26-year period remaining from the original closed 30-year amortization base. Accordingly, the ADC under the funding policy can be considered a "Reasonable Actuarially Determined Contribution" as required by the Actuarial Standards of Practice.

House Bill 362 passed during the 2018 legislative session and limited the increases to the employer contribution rates to 12% over the prior fiscal year through June 30, 2028. This legislation does not impact the contribution rates calculated in this actuarial valuation. The recommended certified contribution rates are equal to the actuarially determined rates.

ASSUMPTIONS AND METHODS

The Board of Trustees, in consultation with the actuary, sets the actuarial assumptions and methods used in the actuarial valuation. Except where noted in this report, the assumptions used in this actuarial valuation are based on an experience study conducted with experience through June 30, 2022, adopted by the Board of Trustees on May 9, 2023 for first use in this June 30, 2023 actuarial valuation.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in these valuations are those which were in effect on June 30, 2023. House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, and adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances. There were no other material benefit provision changes since the prior valuation.

DATA

Member data for retired, active and inactive members was supplied as of June 30, 2023, by KPPA staff. The staff also supplied asset information as of June 30, 2023. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by KPPA.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of CERS as of June 30, 2023.

All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Kentucky Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. White and Ms. Shaw are Enrolled Actuaries. All three of the undersigned are members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. In addition, all three are independent of KPPA and are experienced in performing valuations for large public retirement systems. This communication shall not be construed to provide tax advice, legal advice or investment advice.

Sincerely,

Gabriel, Roeder, Smith & Company

Daniel J. White, FSA, EA, MAAA
Senior Consultant

Janie Shaw, ASA, EA, MAAA
Consultant

Krysti Kiesel, ASA, MAAA
Senior Analyst and Actuary

Table of Contents

SECTION 1

EXECUTIVE SUMMARY

Summary of Principal Results

(Dollar amounts expressed in thousands)

	Non-Hazardous		Hazardous		Total	
	June 30, 2023	June 30, 2022	June 30, 2023	June 30, 2022	June 30, 2023	June 30, 2022
Actuarially Determined Contribution:						
Retirement	19.75%	23.34%	36.79%	41.11%		
Insurance	0.00%	0.00%	2.16%	2.58%		
Total	19.75%	23.34%	38.95%	43.69%	N/A	N/A
Contribution Rate for Next Fiscal Year[1]	19.75%	23.34%	38.95%	43.69%		
Assets:						
Retirement						
• Actuarial value (AVAR)	$8,571,379	$8,148,912	$2,983,680	$2,788,714	$11,555,059	$10,937,626
• Market value (MVAR)	$8,659,238	$7,963,586	$3,011,322	$2,718,234	$11,670,560	$10,681,820
• Ratio of actuarial to market value of assets	99.0%	102.3%	99.1%	102.6%	99.0%	102.4%
Insurance						
• Actuarial value (AVAI)	$3,364,385	$3,160,084	$1,611,783	$1,553,761	$4,976,168	$4,713,845
• Market value (MVAI)	$3,396,475	$3,079,984	$1,630,713	$1,522,671	$5,027,188	$4,602,655
• Ratio of actuarial to market value of assets	99.1%	102.6%	98.8%	102.0%	99.0%	102.4%
Funded Status:						
Retirement						
• Actuarial accrued liability	$15,296,429	$15,674,220	$5,849,995	$5,861,691	$21,146,424	$21,535,911
• Unfunded accrued liability on AVAR	$6,725,050	$7,525,308	$2,866,315	$3,072,977	$9,591,365	$10,598,285
• Funded ratio on AVAR	56.0%	52.0%	51.0%	47.6%	54.6%	50.8%
• Unfunded accrued liability on MVAR	$6,637,191	$7,710,634	$2,838,673	$3,143,457	$9,475,864	$10,854,091
• Funded ratio on MVAR	56.6%	50.8%	51.5%	46.4%	55.2%	49.6%
Insurance						
• Actuarial accrued liability	$2,560,387	$2,391,990	$1,604,146	$1,538,131	$4,164,533	$3,930,121
• Unfunded accrued liability on AVAI	($803,998)	($768,094)	($7,637)	($15,630)	($811,635)	($783,724)
• Funded ratio on AVAI	131.4%	132.1%	100.5%	101.0%	119.5%	119.9%
• Unfunded accrued liability on MVAI	($836,088)	($687,994)	($26,567)	$15,460	($862,655)	($672,534)
• Funded ratio on MVAI	132.7%	128.8%	101.7%	99.0%	120.7%	117.1%
Membership:						
• Number of						
- Active Members	78,810	77,849	9,205	9,184	88,015	87,033
- Retirees and Beneficiaries	70,932	68,889	11,603	11,231	82,535	80,120
- Inactive Members	111,086	105,707	4,287	4,100	115,373	109,807
- Total	260,828	252,445	25,095	24,515	285,923	276,960
• Projected payroll of active members	$2,898,813	$2,691,171	$677,988	$620,934	$3,576,801	$3,312,105
• Average salary of active members	$36,782	$34,569	$73,654	$67,610	$40,639	$38,056

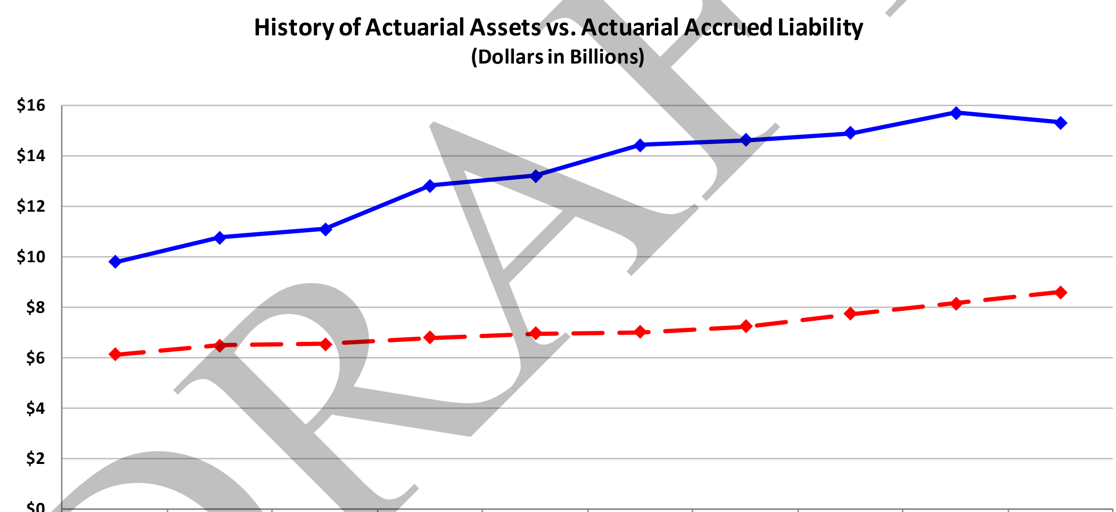
[1] Contribution rates calculated with the June 30, 2023 valuation (June 30, 2022 valuation) are effective for fiscal year ending June 30, 2025 (June 30, 2024).

Executive Summary (Continued)

Non-Hazardous Retirement Fund

The unfunded actuarial accrued liability of the non-hazardous retirement fund decreased by $800 million since the prior year's valuation to $6.725 billion. This decrease was approximately $719 million more than expected, primarily due to lower liabilities due to the assumption changes based on the 2022 experience study. The decrease in the liability due to the assumption changes was offset by liability losses as a result of salary increases for individual members being greater than assumed.

Below is a chart with the historical actuarial value of assets and actuarial accrued liability. The divergence in the assets and liability over the last ten years has generally been due to: (1) actual contributions being insufficient to finance the unfunded actuarial accrued liability, and (2) assumption changes.



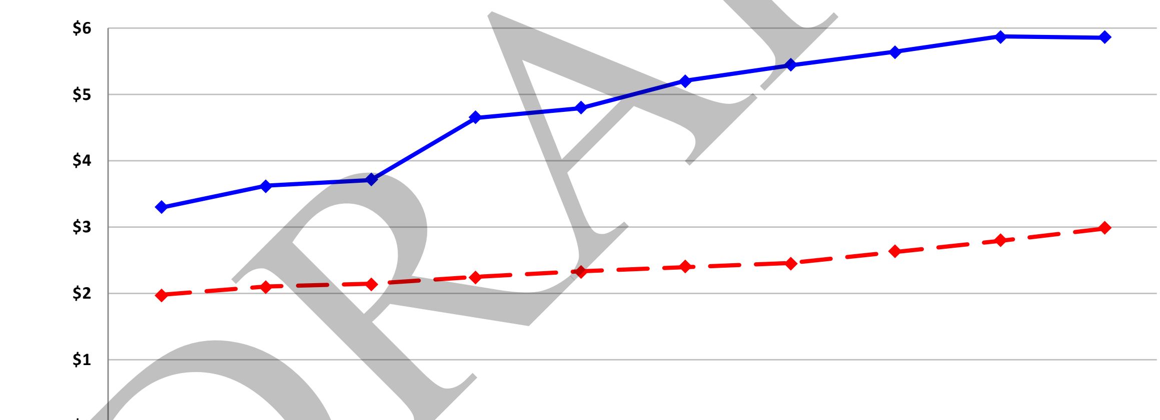
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AAL	9.8	10.7	11.1	12.8	13.2	14.4	14.6	14.9	15.7	15.3
AVA	6.1	6.5	6.5	6.8	7.0	7.0	7.2	7.7	8.1	8.6

Executive Summary (Continued)

Hazardous Retirement Fund

The unfunded actuarial accrued liability of the hazardous retirement fund decreased by $207 million since the prior year's valuation to $2.866 billion. This decrease was approximately $164 million more than expected, primarily due to lower liabilities due to the assumption changes based on the 2022 experience study. The decrease in the liability due to the assumption changes was offset by liability losses as a result of salary increases for individual members being greater than assumed.

Below is a chart with the historical actuarial value of assets and actuarial accrued liability. The divergence in the assets and liability over the last ten years has generally been due to: (1) actual contributions being insufficient to finance the unfunded actuarial accrued liability, and (2) assumption changes.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AAL	3.3	3.6	3.7	4.6	4.8	5.2	5.4	5.6	5.9	5.8
AVA	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.6	2.8	3.0

Executive Summary (Continued)

Summary of Change in Financial Condition of the Insurance Funds

The funding surplus (actuarial accrued liability in excess of assets) of the non-hazardous insurance fund increased by $36 million since the prior year's valuation to $804 million. This change was approximately $63 million less than expected, primarily due to liability losses related to the 2024 premium experience and retiree contribution changes discussed below. The increase in the liability due to demographic losses was offset by a decrease in liabilities due to the assumption changes based on the 2022 experience study.

The funding surplus of the hazardous insurance fund decreased by $8 million since the prior year's valuation to an $8 million surplus. The funding surplus was expected to increase by $25 million to a $41 million surplus, therefore there was $33 million actuarial loss.

On average, pre-Medicare premiums were approximately 7% higher than expected and Medicare premiums were approximately 4% lower than expected. In conjunction with the review of the healthcare per capita claims cost, the assumed increase in future healthcare costs, or trend assumption, is also reviewed on an annual basis. The trend assumption for the pre-Medicare Plans was increased in the 2023 actuarial valuation as a result of our review. These changes increased liability for the non-hazardous and hazardous insurance funds by approximately $17 million and $74 million, respectively.

Additionally, the Board of Trustees adopted to lower the retiree contribution for the Medicare Advantage plans from $252.51 to be based on the Humana premiums ($93.35 as of January 1, 2024). The Board also adopted the Medical Only plan as the KPPA "contribution plan", which further lowered member contributions for those with less than 20 years of service. These changes increased liability for the non-hazardous and hazardous insurance funds by approximately $223 million and $32 million, respectively.

SECTION 2

DISCUSSION

Discussion

The County Employees Retirement System (CERS) is a cost-sharing, multiple-employer defined benefit pension plan that provides coverage for regular full-time members employed by positions of each participating county, city, and school board, and any additional eligible local agencies electing to participate in CERS. CERS includes both non-hazardous and hazardous duty benefits. This report presents the results of the June 30, 2023 actuarial funding valuation for both the Retirement Funds and Insurance Funds.

The primary purposes of the valuation report are to describe the current actuarial condition of CERS and provide the actuarially determined employer contribution rates for fiscal year ending June 30, 2025. In addition, the report analyzes changes in CERS's financial condition and provides various summaries of the data.

The actuarially determined contribution consist of two components: a normal cost rate and an amortization cost to finance the unfunded actuarial accrued liability. The normal cost rate is the theoretical amount which would be required to pay the members' benefits, based on the current plan provisions, if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. This is the amount that it should cost to provide the benefits for an average member. Since members contribute to the fund, only the excess of the normal cost rate over the member contribution rate is included in the employer contribution. The amortization cost is the amount necessary to amortize the unfunded actuarial accrued liability. The payroll growth rate and discount rate assumptions are selected by the Board. The funding period is specified in Section 78.635 of Kentucky Statute.

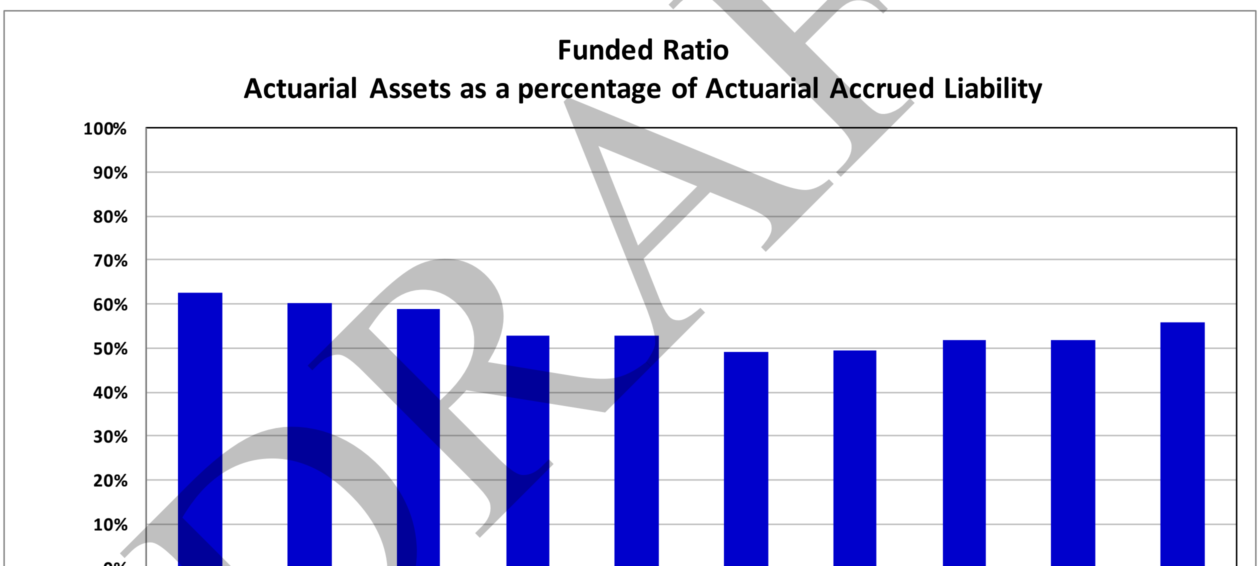
All of the actuarial and financial tables referenced by the other sections of this Report appear in Section 3. Section 4 provides additional details related to the calculation of the amortization of the unfunded actuarial accrued liability. Section 5 provides member data and statistical information. Section 6 provides a discussion of various risk measures, which are intended to aid stakeholders in understanding the effects of future experience differing from the assumptions used in performing an actuarial valuation. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

Funding Progress

The following charts provide a ten-year history of the retirement funds' funded ratio (i.e. the Actuarial Value of Assets divided by the Actuarial Accrued Liability). The decline in the funded ratio in the beginning of this ten-year period was generally due to: (1) actual contributions being insufficient to finance the unfunded actuarial accrued liability, and (2) assumption changes.

The funded ratios for both the non-hazardous and hazardous funds have been slowly trending upward since 2019. Now that the full actuarially determined contributions have been fully phased-in and absent significant future unfavorable experience, the funded ratio is expected to continue trending upward. Also, the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, is expected to begin decreasing in the next few years. Table 9, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement Funds.

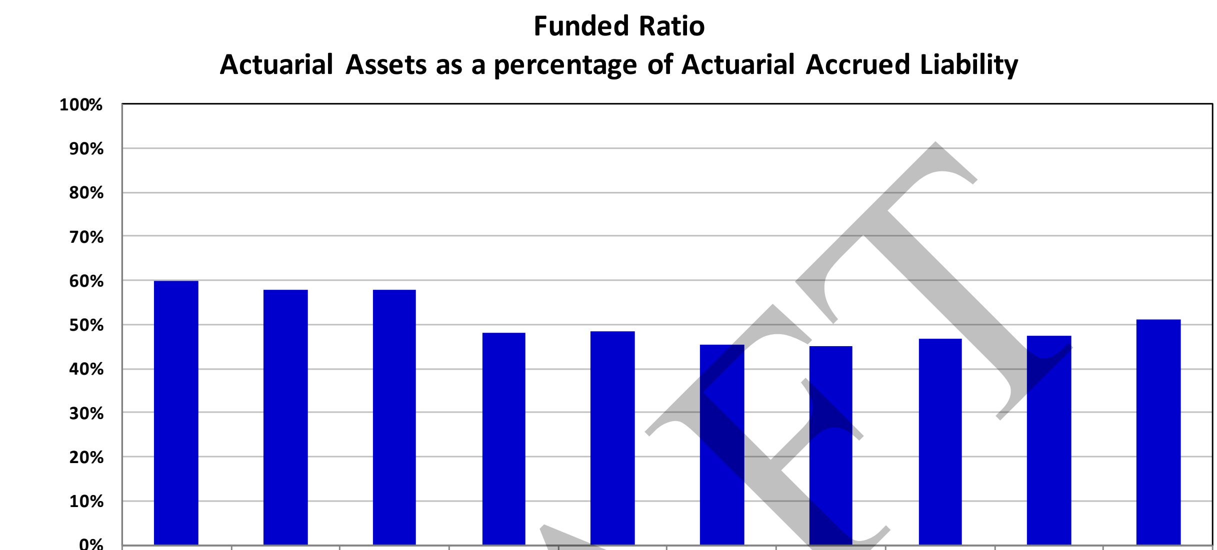
Non-Hazardous Retirement Fund



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Funded Ratio	62.6%	60.3%	59.0%	52.8%	52.7%	49.1%	49.4%	51.8%	52.0%	56.0%

Funding Progress (Continued)

Hazardous Retirement Fund



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Funded Ratio	59.8%	58.0%	57.7%	48.1%	48.4%	45.3%	45.1%	46.7%	47.6%	51.0%

Asset Gains/ (Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on the market value of assets (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The return is computed net of investment expenses.

Non-Hazardous Retirement Fund

The actuarial value of assets for the non-hazardous retirement fund increased from $8.149 billion to $8.571 billion since the prior valuation. The rate of return on the market value of assets on a dollar-weighted basis for the prior fiscal year was 10.2% which is greater than the 6.25% expected annual return for fiscal year ending June 30, 2023. The return on an actuarial (smoothed) asset value was 6.6%, which resulted in a $26 million gain for the fiscal year. The market value of assets is $88 million more than the actuarial value of assets, which signifies that the retirement fund is in a position of net deferred investment gains to be realized in future years.

Hazardous Retirement Fund

Likewise, the actuarial value of assets for the hazardous retirement fund increased from $2.789 billion to $2.984 billion since the prior valuation. The rate of return on the market value of assets on a dollar-weighted basis for the prior fiscal year was 10.3% which is greater than the 6.25% expected annual return for fiscal year ending June 30, 2023. The return on an actuarial (smoothed) asset value was 6.5%, which resulted in a $7 million gain for the fiscal year. The market value of assets is $28 million more than the actuarial value of assets, which signifies that the retirement fund is in a position of net deferred investment gains to be realized in future years.

Table 6 in the following section of this report provides asset information that was included in the annual financial statements of the funds, as well as the estimated yield on a market value basis. Tables 7 and 8 provide the development of the actuarial value of assets and the estimated yield on an actuarial value basis.

Actuarial Gains/ (Losses)

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the funds as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience over many years. Therefore, as long as the actual experience of a retirement system is reasonably close to the current assumptions, the long-term funding requirements of the system will remain relatively consistent.

Below are tables that separately show a reconciliation of the unfunded liability since the prior actuarial valuation for the retirement and health insurance funds, which include the effect of asset and liability gains and losses, changes in assumptions, and changes in plan provisions. See the discussion in the Executive Summary for additional information related to the liability experience and additional information in this section of the report related to the asset experience, plan changes, and assumption changes.

Retirement Experience Gain or (Loss)
(Dollar amounts expressed in thousands)

	Non-Hazardous	Hazardous
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	$ 7,525,308	$ 3,072,977
2. Normal cost and administrative expenses	297,643	113,879
3. Less: contributions for the year	(832,091)	(341,340)
4. Interest accrual	453,630	184,953
5. Expected UAAL (Sum of Items 1 - 4)	$ 7,444,490	$ 3,030,469
6. Actual UAAL as of June 30,2023	$ 6,725,050	$ 2,866,315
7. Total gain (loss) for the year (Item 5 - Item 6)	$ 719,440	$ 164,154
B. Source of gains and losses		
8. Asset gain (loss) for the year	$ 26,240	$ 7,209
9. Liability experience gain (loss) for the year	(208,863)	(118,980)
10. Plan Change	(3,985)	—
11. Assumption change	906,048	275,925
12. Total	$ 719,440	$ 164,154

Actuarial Gains/ (Losses) (Continued)

Insurance Experience Gain or (Loss)
(Dollar amounts expressed in thousands)

	Non-Hazardous	Hazardous
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	$ (768,094)	$ (15,630)
2. Normal cost and administrative expenses	72,694	28,246
3. Less: contributions for the year	(121,895)	(51,183)
4. Interest accrual	(49,543)	(1,694)
5. Expected UAAL (Sum of Items 1 - 4)	$ (866,838)	$ (40,261)
6. Actual UAAL as of June 30,2023	$ (803,998)	$ (7,637)
7. Total gain (loss) for the year (Item 5 - Item 6)	$ (62,840)	$ (32,624)
B. Source of gains and losses		
8. Asset gain (loss) for the year	$ 6,409	$ 4,873
9. Liability experience gain (loss) for the year	(229,453)	(101,119)
10. Plan Change	(3,441)	—
11. Assumption change	163,645	63,622
12. Total	$ (62,840)	$ (32,624)

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an annual investment return assumption. The Board of Trustees, in consultation with the actuary, sets the actuarial assumptions and methods used in the actuarial valuation.

An experience study was conducted after the June 30, 2022 actuarial valuation and the Board adopted updated assumptions for use in this actuarial valuation. The updated assumptions include:

Demographic Assumptions:
- Post-retirement mortality rates were updated based on KPPA experience.
- Mortality improvement assumption was updated to the ultimate rates of the MP-2020 mortality improvement scale.
- Rates of termination prior to retirement were increased based on CERS experience.
- Rates of disability incidence were decreased based on CERS experience.

Economic Assumptions:
- The rate of inflation was increased from 2.30% to 2.50%.
- The salary productivity assumption was reduced by 0.20%, resulting in no change in the salary increase assumption for long-service employees of 3.30% in the non-hazardous fund and 3.55% in the hazardous fund.
- The individual rates of salary increases were increased during the select period.
- The investment return assumption was increased from 6.25% to 6.50% for all funds.
- The Tier 3 cash balance interest crediting rate assumption was increased to 6.75%.

In conjunction with the review of the healthcare per capita claims cost, the assumed increase in future healthcare costs, or trend assumption, is reviewed on an annual basis. All other assumptions were adopted by the Board and are based on an experience study conducted based on experience through June 30, 2022. It is our opinion that the assumptions are internally consistent, reasonable, and reflect anticipated future experience of the System. Appendix A includes a summary of the actuarial assumptions and methods used in this valuation.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Benefit Provisions

Appendix B of this report includes a summary of the major benefit provisions for System. The following is a summary of the changes in benefits enacted since the last actuarial valuation.

House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, with the lump-sum options expanded to include 48 or 60 times the member's monthly retirement allowance. Since this optional form of payment results in a reduced, actuarial equivalent, monthly retirement allowance for members who elect a partial lump-sum option, this provision does not have a fiscal impact to the accrued liability.

House Bill 506 also adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances for each plan. This is a minimal change for members in the hazardous plan, as the minimum separation period is currently one month for members who become reemployed on a full-time basis in a hazardous position. The requirement was previously three months only for members who become reemployed on a part-time basis or in any non-hazardous position. We believe this provision of House Bill 506 will have an insignificant impact on the retirement pattern of hazardous members.

Similarly, this is a relatively small change for future retirees in the non-hazardous plan. But as the minimum separation period was previously three months in almost every circumstance, we have assumed that there would be a 1.0% increase in the rate of retirement for each of the first two years a non-hazardous member becomes retirement eligible under the age of 65, in order to reflect a shift in the retirement pattern.

There were no other material plan provision changes since the prior valuation.

SECTION 3

ACTUARIAL TABLES

Actuarial Tables

RETIREMENT BENEFITS

ACTUARIAL TABLES

Development of Unfunded Actuarial Accrued Liability
Retirement Benefits

(Dollar amounts expressed in thousands)

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Projected payroll of active members	$ 2,898,813	$ 677,988
2.	Present value of future pay	$ 21,182,513	$ 6,166,672
3.	Normal cost rate		
	a. Total normal cost rate	9.46%	17.46%
	b. Less: member contribution rate	-5.00%	-8.00%
	c. Employer normal cost rate	4.46%	9.46%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 7,417,501	$ 2,960,681
	b. Less: present value of future normal costs	(1,912,677)	(1,016,668)
	c. Actuarial accrued liability	$ 5,504,824	$ 1,944,013
5.	Total actuarial accrued liability		
	a. Retirees and beneficiaries	$ 9,117,883	$ 3,824,666
	b. Inactive members	673,722	81,316
	c. Active members (Item 4c)	5,504,824	1,944,013
	d. Total	$ 15,296,429	$ 5,849,995
6.	Actuarial value of assets	$ 8,571,379	$ 2,983,680
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ 6,725,050	$ 2,866,315
8.	Funded Ratio	56.0%	51.0%

Actuarial Present Value of Future Benefits
Retirement Benefits
(Dollar amounts expressed in thousands)

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Active members		
	a. Service retirement	$ 6,434,333	$ 2,658,737
	b. Deferred termination benefits and refunds	580,697	147,321
	c. Survivor benefits	118,837	24,554
	d. Disability benefits	283,634	130,069
	e. Total	$ 7,417,501	$ 2,960,681
2.	Retired members		
	a. Service retirement	$ 8,100,820	$ 3,470,814
	b. Disability retirement	432,300	111,132
	c. Beneficiaries	584,763	242,720
	d. Total	$ 9,117,883	$ 3,824,666
3.	Inactive members		
	a. Vested terminations	$ 579,936	$ 70,429
	b. Nonvested terminations	93,786	10,887
	c. Total	$ 673,722	$ 81,316
4.	Total actuarial present value of future benefits	$ 17,209,106	$ 6,866,663

Development of Actuarially Determined Contribution Rate
Retirement Benefits

	June 30, 2023	
	Non-Hazardous (1)	Hazardous (2)
1. Total normal cost rate		
a. Service retirement	5.98%	13.49%
b. Deferred termination benefits and refunds	2.57%	2.52%
c. Survivor benefits	0.32%	0.26%
d. Disability benefits	0.59%	1.19%
e. Total	9.46%	17.46%
2. Less: member contribution rate	-5.00%	-8.00%
3. Total employer normal cost rate	4.46%	9.46%
4. Administrative expenses	0.83%	0.31%
5. Net employer normal cost rate	5.29%	9.77%
6. UAAL amortization contribution rate	14.46%	27.02%
7. Total calculated employer contribution	19.75%	36.79%

Actuarial Balance Sheet

Non-Hazardous Members Retirement

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)	June 30, 2022 (2)
1.	Assets - Present and Expected Future Resources		
	a. Current assets (actuarial value)	$ 8,571,379	$ 8,148,912
	b. Present value of future member contributions	$ 1,059,126	$ 1,039,452
	c. Present value of future employer contributions		
	i. Normal cost contributions	$ 853,551	$ 949,098
	ii. Unfunded accrued liability contributions	6,725,050	7,525,308
	iii. Total future employer contributions	$ 7,578,601	$ 8,474,406
	d. Total assets	$ 17,209,106	$ 17,662,770
2.	Liabilities - Present Value of Expected Future Benefit Payments		
	a. Active members		
	i. Present value of future normal costs	$ 1,912,677	$ 1,988,550
	ii. Accrued liability	5,504,824	5,652,875
	iii. Total present value of future benefits	$ 7,417,501	$ 7,641,425
	b. Present value of benefits payable on account of current retired members and beneficiaries	$ 9,117,883	$ 9,360,994
	c. Present value of benefits payable on account of current inactive members	$ 673,722	$ 660,351
	d. Total liabilities	$ 17,209,106	$ 17,662,770

Actuarial Balance Sheet

Hazardous Members Retirement

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)	June 30, 2022 (2)
1.	Assets - Present and Expected Future Resources		
	a. Current assets (actuarial value)	$ 2,983,680	$ 2,788,714
	b. Present value of future member contributions	$ 493,334	$ 442,568
	c. Present value of future employer contributions		
	i. Normal cost contributions	$ 523,334	$ 481,548
	ii. Unfunded accrued liability contributions	2,866,315	3,072,977
	iii. Total future employer contributions	$ 3,389,649	$ 3,554,525
	d. Total assets	$ 6,866,663	$ 6,785,807
2.	Liabilities - Present Value of Expected Future Benefit Payments		
	a. Active members		
	i. Present value of future normal costs	$ 1,016,668	$ 924,116
	ii. Accrued liability	1,944,013	1,945,727
	iii. Total present value of future benefits	$ 2,960,681	$ 2,869,843
	b. Present value of benefits payable on account of current retired members and beneficiaries	$ 3,824,666	$ 3,836,616
	c. Present value of benefits payable on account of current inactive members	$ 81,316	$ 79,348
	d. Total liabilities	$ 6,866,663	$ 6,785,807

Reconciliation of Retirement Net Assets

(Dollar amounts expressed in thousands)[1]

	Year Ending June 30, 2023 (1) Non-Hazardous	Year Ending June 30, 2023 (2) Hazardous
1. Value of assets at beginning of year	$ 7,963,586	$ 2,718,234
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 145,491	$ 53,246
ii. Employer contributions	686,554	287,909
iii. Other contributions (less 401h)	46	186
iv. Total	$ 832,091	$ 341,340
b. Income		
i. Interest, dividends, and other income	$ 240,639	$ 83,560
ii. Investment expenses	(62,635)	(20,836)
iii. Net	$ 178,004	$ 62,724
c. Net realized and unrealized gains (losses)	627,301	217,310
d. Total revenue	$ 1,637,395	$ 621,374
3. Expenditures for the year		
a. Disbursements		
i. Refunds	$ 23,263	$ 6,568
ii. Regular annuity benefits	894,351	319,593
iii. Other benefit payments	0	0
iv. Transfers to other systems	0	0
v. Total	$ 917,615	$ 326,162
b. Administrative expenses and depreciation	24,128	2,124
c. Total expenditures	$ 941,743	$ 328,286
4. Increase in net assets (Item 2. - Item 3.)	$ 695,652	$ 293,089
5. Value of assets at end of year (Item 1. + Item 4.)	$ 8,659,238	$ 3,011,322
6. Net external cash flow		
a. Dollar amount	$ (109,652)	$ 13,055
b. Percentage of market value	-1.3%	0.5%
7. Estimated annual return on net assets	10.2%	10.3%

[1] Amounts may not add due to rounding

[1] Excludes 401h assets

Development of Actuarial Value of Assets

Non-Hazardous Members Retirement

(Dollar amounts expressed in thousands)*

	Year Ending		June 30, 2023
1.	Actuarial value of assets at beginning of year	$	8,148,912
2.	Market value of assets at beginning of year	$	7,963,586
3.	Net new investments		
	a. Contributions	$	832,091
	b. Benefit payments		(917,615)
	c. Administrative expenses		(24,128)
	d. Subtotal	$	(109,652)
4.	Market value of assets at end of year	$	8,659,238
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$	805,305
6.	Assumed investment return rate for fiscal year		6.25%
7.	Expected return for immediate recognition	$	494,297
8.	Excess return for phased recognition	$	311,007

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,		Excess Return		Recognized Amount
a.	2023	$	311,007	$	62,201
b.	2022		(1,026,802)		(205,360)
c.	2021		1,330,544		266,109
d.	2020		(385,418)		(77,084)
e.	2019		(40,218)		(8,044)
f.	Total			$	37,823

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$	8,571,379
11.	Ratio of actuarial value to market value		99.0%
12.	Estimated annual return on actuarial value of assets		6.6%

* Amounts may not add due to rounding

Development of Actuarial Value of Assets

Hazardous Members Retirement

(Dollar amounts expressed in thousands)*

	Year Ending		June 30, 2023
1.	Actuarial value of assets at beginning of year	$	2,788,714
2.	Market value of assets at beginning of year	$	2,718,234
3.	Net new investments		
	a. Contributions	$	341,340
	b. Benefit payments		(326,162)
	c. Administrative expenses		(2,124)
	d. Subtotal	$	13,055
4.	Market value of assets at end of year	$	3,011,322
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$	280,034
6.	Assumed investment return rate for fiscal year		6.25%
7.	Expected return for immediate recognition	$	170,298
8.	Excess return for phased recognition	$	109,736

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,		Excess Return		Recognized Amount
a.	2023	$	109,736	$	21,947
b.	2022		(355,681)		(71,136)
c.	2021		449,846		89,969
d.	2020		(133,383)		(26,677)
e.	2019		(12,449)		(2,490)
f.	Total			$	11,614

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$	2,983,680
11.	Ratio of actuarial value to market value		99.1%
12.	Estimated annual return on actuarial value of assets		6.5%

* Amounts may not add due to rounding

Schedule of Funding Progress
Retirement Benefits
(Dollar amounts expressed in thousands)

June 30, (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
			Non-Hazardous Members			
2014	$ 6,117,134	$ 9,772,523	$ 3,655,389	62.6%	$ 2,272,270	160.9%
2015	6,474,849	10,740,325	4,265,476	60.3%	2,296,716	185.7%
2016	6,535,372	11,076,457	4,541,085	59.0%	2,352,762	193.0%
2017	6,764,873	12,803,510	6,038,637	52.8%	2,452,407	246.2%
2018	6,950,225	13,191,505	6,241,280	52.7%	2,466,801	253.0%
2019	7,049,527	14,356,113	7,306,586	49.1%	2,521,860	289.7%
2020	7,220,607	14,610,868	7,390,261	49.4%	2,565,391	288.1%
2021	7,715,883	14,894,906	7,179,023	51.8%	2,528,735	283.9%
2022	8,148,912	15,674,220	7,525,308	52.0%	2,691,171	279.6%
2023	8,571,379	15,296,429	6,725,050	56.0%	2,898,813	232.0%
			Hazardous Members			
2014	$ 1,967,640	$ 3,288,826	$ 1,321,186	59.8%	$ 479,164	275.7%
2015	2,096,783	3,613,308	1,516,525	58.0%	483,641	313.6%
2016	2,139,119	3,704,456	1,565,337	57.7%	492,851	317.6%
2017	2,238,320	4,649,047	2,410,727	48.1%	541,633	445.1%
2018	2,321,721	4,792,548	2,470,827	48.4%	533,618	463.0%
2019	2,375,106	5,245,365	2,870,259	45.3%	559,353	513.1%
2020	2,447,885	5,431,299	2,983,414	45.1%	568,558	524.7%
2021	2,628,621	5,629,458	3,000,837	46.7%	578,355	518.9%
2022	2,788,714	5,861,691	3,072,977	47.6%	620,934	494.9%
2023	2,983,680	5,849,995	2,866,315	51.0%	677,988	422.8%
			Total CERS Members			
2014	$ 8,084,774	$ 13,061,349	$ 4,976,575	61.9%	$ 2,751,434	180.9%
2015	8,571,632	14,353,633	5,782,001	59.7%	2,780,357	208.0%
2016	8,674,491	14,780,913	6,106,422	58.7%	2,845,613	214.6%
2017	9,003,193	17,452,557	8,449,364	51.6%	2,994,040	282.2%
2018	9,271,946	17,984,053	8,712,107	51.6%	3,000,419	290.4%
2019	9,424,633	19,601,478	10,176,845	48.1%	3,081,213	330.3%
2020	9,668,492	20,042,167	10,373,675	48.2%	3,133,949	331.0%
2021	10,344,504	20,524,364	10,179,860	50.4%	3,107,090	327.6%
2022	10,937,626	21,535,911	10,598,285	50.8%	3,312,105	320.0%
2023	11,555,059	21,146,424	9,591,365	54.6%	3,576,801	268.2%

Summary of Principal Assumptions and Methods

Below is a summary of the principal economic assumptions, cost method, and the method for financing the unfunded actuarial accrued liability:

	Non-Hazardous	Hazardous
Valuation date:	June 30, 2023	June 30, 2023
Actuarial cost method:	Entry Age Normal	Entry Age Normal
Amortization method:	Level percentage of payroll (2% payroll growth assumed)	Level percentage of payroll (2% payroll growth assumed)
Amortization period for contribution rate:	30-year closed period at June 30, 2019 Gains/losses incurring after 2019 will be amortized over separate closed 20-year amortization bases	30-year closed period at June 30, 2019 Gains/losses incurring after 2019 will be amortized over separate closed 20-year amortization bases
Asset valuation method:	5-Year Smoothed Market	5-Year Smoothed Market
Actuarial assumptions:		
Investment rate of return	6.50%	6.50%
Projected salary increases	3.30% to 10.30% (varies by service)	3.55% to 19.05% (varies by service)
Inflation	2.50%	2.50%
Post-retirement benefit adjustments	0.00%	0.00%
Retiree Mortality	System-specific mortality table based on mortality experience from 2013 to 2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023.	System-specific mortality table based on mortality experience from 2013 to 2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023.

Solvency Test
Retirement Benefits
(Dollar amounts expressed in thousands)

June 30,	Actuarial Accrued Liability: Active Member Contributions	Actuarial Accrued Liability: Retired Members & Beneficiaries	Actuarial Accrued Liability: Active Members (Employer Financed)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets: Active	Retired	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Non-Hazardous Members				
2014	$ 1,204,383	$ 5,873,279	$ 2,694,860	$ 6,117,134	100.0%	83.6%	0.0%
2015	1,216,585	6,489,863	3,033,878	6,474,849	100.0%	81.0%	0.0%
2016	1,231,027	6,785,530	3,059,900	6,535,372	100.0%	78.2%	0.0%
2017	1,277,432	7,731,682	3,794,396	6,764,873	100.0%	71.0%	0.0%
2018	1,269,287	8,196,719	3,725,499	6,950,225	100.0%	69.3%	0.0%
2019	1,280,679	8,905,544	4,169,890	7,049,527	100.0%	64.8%	0.0%
2020	1,312,554	9,088,237	4,210,077	7,220,607	100.0%	65.0%	0.0%
2021	1,324,826	9,397,968	4,172,112	7,715,883	100.0%	68.0%	0.0%
2022	1,335,758	10,021,345	4,317,117	8,148,912	100.0%	68.0%	0.0%
2023	1,341,594	9,791,605	4,163,230	8,571,379	100.0%	73.8%	0.0%
			Hazardous Members				
2014	$ 415,070	$ 2,077,517	$ 796,239	$ 1,967,640	100.0%	74.7%	0.0%
2015	422,359	2,297,703	893,246	2,096,783	100.0%	72.9%	0.0%
2016	428,713	2,388,712	887,031	2,139,119	100.0%	71.6%	0.0%
2017	458,808	2,910,601	1,279,638	2,238,320	100.0%	61.1%	0.0%
2018	442,637	3,151,058	1,198,853	2,321,721	100.0%	59.6%	0.0%
2019	458,559	3,399,954	1,386,852	2,375,106	100.0%	56.4%	0.0%
2020	454,801	3,606,091	1,370,407	2,447,885	100.0%	55.3%	0.0%
2021	457,391	3,777,313	1,394,754	2,628,621	100.0%	57.5%	0.0%
2022	468,325	3,915,964	1,477,402	2,788,714	100.0%	59.3%	0.0%
2023	476,005	3,905,982	1,468,008	2,983,680	100.0%	64.2%	0.0%

INSURANCE BENEFITS

ACTUARIAL TABLES

Development of Unfunded Actuarial Accrued Liability
Insurance Benefits

(Dollar amounts expressed in thousands)

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Projected payroll of active members	$ 2,898,813	$ 677,988
2.	Present value of future pay	$ 20,590,398	$ 6,210,862
3.	Normal cost rate		
	a. Total normal cost rate	2.35%	3.77%
	b. Less: member contribution rate	-0.63%	-0.64%
	c. Employer normal cost rate	1.72%	3.13%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 1,760,563	$ 629,446
	b. Less: present value of future normal costs	(456,705)	(188,614)
	c. Actuarial accrued liability	$ 1,303,858	$ 440,832
5.	Total actuarial accrued liability		
	a. Retirees and beneficiaries	$ 1,063,114	$ 1,139,168
	b. Inactive members	193,415	24,146
	c. Active members (Item 4c)	1,303,858	440,832
	d. Total	$ 2,560,387	$ 1,604,146
6.	Actuarial value of assets	$ 3,364,385	$ 1,611,783
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ (803,998)	$ (7,637)
8.	Funded Ratio	131.4%	100.5%

Development of Actuarially Determined Contribution Rate
Insurance Benefits

		June 30, 2023	
		Non-Hazardous	Hazardous
		(1)	(2)
1.	Total normal cost rate	2.35%	3.77%
2.	Less: member contribution rate	-0.63%	-0.64%
3.	Total employer normal cost rate	1.72%	3.13%
4.	Administrative expenses	0.03%	0.08%
5.	Net employer normal cost rate	1.75%	3.21%
6.	UAAL amortization contribution rate	-2.85%	-1.05%
7.	Total calculated employer contribution	0.00%	2.16%

Actuarial Balance Sheet

Non-Hazardous Members Insurance

(Dollar amounts expressed in thousands)

	June 30, 2023 (1)	June 30, 2022 (2)
1. Assets - Present and Expected Future Resources		
a. Current assets (actuarial value)	$ 3,364,385	$ 3,160,084
b. Present value of future member contributions	$ 149,485	$ 140,458
c. Present value of future employer contributions		
i. Normal cost contributions	$ 307,220	$ 395,138
ii. Unfunded accrued liability contributions	(803,998)	(768,094)
iii. Total future employer contributions	$ (496,778)	$ (372,956)
d. Total assets	$ 3,017,092	$ 2,927,586
2. Liabilities - Present Value of Expected Future Benefit Payments		
a. Active members		
i. Present value of future normal costs	$ 456,705	$ 535,596
ii. Accrued liability	1,303,858	1,336,615
iii. Total present value of future benefits	$ 1,760,563	$ 1,872,211
b. Present value of benefits payable on account of current retired members and beneficiaries	$ 1,063,114	$ 977,116
c. Present value of benefits payable on account of current inactive members	$ 193,415	$ 78,259
d. Total liabilities	$ 3,017,092	$ 2,927,586

Actuarial Balance Sheet

Hazardous Members Insurance

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)		June 30, 2022 (2)
1. Assets - Present and Expected Future Resources				
a. Current assets (actuarial value)	$	1,611,783	$	1,553,761
b. Present value of future member contributions	$	50,990	$	43,624
c. Present value of future employer contributions				
i. Normal cost contributions	$	137,624	$	163,721
ii. Unfunded accrued liability contributions		(7,637)		(15,630)
iii. Total future employer contributions	$	129,987	$	148,091
d. Total assets	$	1,792,760	$	1,745,476
2. Liabilities - Present Value of Expected Future Benefit Payments				
a. Active members				
i. Present value of future normal costs	$	188,614	$	207,345
ii. Accrued liability		440,832		493,109
iii. Total present value of future benefits	$	629,446	$	700,454
b. Present value of benefits payable on account of current retired members and beneficiaries	$	1,139,168	$	1,027,782
c. Present value of benefits payable on account of current inactive members	$	24,146	$	17,240
d. Total liabilities	$	1,792,760	$	1,745,476

Reconciliation of Insurance Net Assets

(Dollar amounts expressed in thousands)[1]

	Year Ending			
	June 30, 2023		June 30, 2023	
	(1)		(2)	
	Non-Hazardous		**Hazardous**	
1. Value of assets at beginning of year	$	3,079,984	$	1,522,671
2. Revenue for the year				
a. Contributions				
i. Member contributions	$	17,472	$	3,967
ii. Employer contributions		99,501		45,605
iii. Other contributions (less 401h)		4,922		1,611
iv. Total	$	121,895	$	51,183
b. Income				
i. Interest, dividends, and other income	$	88,936	$	44,086
ii. Investment expenses		(22,977)		(11,956)
iii. Net	$	65,960	$	32,130
c. Net realized and unrealized gains (losses)		250,156		118,540
d. Total revenue	$	438,011	$	201,853
3. Expenditures for the year				
a. Disbursements				
i. Refunds	$	0	$	0
ii. Healthcare premium subsidies		123,587		93,485
iii. Other benefit payments[2]		(3,004)		(196)
iv. Transfers to other systems		0		0
v. Total	$	120,583	$	93,289
b. Administrative expenses and depreciation		937		522
c. Total expenditures	$	121,520	$	93,811
4. Increase in net assets (Item 2. - Item 3.)	$	316,491	$	108,042
5. Value of assets at end of year (Item 1. + Item 4.)	$	3,396,475	$	1,630,713
6. Net external cash flow				
a. Dollar amount	$	375	$	(42,628)
b. Percentage of market value		0.0%		-2.7%
7. Estimated annual return on net assets		10.3%		10.0%

[1] Amounts may not add due to rounding and include 401h assets

[2] Benefit payments have been offset by Medicare Drug Reimbursements, Insurance Premiums, and Humana Gain Share Payments

Development of Actuarial Value of Assets

Non-Hazardous Members Insurance

(Dollar amounts expressed in thousands)*

	Year Ending		June 30, 2023
1.	Actuarial value of assets at beginning of year	$	3,160,084
2.	Market value of assets at beginning of year	$	3,079,984
3.	Net new investments		
	a. Contributions	$	121,895
	b. Benefit payments		(120,583)
	c. Administrative expenses		(937)
	d. Subtotal	$	375
4.	Market value of assets at end of year	$	3,396,475
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$	316,116
6.	Assumed investment return rate for fiscal year		6.25%
7.	Expected return for immediate recognition	$	192,511
8.	Excess return for phased recognition	$	123,605

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,		Excess Return		Recognized Amount
a.	2023	$	123,605	$	24,721
b.	2022		(380,135)		(76,027)
c.	2021		478,981		95,796
d.	2020		(151,527)		(30,305)
e.	2019		(13,849)		(2,770)
f.	Total			$	11,415

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$	3,364,385
11.	Ratio of actuarial value to market value		99.1%
12.	Estimated annual return on actuarial value of assets		6.5%

* Amounts may not add due to rounding

Development of Actuarial Value of Assets

Hazardous Members Insurance

(Dollar amounts expressed in thousands)*

	Year Ending		June 30, 2023
1.	Actuarial value of assets at beginning of year	$	1,553,761
2.	Market value of assets at beginning of year	$	1,522,671
3.	Net new investments		
	a. Contributions	$	51,183
	b. Benefit payments		(93,289)
	c. Administrative expenses		(522)
	d. Subtotal	$	(42,628)
4.	Market value of assets at end of year	$	1,630,713
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$	150,670
6.	Assumed investment return rate for fiscal year		6.25%
7.	Expected return for immediate recognition	$	93,835
8.	Excess return for phased recognition	$	56,835

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,		Excess Return		Recognized Amount
a.	2023	$	56,835	$	11,367
b.	2022		(180,610)		(36,122)
c.	2021		244,967		48,993
d.	2020		(80,794)		(16,159)
e.	2019		(6,320)		(1,264)
f.	Total			$	6,816

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$	1,611,783
11.	Ratio of actuarial value to market value		98.8%
12.	Estimated annual return on actuarial value of assets		6.6%

* Amounts may not add due to rounding

Schedule of Funding Progress
Insurance Benefits
(Dollar amounts expressed in thousands)

June 30, (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
			Non-Hazardous Members			
2014	$ 1,831,199	$ 2,616,915	$ 785,716	70.0%	$ 2,272,270	34.6%
2015	1,997,456	2,907,827	910,371	68.7%	2,296,716	39.6%
2016	2,079,811	2,988,121	908,310	69.6%	2,352,762	38.6%
2017	2,227,401	3,355,151	1,127,750	66.4%	2,452,407	46.0%
2018	2,371,430	3,092,624	721,194	76.7%	2,466,801	29.2%
2019	2,523,249	3,567,947	1,044,698	70.7%	2,521,860	41.4%
2020	2,661,351	3,392,085	730,734	78.5%	2,565,391	28.5%
2021	2,947,312	3,450,484	503,172	85.4%	2,528,735	19.9%
2022	3,160,084	2,391,990	(768,094)	132.1%	2,691,171	-28.5%
2023	3,364,385	2,560,387	(803,998)	131.4%	2,898,813	-27.7%
			Hazardous Members			
2014	$ 997,733	$ 1,493,864	$ 496,131	66.8%	$ 479,164	103.5%
2015	1,087,707	1,504,015	416,308	72.3%	483,641	86.1%
2016	1,135,784	1,558,818	423,034	72.9%	492,851	85.8%
2017	1,196,780	1,788,433	591,653	66.9%	541,633	109.2%
2018	1,256,306	1,684,028	427,722	74.6%	533,618	80.2%
2019	1,313,659	1,732,879	419,220	75.8%	559,353	74.9%
2020	1,362,028	1,740,971	378,943	78.2%	568,558	66.6%
2021	1,475,635	1,751,203	275,568	84.3%	578,355	47.6%
2022	1,553,761	1,538,131	(15,630)	101.0%	620,934	-2.5%
2023	1,611,783	1,604,146	(7,637)	100.5%	677,988	-1.1%
			Total CERS Members			
2014	$ 2,828,932	$ 4,110,779	$ 1,281,847	68.8%	$ 2,751,434	46.6%
2015	3,085,163	4,411,842	1,326,679	69.9%	2,780,357	47.7%
2016	3,215,595	4,546,939	1,331,344	70.7%	2,845,613	46.8%
2017	3,424,181	5,143,584	1,719,403	66.6%	2,994,040	57.4%
2018	3,627,736	4,776,652	1,148,916	75.9%	3,000,419	38.3%
2019	3,836,908	5,300,826	1,463,918	72.4%	3,081,213	47.5%
2020	4,023,379	5,133,056	1,109,677	78.4%	3,133,949	35.4%
2021	4,422,947	5,201,687	778,740	85.0%	3,107,090	25.1%
2022	4,713,845	3,930,121	(783,724)	119.9%	3,312,105	-23.7%
2023	4,976,168	4,164,533	(811,635)	119.5%	3,576,801	-22.7%

Solvency Test
Insurance Benefits
(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
June 30,	Active Member Contributions	Retired Members & Beneficiaries	Active Members (Employer Financed)	Valuation Assets	Active	Retired	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Non-Hazardous Members				
2014	$ -	$ 1,318,183	$ 1,298,732	$ 1,831,199	100.0%	100.0%	39.5%
2015	-	1,372,597	1,535,231	1,997,456	100.0%	100.0%	40.7%
2016	-	1,484,937	1,503,184	2,079,811	100.0%	100.0%	39.6%
2017	-	1,603,438	1,751,713	2,227,401	100.0%	100.0%	35.6%
2018	-	1,525,323	1,567,301	2,371,430	100.0%	100.0%	54.0%
2019	-	1,830,692	1,737,255	2,523,249	100.0%	100.0%	39.9%
2020	-	1,746,159	1,645,926	2,661,351	100.0%	100.0%	55.6%
2021	-	1,835,734	1,614,750	2,947,312	100.0%	100.0%	68.8%
2022	-	1,055,375	1,336,615	3,160,084	100.0%	100.0%	100.0%
2023	-	1,256,529	1,303,858	3,364,385	100.0%	100.0%	100.0%
			Hazardous Members				
2014	$ -	$ 700,312	$ 793,553	$ 997,733	100.0%	100.0%	37.5%
2015	-	790,714	713,301	1,087,707	100.0%	100.0%	41.6%
2016	-	879,360	679,458	1,135,784	100.0%	100.0%	37.7%
2017	-	994,764	793,669	1,196,780	100.0%	100.0%	25.5%
2018	-	1,001,717	682,311	1,256,306	100.0%	100.0%	37.3%
2019	-	1,072,861	660,018	1,313,659	100.0%	100.0%	36.5%
2020	-	1,154,389	586,582	1,362,028	100.0%	100.0%	35.4%
2021	-	1,217,527	533,676	1,475,635	100.0%	100.0%	48.4%
2022	-	1,045,022	493,109	1,553,761	100.0%	100.0%	100.0%
2023	-	1,163,314	440,832	1,611,783	100.0%	100.0%	100.0%

SECTION 4

AMORTIZATION BASES

Amortization of Unfunded Liability

Non-Hazardous Members Retirement

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 7,306,586	$ 7,435,524	$ 491,099	26
June 30, 2020	(43,634)	66,979	5,738	17
June 30, 2021	(333,595)	(309,010)	(25,479)	18
June 30, 2022	327,156	321,136	25,560	19
June 30, 2023	(789,579)	(789,579)	(69,447)	20
Total		$ 6,725,050	$ 427,471	
Projected Payroll for FYE 2025			$ 2,956,789	
Amortization Payments as a Percentage of Payroll			14.46%	

Hazardous Members Retirement

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 2,870,259	$ 2,942,476	$ 194,344	26
June 30, 2020	41,583	108,703	9,312	17
June 30, 2021	(57,337)	(16,374)	(1,350)	18
June 30, 2022	32,971	22,410	1,784	19
June 30, 2023	(190,900)	(190,900)	(17,255)	20
Total		$ 2,866,315	$ 186,835	
Projected Payroll for FYE 2025			$ 691,547	
Amortization Payments as a Percentage of Payroll			27.02%	

Note:
Budgeted contribution rates for FYE 2024 were known at the time of the June 30, 2023 Valuation. Amortization bases established at this valuation date were adjusted accordingly.

Amortization of Unfunded Liability

Non-Hazardous Members Insurance

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 1,044,698	$ 1,063,613	$ 70,249	26
June 30, 2020	(332,646)	(330,342)	(28,300)	17
June 30, 2021	(219,172)	(231,064)	(19,052)	18
June 30, 2022	(1,261,234)	(1,352,616)	(107,658)	19
June 30, 2023	46,411	46,411	1,307	20
Total		$ (803,998)	$ (83,454)	
Projected Payroll for FYE 2025			$ 2,925,572	
Amortization Payments as a Percentage of Payroll			-2.85%	

Hazardous Members Insurance

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 419,220	$ 422,114	$ 27,880	26
June 30, 2020	(43,079)	(45,084)	(3,862)	17
June 30, 2021	(100,257)	(107,826)	(8,891)	18
June 30, 2022	(282,650)	(303,548)	(24,160)	19
June 30, 2023	26,707	26,707	1,846	20
Total		$ (7,637)	$ (7,187)	
Projected Payroll for FYE 2025			$ 687,257	
Amortization Payments as a Percentage of Payroll			-1.05%	

Note:
Budgeted contribution rates for FYE 2024 were known at the time of the June 30, 2023 Valuation. Amortization bases established at this valuation date were adjusted accordingly.

SECTION 5

MEMBERSHIP INFORMATION

Membership Tables

Summary of Membership Data

(Total dollar amounts expressed in thousands)

		Non-Hazardous June 30, 2023 (1)	Hazardous June 30, 2023 (2)	Total June 30, 2023 (3)	Total June 30, 2022 (4)
1.	Active members				
a.	Males	29,042	8,195	37,237	36,892
b.	Females	49,768	1,010	50,778	50,141
c.	Total members	78,810	9,205	88,015	87,033
d.	Total annualized prior year salaries	$ 2,898,813	$ 677,988	$ 3,576,801	$ 3,312,105
e.	Average salary[3]	$ 36,782	$ 73,654	$ 40,639	$ 38,056
f.	Average age	47.3	38.1	46.4	46.7
g.	Average service	8.8	9.8	8.9	9.2
h.	Member contributions with interest	$ 1,341,594	$ 476,005	$ 1,817,599	$ 1,804,083
i.	Average contributions with interest[3]	$ 17,023	$ 51,712	$ 20,651	$ 20,729
2.	Vested inactive members[2]				
a.	Number	50,491	1,835	52,326	52,410
b.	Total annual deferred benefits	$ 88,832	$ 8,829	$ 97,661	$ 92,991
c.	Average annual deferred benefit[3]	$ 1,759	$ 4,811	$ 1,866	$ 1,774
d.	Average age at the valuation date	54.5	46.9	54.3	53.8
3.	Nonvested inactive members[2]				
a.	Number	60,595	2,452	63,047	57,397
b.	Total member contributions with interest	$ 90,567	$ 10,476	$ 101,043	$ 88,583
c.	Average contributions with interest[3]	$ 1,495	$ 4,272	$ 1,603	$ 1,543
4.	Service retirees[1]				
a.	Number	60,494	9,550	70,044	67,875
b.	Total annual benefits	$ 743,114	$ 282,699	$ 1,025,813	$ 980,923
c.	Average annual benefit[3]	$ 12,284	$ 29,602	$ 14,645	$ 14,452
d.	Average age at the valuation date	71.3	62.9	70.2	69.9
5.	Disabled retirees[1]				
a.	Number	3,770	590	4,360	4,447
b.	Total annual benefits	$ 44,206	$ 10,035	$ 54,241	$ 55,147
c.	Average annual benefit[3]	$ 11,726	$ 17,008	$ 12,441	$ 12,401
d.	Average age at the valuation date	67.3	59.0	66.2	65.7
6.	Beneficiaries[1]				
a.	Number	6,668	1,463	8,131	7,798
b.	Total annual benefits	$ 67,853	$ 24,795	$ 92,648	$ 86,573
c.	Average annual benefit[3]	$ 10,176	$ 16,948	$ 11,394	$ 11,102
d.	Average age at the valuation date	68.7	60.2	67.2	66.9

[1] 4,013 members receiving benefits in both the non-hazardous and hazardous fund. Members' headcounts and hazardous benefits included in the hazardous summary above. Members' additional $29,929,000 in non-hazardous annual benefits not included in summary above.

[2] Vested inactive member section includes Tier 1 members eligible for a benefit equal to the actuarially equivalent of two times the member's contribution balance.

[3] Average dollar amounts shown are expressed to the dollar.

Summary of Historical Active Membership

June 30,	Active Members: Number	Active Members: Percent Increase /(Decrease)	Covered Payroll[1]: Amount in Thousands	Covered Payroll[1]: Percent Increase /(Decrease)	Average Annual Pay: Amount	Average Annual Pay: Percent Increase /(Decrease)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-Hazardous Members						
2014	81,115		$ 2,272,270		$ 28,013	
2015	80,852	-0.3%	2,296,716	1.1%	28,406	1.4%
2016	80,664	-0.2%	2,352,762	2.4%	29,167	2.7%
2017	82,198	1.9%	2,452,407	4.2%	29,835	2.3%
2018	81,818	-0.5%	2,466,801	0.6%	30,150	1.1%
2019	81,506	-0.4%	2,521,860	2.2%	30,941	2.6%
2020	81,250	-0.3%	2,565,391	1.7%	31,574	2.0%
2021	77,367	-4.8%	2,528,735	-1.4%	32,685	3.5%
2022	77,849	0.6%	2,691,171	6.4%	34,569	5.8%
2023	78,810	1.2%	2,898,813	7.7%	36,782	6.4%
Hazardous Members						
2014	9,194		$ 479,164		$ 52,117	
2015	9,172	-0.2%	483,641	0.9%	52,730	1.2%
2016	9,084	-1.0%	492,851	1.9%	54,255	2.9%
2017	9,495	4.5%	541,633	9.9%	57,044	5.1%
2018	9,263	-2.4%	533,618	-1.5%	57,607	1.0%
2019	9,474	2.3%	559,353	4.8%	59,041	2.5%
2020	9,419	-0.6%	568,558	1.6%	60,363	2.2%
2021	9,173	-2.6%	578,355	1.7%	63,050	4.5%
2022	9,184	0.1%	620,934	7.4%	67,610	7.2%
2023	9,205	0.2%	677,988	9.2%	73,654	8.9%

[1] Covered payroll is the annualized, projected compensation for the following year and does not include payroll attributable to working retirees.

Distribution of Active Members by Age and by Years of Service

Non-Hazardous Members

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	431	35	0	0	0	0	0	0	0	0	0	0	466
	$13,946	$17,359	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$14,203
20-24	1,852	965	376	157	61	23	0	0	0	0	0	0	3,434
	$21,218	$28,155	$30,695	$32,936	$37,909	$35,815	$0	$0	$0	$0	$0	$0	$25,135
25-29	1,650	1,103	642	560	427	707	12	0	0	0	0	0	5,101
	$25,561	$31,284	$33,832	$35,516	$37,574	$42,662	$46,299	$0	$0	$0	$0	$0	$32,357
30-34	1,566	1,190	654	625	601	1,709	347	11	1	0	0	0	6,704
	$24,433	$29,788	$32,040	$35,137	$37,263	$42,088	$50,565	$57,281	$20,335	$0	$0	$0	$34,180
35-39	1,422	1,016	614	560	611	1,903	933	410	11	0	0	0	7,480
	$25,349	$29,341	$32,734	$32,933	$34,733	$41,663	$50,794	$55,212	$64,891	$0	$0	$0	$36,851
40-44	1,230	918	580	617	666	2,276	1,155	1,033	451	24	0	0	8,950
	$25,682	$30,598	$32,990	$32,808	$34,732	$37,958	$47,130	$55,131	$57,533	$70,049	$0	$0	$38,837
45-49	963	795	501	514	597	2,219	1,423	1,253	1,016	301	5	0	9,587
	$27,129	$32,607	$33,310	$34,072	$36,224	$37,158	$43,477	$50,188	$56,695	$62,201	$94,493	$0	$40,876
50-54	918	680	504	486	515	2,150	1,652	1,718	1,414	605	63	2	10,707
	$27,130	$30,946	$33,982	$34,796	$35,245	$38,436	$39,969	$44,702	$51,226	$62,751	$73,723	$190,534	$41,004
55-59	789	605	403	426	516	1,832	1,479	1,726	1,749	700	134	35	10,394
	$25,644	$31,395	$30,072	$32,761	$37,582	$36,810	$38,914	$41,535	$43,732	$53,482	$65,063	$69,610	$39,104
60-64	619	531	376	351	466	1,680	1,319	1,533	1,406	726	152	45	9,204
	$22,385	$25,309	$26,911	$29,541	$30,043	$34,538	$38,830	$40,438	$41,738	$46,102	$59,738	$64,540	$36,631
65 & Over	636	461	293	328	429	1,392	1,111	938	621	338	147	89	6,783
	$18,657	$21,274	$22,578	$23,635	$26,826	$29,248	$32,654	$38,064	$43,169	$43,805	$45,002	$61,367	$31,540
Total	12,076	8,299	4,943	4,624	4,889	15,891	9,431	8,622	6,669	2,694	501	171	78,810
	$24,045	$29,502	$31,583	$32,917	$34,727	$37,748	$41,658	$45,150	$47,787	$53,482	$58,944	$65,400	$36,782

Distribution of Active Members by Age and by Years of Service
Hazardous Members

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	9	1	0	0	0	0	0	0	0	0	0	0	10
	$37,346	$46,176	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$38,229
20-24	224	177	81	45	10	2	0	0	0	0	0	0	539
	$42,338	$54,479	$59,067	$64,140	$76,494	$64,078	$0	$0	$0	$0	$0	$0	$51,373
25-29	210	217	196	237	194	346	4	0	0	0	0	0	1,404
	$44,395	$55,371	$64,076	$61,131	$67,799	$69,407	$76,915	$0	$0	$0	$0	$0	$61,155
30-34	112	128	110	133	150	855	198	2	0	0	0	0	1,688
	$45,103	$56,133	$63,330	$59,862	$66,911	$72,085	$78,188	$67,807	$0	$0	$0	$0	$67,802
35-39	56	75	66	64	89	528	662	228	1	0	0	0	1,769
	$44,509	$54,675	$58,552	$63,103	$68,381	$72,711	$82,231	$84,522	$204,014	$0	$0	$0	$75,119
40-44	47	23	31	37	26	214	359	640	114	5	0	0	1,496
	$47,301	$55,605	$60,560	$60,524	$67,009	$71,689	$83,238	$89,632	$96,251	$123,343	$0	$0	$82,579
45-49	22	15	17	16	17	109	182	394	216	57	3	0	1,048
	$43,577	$59,226	$64,342	$63,957	$67,788	$68,911	$77,332	$86,957	$98,801	$103,993	$128,543	$0	$84,559
50-54	16	15	13	16	15	82	105	217	176	82	12	1	750
	$40,719	$66,446	$62,973	$65,213	$64,657	$66,636	$78,331	$85,456	$95,168	$108,613	$136,234	$163,185	$85,556
55-59	10	9	4	4	5	37	59	94	55	21	9	4	311
	$42,233	$58,259	$115,273	$77,685	$70,637	$63,368	$78,921	$82,712	$90,227	$100,436	$147,001	$112,768	$82,615
60-64	3	3	2	1	6	17	20	54	15	10	5	5	141
	$38,817	$44,737	$47,885	$56,317	$67,471	$69,816	$66,927	$80,579	$84,776	$81,961	$82,121	$138,513	$77,154
65 & Over	0	1	2	0	3	8	5	17	6	5	0	2	49
	$0	$26,411	$42,646	$0	$60,576	$53,319	$67,725	$81,063	$114,639	$101,495	$0	$95,387	$78,016
Total	709	664	522	553	515	2,198	1,594	1,646	583	180	29	12	9,205
	$43,807	$55,481	$62,464	$61,569	$67,659	$71,175	$80,766	$86,926	$96,379	$104,927	$129,450	$124,800	$73,654

Distribution of Annuitant Monthly Benefit by Status and Age
Non-Hazardous Retirees and Beneficiaries
(Dollar amounts expressed in thousands)

	Retirement		Disability		Survivors & Beneficiaries		Total	
Current Age	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Under 50	269	$ 6,737	103	$ 1,295	773	$ 6,965	1,145	$ 14,996
50 - 54	1,254	25,830	231	2,984	287	2,546	1,772	31,359
55 - 59	3,799	65,955	388	5,097	429	4,635	4,616	75,687
60 - 64	8,305	125,073	774	10,019	728	8,736	9,807	143,828
65 - 69	13,865	177,334	873	10,189	873	9,401	15,611	196,924
70 - 74	13,680	157,144	653	7,238	1,088	11,855	15,421	176,237
75 - 79	9,703	99,796	412	4,354	976	9,910	11,091	114,060
80 - 84	5,798	53,949	233	2,183	790	8,120	6,821	64,252
85 - 89	2,706	22,511	82	683	474	3,952	3,262	27,146
90 And Over	1,115	8,785	21	164	250	1,734	1,386	10,684
Total	**60,494**	**$ 743,114**	**3,770**	**$ 44,206**	**6,668**	**$ 67,853**	**70,932**	**$ 855,173**

*Amounts may not add due to rounding

Distribution of Annuitant Monthly Benefit by Status and Age
Hazardous Retirees and Beneficiaries
(Dollar amounts expressed in thousands)

	Retirement		Disability		Survivors & Beneficiaries		Total	
Current Age	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Under 50	954	$ 35,174	110	$ 2,025	328	$ 3,860	1,392	$ 41,058
50 - 54	1,452	50,792	111	1,920	103	1,687	1,666	54,399
55 - 59	1,670	54,189	101	1,898	119	2,194	1,890	58,280
60 - 64	1,465	43,020	98	1,647	147	2,678	1,710	47,345
65 - 69	1,458	38,021	85	1,256	227	4,108	1,770	43,386
70 - 74	1,336	34,608	53	799	197	4,103	1,586	39,511
75 - 79	736	16,551	22	365	156	2,857	914	19,772
80 - 84	352	7,684	7	83	115	2,286	474	10,052
85 - 89	107	2,099	3	43	54	820	164	2,962
90 And Over	20	561	0	0	17	202	37	764
Total	**9,550**	**$ 282,699**	**590**	**$ 10,035**	**1,463**	**$ 24,795**	**11,603**	**$ 317,529**

*Amounts may not add due to rounding

Non-Hazardous Retired Lives Summary

Form of Payment	Male Lives Number	Male Lives Monthly Benefit Amount	Female Lives Number	Female Lives Monthly Benefit Amount	Total Number	Total Monthly Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	6,546	$ 7,213,370	24,881	$ 19,332,841	31,427	$ 26,546,211
Joint & Survivor:						
100% to Beneficiary	4,517	5,571,549	3,117	2,208,435	7,634	7,779,984
66 2/3% to Beneficiary	916	1,823,954	860	982,335	1,776	2,806,289
50% to Beneficiary	1,288	2,189,705	2,088	2,510,852	3,376	4,700,557
Pop-up Option	4,325	7,287,004	4,531	4,999,978	8,856	12,286,982
Social Security Option:						
Age 62 Basic	234	418,037	563	682,379	797	1,100,416
Age 62 Survivorship	577	1,096,404	396	433,349	973	1,529,754
Partial Deferred (Old Plan)	0	0	0	0	0	0
Widows Age 60	0	0	0	0	0	0
5 Years Certain	0	0	0	0	0	0
10 Years Certain	0	0	0	0	0	0
10 Years Certain & Life	1,592	1,905,686	4,260	3,556,307	5,852	5,461,993
15 Years Certain & Life	762	864,825	1,279	993,643	2,041	1,858,467
20 Years Certain & Life	526	757,800	1,006	781,528	1,532	1,539,329
Total:	21,283	$ 29,128,334	42,981	$ 36,481,649	64,264	$ 65,609,982

Hazardous Retired Lives Summary

	Male Lives			Female Lives			Total		
Form of Payment	Number		Monthly Benefit Amount	Number		Monthly Benefit Amount	Number		Monthly Benefit Amount
(1)	(2)		(3)	(4)		(5)	(6)		(7)
Basic	1,419	$	3,025,882	448	$	770,734	1,867	$	3,796,616
Joint & Survivor:									
100% to Beneficiary	1,615		3,646,972	82		122,325	1,697		3,769,297
66 2/3% to Beneficiary	401		1,045,632	31		75,053	432		1,120,685
50% to Beneficiary	583		1,524,833	68		163,250	651		1,688,083
Pop-up Option	3,919		10,589,389	198		456,443	4,117		11,045,832
Social Security Option:									
Age 62 Basic	112		176,396	14		17,912	126		194,308
Age 62 Survivorship	311		598,422	24		40,325	335		638,747
Partial Deferred (Old Plan)	0		0	0		0	0		0
Widows Age 60	0		0	0		0	0		0
5 Years Certain	0		0	0		0	0		0
10 Years Certain	121		414,124	8		24,354	129		438,477
10 Years Certain & Life	276		619,493	78		152,764	354		772,257
15 Years Certain & Life	137		289,382	28		58,625	165		348,007
20 Years Certain & Life	230		522,764	37		59,442	267		582,206
Total:	9,124	$	22,453,289	1,016	$	1,941,225	10,140	$	24,394,514

Non-Hazardous Beneficiary Lives Summary

Form of Payment	Male Lives Number	Male Lives Monthly Benefit Amount	Female Lives Number	Female Lives Monthly Benefit Amount	Total Number	Total Monthly Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	30	$ 10,796	74	$ 74,660	104	$ 85,457
Joint & Survivor:						
100% to Beneficiary	608	382,425	2,168	1,684,789	2,776	2,067,214
66 2/3% to Beneficiary	96	56,594	311	270,569	407	327,163
50% to Beneficiary	225	108,019	451	271,864	676	379,883
Pop-up Option	316	292,406	1,102	1,274,941	1,418	1,567,346
Social Security Option:						
Age 62 Basic	1	1,291	5	4,806	6	6,097
Age 62 Survivorship	30	22,410	198	254,770	228	277,179
Partial Deferred (Old Plan)	0	0	0	0	0	0
Widows Age 60	0	0	0	0	0	0
5 Years Certain	110	113,445	140	140,517	250	253,962
10 Years Certain	160	110,103	201	182,593	361	292,695
10 Years Certain & Life	69	55,621	95	98,434	164	154,055
15 Years Certain & Life	48	40,619	101	90,070	149	130,689
20 Years Certain & Life	46	27,797	83	84,893	129	112,690
Total:	1,739	$ 1,221,525	4,929	$ 4,432,905	6,668	$ 5,654,431

Hazardous Beneficiary Lives Summary

	Male Lives			Female Lives			Total		
Form of Payment	Number		Monthly Benefit Amount	Number		Monthly Benefit Amount	Number		Monthly Benefit Amount
(1)	(2)		(3)	(4)		(5)	(6)		(7)
Basic	17	$	10,535	94	$	116,021	111	$	126,556
Joint & Survivor:									
100% to Beneficiary	32		31,938	394		541,565	426		573,503
66 2/3% to Beneficiary	2		1,688	78		117,398	80		119,086
50% to Beneficiary	20		17,253	127		123,895	147		141,148
Pop-up Option	49		33,012	437		805,676	486		838,688
Social Security Option:									
Age 62 Basic	0		0	2		1,641	2		1,641
Age 62 Survivorship	0		0	108		144,873	108		144,873
Partial Deferred (Old Plan)	0		0	0		0	0		0
Widows Age 60	0		0	2		1,469	2		1,469
5 Years Certain	6		8,535	7		12,543	13		21,078
10 Years Certain	16		21,928	25		28,794	41		50,722
10 Years Certain & Life	2		6,642	9		7,538	11		14,180
15 Years Certain & Life	6		6,755	8		9,282	14		16,037
20 Years Certain & Life	5		3,088	17		14,189	22		17,276
Total:	155	$	141,372	1,308	$	1,924,884	1,463	$	2,066,256

Schedule of Retirees Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

Year Ended	Added to Rolls Number	Removed from Rolls Number	Rolls End of the Year Number	Rolls End of the Year Annual Benefits	% Increase in Annual Benefit	Average Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-Hazardous						
2014	3,480	1,221	49,935	$ 582,958		$ 11,674
2015	4,020	1,304	52,651	617,551	5.9%	11,729
2016	4,409	721	56,339	661,217	7.1%	11,736
2017	4,141	1,467	59,013	667,468	0.9%	11,311
2018	4,650	1,725	61,938	710,374	6.4%	11,469
2019	4,472	1,871	64,539	747,117	5.2%	11,576
2020	3,550	2,675	65,414	763,459	2.2%	11,671
2021	4,350	2,558	67,206	791,562	3.7%	11,778
2022	4,693	3,010	68,889	820,678	3.7%	11,913
2023	4,753	2,710	70,932	855,173	4.2%	12,056
Hazardous						
2014	469	116	7,646	$ 191,008		$ 24,981
2015	526	138	8,034	202,153	5.8%	25,162
2016	604	75	8,563	215,302	6.5%	25,143
2017	576	141	8,998	226,680	5.3%	25,192
2018	779	190	9,587	245,675	8.4%	25,626
2019	608	172	10,023	258,813	5.3%	25,822
2020	621	192	10,452	274,791	6.2%	26,291
2021	651	245	10,858	288,876	5.1%	26,605
2022	674	301	11,231	301,966	4.5%	26,887
2023	672	300	11,603	317,529	5.2%	27,366

SECTION 6

ASSESSMENT AND DISCLOSURE OF RISK

Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution

(As Required by ASOP No. 51)

The determination of CERS's accrued liability and actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects of future experience differing from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of this actuarial valuation does not include any analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the System's future financial condition include:

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future contributions differing from expected;
- Salary and payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liabilities or contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions (for example, actual contributions not being paid in accordance with the System's funding policy, withdrawal liability assessments or other anticipated payments to the plan are not being paid, or material changes occurring in the anticipated number of covered employees, covered payroll, or another relevant contribution base).

Effects of certain experience can generally be anticipated. For example, if investment returns since the most recent actuarial valuation are less (or more) than the assumed rate of return, then the funded status of the plan can be expected to decrease (or increase) more than anticipated.

The required contributions in this report were established in accordance with applicable Statutes and assumptions adopted by the Board. However, stakeholders should be aware that the scheduled contributions specified in State Code do not necessarily guarantee that the contribution requirements will not increase in a future year.

Employer Risk with Contribution Rates

Currently contributions are collected from participating employers based on the employer's total payroll of employees who are earning benefits in CERS (i.e. covered payroll). The actuarially determined contribution rate is comprised of two components - the normal cost rate (to pay for the benefits accruing in the next year) and the unfunded amortization (to pay for the benefits accrued by members in previous years). The unfunded amortization is calculated by first determining the dollar amount necessary to pay for the unfunded liability based on CERS's funding policy, and then by dividing that dollar amount by expected covered payroll to convert that contribution requirement to a percentage of payroll (i.e. a contribution rate).

As the contribution requirement, as a percentage of payroll, increases then there is increased incentive for participating employers to make deliberate business action to reduce their payroll reported to the System in order to reduce their pension cost.

Plan Specific Risk Measures

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of market value of assets to payroll: The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. If assets are approximately the same as covered payroll, an investment return that is 5% different than assumed would equal 5% of payroll. In another example, if the assets are approximately twice as large as covered payroll, an investment return that is 5% different than assumed would equal 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Ratio of actuarial accrued liability to payroll: The ratio of actuarial accrued liability to payroll can be used as a measure to indicate the potential volatility of contributions due to volatility in the liability experience. For instance, if the actuarial accrued liability is 5 times the size of the covered payroll, then a change in the liability that is 2% different than expected would be a change in magnitude that is 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Percentage of Expected Contributions Actually Received: This measure identifies the percentage difference between the contributions the fund expects to receive during the fiscal year to and actual contributions received by the fund during the fiscal year. A percentage that is less than 100% means that actual contributions the fund received were less than the expected contributions determined by a prior actuarial valuation. On the other hand, a percentage that is greater than 100% means that actual contributions the fund received were more than the expected contributions.

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.

The following tables provide a summary of these measures for CERS Non-Hazardous and Hazardous Funds for the current year and the prior four years so stakeholders can identify how these measures are trending. While ASOP No. 51 requires this disclosure with respect to only the retirement funds, we have included this information for the insurance funds for completeness.

CERS Non-Hazardous

	Retirement Fund					Insurance Fund				
	June 30,					June 30,				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Ratio of the market value of assets to total payroll	2.99	2.96	3.39	2.74	2.84	1.17	1.14	1.28	1.01	1.02
Ratio of actuarial accrued liability to payroll	5.28	5.82	5.89	5.70	5.69	0.88	0.89	1.36	1.32	1.41
Ratio of net cash flow to market value of assets	-1.3%	-1.3%	-2.9%	-2.7%	-3.5%	0.0%	0.3%	0.8%	0.1%	0.7%
Percentage of Expected Contribution Actually Received	107% [1]	99%	76%	82%	72%	107% [1]	110%	88%	102%	87%
Ratio of actives to retirees and beneficiaries	1.11	1.13	1.15	1.24	1.26					

[1] Expected contribution for FYE 2023 based on the actuarially determined contribution rate of 26.79% from the June 30, 2021 valuation and expected compensation based on census data from the June 30, 2022 valuation.

CERS Hazardous

	Retirement Fund					Insurance Fund				
	June 30,					June 30,				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Ratio of the market value of assets to total payroll	4.44	4.38	5.04	4.19	4.32	2.41	2.45	2.81	2.32	2.40
Ratio of actuarial accrued liability to payroll	8.63	9.44	9.73	9.55	9.38	2.37	2.48	3.03	3.06	3.10
Ratio of net cash flow to market value of assets	0.5%	-0.8%	-2.3%	-2.1%	-2.8%	-2.7%	-1.6%	-1.4%	-1.6%	-1.0%
Percentage of Expected Contribution Actually Received	106% [1]	87%	71%	80%	71%	106% [1]	113%	102%	104%	92%
Ratio of actives to retirees and beneficiaries	0.79	0.82	0.84	0.90	0.95					

[1] Expected contribution for FYE2023 based on the actuarially determined contribution rate of 49.59% from the June 30, 2021 valuation and expected compensation based on census data from the June 30, 2022 valuation.

Low-Default-Risk Obligation Measure

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the "Low-Default-Risk Obligation Measure" (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> "The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan.** The calculation and disclosure of this additional measure is **not intended to suggest that this is the "right" liability measure** for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."**

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the County Employees' Retirement System (CERS) is to finance each member's retirement benefits over the period from the member's date of hire until the member's projected date of retirement (entry age actuarial cost method) as a level percentage of payroll. To fulfill this objective, the discount rate that is used to value the accrued liabilities is set equal to the **expected return** on each fund's diversified portfolio of assets (referred to sometimes as the investment return assumption). For the retirement funds, the investment return assumption is 6.50%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. The LDROM results presented in this report are based on the entry age actuarial cost method and discount rates based upon the intermediate rate from the FTSE Pension Discount Curve and Liability Index published by the Society of Actuaries. This rate is 4.90% as of June 30, 2023. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The difference between the two measures (Valuation and LDROM) is one illustration of the savings the sponsor anticipates by taking on risk in a diversified portfolio.

Non-Hazardous Retirement Fund

Valuation Accrued Liabilities	LDROM
$15,296,428,191	$18,226,017,367

Hazardous Retirement Fund

Valuation Accrued Liabilities	LDROM
$5,849,996,034	$7,098,773,846

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the County Employees Retirement System.

In general, the assumptions and methods used in the valuation are based on the actuarial experience study as of June 30, 2022 and adopted by the Board in May 2023.

Investment return rate:

Assumed annual rate of 6.50% net of investment expenses for the retirement funds and the insurance funds

Price Inflation:

Assumed annual rate of 2.50%

Payroll Growth Assumption (used for amortization of unfunded accrued liabilities):

Assumed annual rate of 2.00%

Rates of Annual Salary Increase:

Assumed rates of annual salary increases are shown below.

Service Years	Annual Rates of Salary Increase					
	Merit & seniority		Price Inflation & Productivity		Total Increase	
	Non-Hazardous	Hazardous	Non-Hazardous	Hazardous	Non-Hazardous	Hazardous
0	7.00%	15.50%	3.30%	3.55%	10.30%	19.05%
1	4.00%	5.50%	3.30%	3.55%	7.30%	9.05%
2	3.00%	3.50%	3.30%	3.55%	6.30%	7.05%
3	2.00%	2.50%	3.30%	3.55%	5.30%	6.05%
4	1.75%	2.25%	3.30%	3.55%	5.05%	5.80%
5	1.50%	2.00%	3.30%	3.55%	4.80%	5.55%
6	1.25%	2.00%	3.30%	3.55%	4.55%	5.55%
7	1.00%	1.50%	3.30%	3.55%	4.30%	5.05%
8	0.75%	1.50%	3.30%	3.55%	4.05%	5.05%
9	0.75%	1.00%	3.30%	3.55%	4.05%	4.55%
10	0.50%	1.00%	3.30%	3.55%	3.80%	4.55%
11	0.50%	0.50%	3.30%	3.55%	3.80%	4.05%
12	0.25%	0.50%	3.30%	3.55%	3.55%	4.05%
13	0.25%	0.50%	3.30%	3.55%	3.55%	4.05%
14	0.25%	0.25%	3.30%	3.55%	3.55%	3.80%
15	0.00%	0.25%	3.30%	3.55%	3.30%	3.80%
16 & Over	0.00%	0.00%	3.30%	3.55%	3.30%	3.55%

Retirement rates:

Assumed annual rates of retirement are shown below. Rates are only applicable for members who are eligible for a service retirement.

	Non-Hazardous					Hazardous		
	Normal Retirement		Early Retirement[1]			Members participating before 9/1/2008[2]	Members participating between 9/1/2008 and 1/1/2014[3]	Members participating after 1/1/2014[3]
Age	Male	Female	Male	Female	Service			
Under 45	35.0%	27.0%			5	17.0%		
45	35.0%	27.0%			6	17.0%		
46	35.0%	27.0%			7	17.0%		
47	35.0%	27.0%			8	17.0%		
48	35.0%	27.0%			9	17.0%		
49	35.0%	27.0%			10	17.0%		
50	30.0%	27.0%			11	17.0%		
51	30.0%	27.0%			12	17.0%		
52	30.0%	27.0%			13	17.0%		
53	30.0%	27.0%			14	17.0%		
54	30.0%	27.0%			15	17.0%		
55	30.0%	27.0%	4.0%	5.0%	16	17.0%		
56	30.0%	27.0%	4.0%	5.0%	17	17.0%		
57	30.0%	27.0%	4.0%	5.0%	18	17.0%		
58	30.0%	27.0%	4.0%	5.0%	19	17.0%		
59	30.0%	27.0%	4.0%	5.0%	20	30.0%		
60	30.0%	27.0%	4.0%	8.0%	21	22.5%		
61	30.0%	27.0%	4.0%	9.0%	22	18.0%		
62	30.0%	40.0%	15.0%	20.0%	23	21.0%		
63	30.0%	35.0%	15.0%	18.0%	24	24.0%		
64	30.0%	30.0%	15.0%	16.0%	25	27.0%	21.6%	16.0%
65	30.0%	30.0%			26	30.0%	24.0%	16.0%
66	30.0%	27.0%			27	33.0%	26.4%	16.0%
67	30.0%	27.0%			28	36.0%	28.8%	16.0%
68	30.0%	27.0%			29	39.0%	31.2%	16.0%
69	30.0%	27.0%			30+	39.0%	31.2%	100.0%
70	30.0%	27.0%						
71	30.0%	27.0%						
72	30.0%	27.0%						
73	30.0%	27.0%						
74	30.0%	27.0%						
75	100.0%	100.0%						

[1] The annual rate of retirement is 11% for male members and 12% for female members with 25-26 years of service.
[2] The annual rate of retirement is 100% at age 62.
[3] The annual rate of retirement is 100% at age 60.
Non-Hazardous: There is a 1% increase in the first two years a member becomes eligible under the age of 65. For members hired after 7/1/2003, the rates shown above are multiplied by 80% if the member is under age 65 to reflect the different retiree health insurance benefit.
Hazardous: For members hired after 7/1/2003 and prior to 9/1/2008, the rates shown above are multiplied by 80% if the member is under age 62 to reflect the different retiree health insurance benefit.

Disability rates:

An abbreviated table with assumed rates of disability is show below.

Age	Non-Hazardous		Hazardous	
	Male	Female	Male	Female
20	0.04%	0.04%	0.06%	0.06%
30	0.06%	0.06%	0.11%	0.11%
40	0.13%	0.13%	0.24%	0.24%
50	0.37%	0.37%	0.67%	0.67%
60	0.97%	0.97%	1.75%	1.75%

Withdrawal rates (for causes other than disability and retirement):

Assumed annual rates of withdrawal are shown below and include pre-retirement mortality rates as described on the next page.

Service Years	Annual Rates of Withdrawal	
	Non-Hazardous	Hazardous
1	20.00%	20.00%
2	17.92%	10.48%
3	14.35%	8.33%
4	12.26%	7.06%
5	10.78%	6.18%
6	9.63%	5.47%
7	8.69%	4.91%
8	7.90%	4.43%
9	7.21%	4.01%
10	6.60%	3.66%
11	6.06%	3.32%
12	5.57%	3.02%
13	5.12%	2.76%
14	4.70%	2.51%
15	4.32%	2.28%
16	3.97%	2.07%
17	3.63%	1.86%
18	3.32%	1.68%
19	3.04%	1.50%
20	2.75%	1.33%
21	2.48%	0.00%
22	2.23%	0.00%
23	2.00%	0.00%
24	1.77%	0.00%
25	1.55%	0.00%
26 & Over	0.00%	0.00%

Mortality Assumption:

Pre-retirement mortality: PUB-2010 General Mortality table, for the non-hazardous funds, and the PUB-2010 Public Safety Mortality table for the hazardous funds, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010.

Post-retirement mortality (non-disabled): System-specific mortality table based on mortality experience from 2013-2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023.

The following table provides the life expectancy for a non-disabled retiree in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years					
Gender	**Year of Retirement**				
	2025	**2030**	**2035**	**2040**	**2045**
Male	19.8	20.2	20.6	21.0	21.3
Female	22.4	22.7	23.1	23.4	23.7

Post-retirement mortality (disabled): PUB-2010 Disabled Mortality table, with rates multiplied by 150% for both male and female rates, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010.

Marital status:

100% of employees are assumed to be married, with the female spouse 3 years younger than the male spouse.

Line of Duty/Duty-Related Disability

Non-Hazardous: 2% of disabilities are assumed to be duty-related (100% of which are assumed to be "total and permanent")

Hazardous: 50% of disabilities are assumed to occur in the line of duty (10% of which are assumed to be "total and permanent")

Line of Duty Death

25% of deaths are assumed to occur in the line of duty

Dependent Children:

For members in the Hazardous Plan who receive a duty-related death or disability benefit, the member is assumed to be survived by two dependent children, each age 6 with payments for 15 years.

Form of Payment:

Members are assumed to elect a life-only annuity at retirement.

Actuarial Cost Method:

Entry Age Normal, Level Percentage of Pay. The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of pay necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

Health Care Age Related Morbidity/Claims Utilization:

To model the impact of aging on the underlying health care costs for Medicare retirees, the valuation relied on the Society of Actuaries' 2013 Study "Health Care Costs – From Birth to Death". Table 4 (Development of Plan Specific Medicare Age Curve) was used to model the impact of aging for ages 65 and over.

Health Care Cost Trend Rates:

Year	Non-Medicare Plans[1]	Medicare Plans[1]	Dollar Contribution[2]
2025	6.80%	8.50%	1.50%
2026	6.55%	8.00%	1.50%
2027	6.30%	8.00%	1.50%
2028	6.05%	8.00%	1.50%
2029	5.80%	7.50%	1.50%
2030	5.55%	7.00%	1.50%
2031	5.30%	6.50%	1.50%
2032	5.05%	6.00%	1.50%
2033	4.90%	5.50%	1.50%
2034	4.75%	5.00%	1.50%
2035	4.60%	4.50%	1.50%
2036	4.45%	4.05%	1.50%
2037	4.30%	4.05%	1.50%
2038 & Beyond	4.05%	4.05%	1.50%

[1]All increases are assumed to occur on January 1. The 2024 premiums were known at the time of the valuation and were incorporated into the liability measurement
[2]Applies to members participating on or after July 1, 2003. All increases are assumed to occur on July 1.

Health care trend assumptions are based on the model issued by the Society of Actuaries "Getzen model of Long-Run Medical Cost Trends for the SOA; Thomas E. Getzen, iHEA and Temple University 2014 © Society of Actuaries.

The underlying assumptions used to develop the health care trend rates include:

- A short run period-this is a period for which anticipated health care trend rates are manually set based on local information as well as plan-specific and carrier information.
- Long term real GDP growth – 1.75%
- Long term rate of inflation – 2.30%
- Long term nominal GDP growth – 4.05%
- Year that excess rate converges to 0 – 2036

Health care trend rates are thus the manually set rates for the short run period and rates which decline to an ultimate trend rate which equals the assumed nominal long-term GDP growth rate.

Health Care Participation Assumptions:

- Active members are assumed to elect health coverage at retirement at the following participation rates.

Service at Retirement	Members participating before 7/1/2003*	Members participating after 7/1/2003
Under 10	50%	100%
10-14	75%	100%
15-19	90%	100%
Over 20	100%	100%

* 100% of members with a duty disability or a duty death (in service) benefit are assumed to elect coverage at retirement.

- Future retirees are assumed to have a similar distribution by plan type as the current retirees.

Medicare Plan	Participation Percentage	Non-Medicare Plan	Participation Percentage
Medical Only[1]	5%	LivingWell Basic	4%
Essential Plan	8%	LivingWell CDHP	35%
Premium Plan	87%	LivingWell PPO	61%

[1] Includes Mirror Plans

- 50% of deferred vested members participating before July 1, 2003 are assumed to elect health coverage at retirement. 100% of deferred vested members participating after July 1, 2003 are assumed to elect health coverage at retirement.

- Deferred vested members receiving insurance benefits from the non-hazardous fund are assumed to begin health coverage at age 55 for members participating before September 1, 2008, at age 60 for members participating on or after September 1, 2008 but before January 1, 2014, and at age 65 for members participating on or after January 1, 2014.

- Deferred vested members receiving insurance benefits from the hazardous fund are assumed to begin health coverage at age 50 for members participating before January 1, 2014 and at age 60 for members participating on or after January 1, 2014.

- 75% of future retirees, with hazardous service, are assumed to elect spouse health care coverage. No dependent coverage is assumed for members who only have non-hazardous service. 100% of spouses with health care coverage are assumed to continue coverage after the member's death.

Other Assumptions

1. Valuation payroll (used for determining the amortization contribution rate): Current fiscal year payroll.

2. Individual salaries used to project benefits: For salary amounts prior to the valuation date, the salary from the last fiscal year is projected backward with the valuation salary scale assumption. For future salaries, the salary from the last fiscal year is projected forward with one year's salary scale.

3. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported salaries represent amounts paid to members during the year ending on the valuation date.

4. Current active members that terminate employment (for reasons other than retirement, disability, or death) are assumed to commence their retirement benefits at first unreduced retirement eligibility. Members are assumed to elect a refund of member contributions if the value of their account balance exceeds the present value of the deferred benefit. Members participating in the Cash Balance plan are assumed to elect to receive a lump sum of their cash balance account if their account balance exceeds the present value of the deferred benefit and the member is not eligible for insurance benefits at termination.

5. The beneficiaries of current active members that die while active are assumed to commence their survivor benefits at the member's first unreduced retirement eligibility. Beneficiaries are assumed to elect a refund of member contributions if the value of the member's account balance exceeds the present value of the survivor benefit. Beneficiaries of active members that die while in the line of duty are assumed to commence their survivor benefits immediately at the death of the member.

6. There will be no recoveries once disabled.

7. Cash Balance Provisions: The cash balance interest crediting rate while a member is an active employee is assumed to equal 6.75%. The interest crediting rate after a member terminates employment is 4%.

8. Decrement timing: Decrements of all types are assumed to occur mid-year. Decrement rates are used as described in this report, without adjustment for multiple decrement table effects.

9. Service: All members are assumed to accrue 1 year of benefit and eligibility service each year.

10. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

11. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

12. Current Inactive Population (Retirement Fund): All non-vested members are assumed to take an immediate refund of member contributions. Vested members are assumed to elect an immediate refund of member contributions at the valuation date if the value of their account balance exceeds the present value of their deferred benefit. Non-hazardous members are assumed to retire at age 65. Hazardous members hired prior to September 1, 2008 are assumed to retire at age 55 and hazardous members hired on or after September 1, 2008 are assumed to retire at age 60.

13. The additional $5 per year of service insurance dollar subsidy effective January 1, 2023 is assumed to be paid in all applicable years.

Participant Data

Participant data was supplied in electronic text files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active and terminated members included date of birth, gender, date of participation, benefit tier indicator, service with the current system, total vesting service, salary, employee contribution account balances, and employer pay credits for members participating in the cash balance plan. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Assumptions were made to correct for missing, bad, or inconsistent data. These had no material impact on the results presented.

Changes in assumptions since the prior valuation:

Demographic and economic assumptions were updated based on the 2022 Experience Study.

A 1% increase in the rate of retirement for each of the first two years a non-hazardous member becomes retirement eligible under the age of 65 is assumed to reflect the shift in retirement pattern due to House Bill 506.

In conjunction with the review of the healthcare per capita claims cost, the assumed increase in future healthcare costs, or trend assumption, is reviewed on an annual basis. The trend assumption was increased during the select period in this valuation as a result of our review.

Development of Baseline Claims Cost

For non-Medicare retirees, the initial per capita costs were based on the plan premiums effective January 1, 2024, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees. The spouse/dependent premium of $1,129.72 for non-Medicare retirees is based on a blending of Family and Couple premiums for the current retirees that have over 4 years of hazardous service. The fully-insured premiums paid to the Kentucky Employees' Health Plan (KEHP) are blended rates based on the combined experience of active and retired members. Because the average cost of providing health care benefits to retirees under age 65 is higher than the average cost of providing health care benefits to active employees, there is an implicit rate subsidy for the non-Medicare eligible retirees. Actuarial Standard of Practice No. 6 (ASOP No. 6) requires aging subsidies (or implicit rate subsidies) to be recognized. However, the health insurance trusts are only used to reimburse KEHP for the employer's portion of the blended premiums. Said another way, the trusts are not used to fund the difference between the underlying retiree claims and the blended KEHP premiums. As a result, the retiree health care liabilities developed in this report for the non-Medicare retirees are based solely on the premiums charged by KEHP, without any age-adjustment. GASB Statements No. 74 and No. 75 prohibit such a deviation from ASOP No. 6. The liabilities developed in this report are solely for the purpose of funding the benefits paid by the health insurance funds and are not appropriate for financial statement disclosures required by GASB. GRS provides separate GASB reports which include the liabilities associated with the implicit rate subsidy.

2024 Monthly Costs for those not eligible for Medicare		
Age	Member	Spouse/Dependents
<65	$929.46	$1,129.72

For Medicare retirees, the initial per capita costs were estimated based on the plan premiums effective January 1, 2024, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees. Age graded and sex distinct premiums are utilized for retirees over the age of 65. These costs are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/sex specific costs more accurately reflect the health care utilization and cost at that age.

2024 Monthly Costs for those eligible for Medicare		
Age	Male	Female
65	$ 81.35	$ 76.72
75	95.18	92.87
85	100.65	101.83

Appendix B of the report provides a full schedule of premiums.

The percentage of the insurance premium paid by CERS is calculated based on the Medical Only premium amounts. The majority of CERS Medicare retirees are covered under the Premium Medicare Advantage plan. Because the premiums for the Medical Only plan are higher than the Premium Medical Advantage plan, retirees with less than 20 years of service pay a smaller contribution toward their insurance coverage. To model the impact of the employer contribution being based on the Medical Only Plan rather than the plan selected by the retiree, the employer share for retirees qualifying for percentage-based subsidies was blended to reflect retiree plan selection.

The above assumption implicitly implies that the Medical Only plan premiums will increase at a rate of 4.90% as of January 1, 2024, decreasing over 9 years to an ultimate trend rate of 4.05%, and that the remaining Medicare plan premiums will increase at the Medicare trend assumption used in the actuarial valuation.

Blake Orth is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Blake Orth

Blake Orth, FSA, EA, MAAA

APPENDIX B

BENEFIT PROVISIONS

Summary of Benefit Provisions for County Employees Retirement System (CERS)

CERS Non-Hazardous Employees

Retirement: Tier 1, Participation before 9/1/2008

Normal Retirement Eligibility	Age 65 with at least 1 month of service credit; or Any age with at least 27 years of service
Benefit Amount	If a member has at least 48 months of service, the monthly benefit is 2.00% times final average compensation times years of service. For members who began participating prior to 8/1/2004, the monthly benefit is 2.20% times final average compensation times years of service. If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest. Final average compensation is based on the member's highest 5 years of compensation.
Early Retirement Eligibility	Any age (prior to age 65) with at least 25 years of service; or Age 55 with at least 5 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement eligibility precedes the member's normal retirement date.

CERS Non-Hazardous Employees (continued)

Retirement: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Normal Retirement Eligibility: Age 65 with at least 5 years of service; or
Rule of 87 (Age 57 or older if age plus service equals 87)

Benefit Amount: The monthly benefit is equal to the applicable benefit multiplier times final average compensation times years of service.

Years of Service	Benefit Multiplier
10 or less	1.10%
10-20	1.30%
20-26	1.50%
26-30	1.75%
Greater than 30*	2.00%

* The 2.00% benefit multiplier only applies to service credit in excess of 30 years. If a member has greater than 30 years of service at retirement, service prior to 30 years will be multiplied by the 1.75% benefit multiplier.

Final compensation is based on the member's last 5 years of compensation.

Early Retirement Eligibility: Age 60 with at least 10 years of service

Early Retirement Reduction: Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement date precedes the member's normal retirement eligibility.

Retirement: Tier 3, Participation on or after 1/1/2014

Normal Retirement Eligibility: Age 65 with at least 5 years of service; or
Rule of 87 (Age 57 or older if age plus service equals 87)

Benefit Amount: Each year that the member is active, a 4.00% employer pay credit and the employee's 5.00% contribution will be credited to each member's hypothetical cash balance account. The hypothetical account will earn interest at a minimum rate of 4%, annually. If the System's geometric average net investment return for the previous five years exceeds 4%, then the hypothetical account will be credited with an additional amount of interest in that year equal to 75% of the amount of the return which exceeds 4%. All interest credits will be applied to the hypothetical account balance on June 30 based on the account balance as of June 30 of the previous year.

At retirement, the member's hypothetical account balance may be converted into an annuity based on an actuarial factor.

Early Retirement Eligibility: N/A

CERS Non-Hazardous Employees (continued)

Deferred Vested Benefit: Tier 1, Participation before 9/1/2008

Eligibility	At least 1 month of service credit
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Eligibility	5 years of service
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit Tier 3, Participation on or after 1/1/2014

Eligibility	5 years of service
Benefit Amount	At termination of employment, members may choose to leave their account balance with the System and retire once they are eligible. The hypothetical account balance will earn 4% annual interest after termination. Members may also choose to withdrawal their entire accumulated balance. If a member does not have 5 years of service at termination, the member is eligible to receive a partial refund of their account balance. This refund includes the member's contributions with interest.

Disability Retirement: Participation before 8/1/2004

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	Disability benefits are calculated in the same manner as the normal retirement benefit with years of service and final compensation being determined as of the date of disability, except that service credit shall be added to the person's total service beginning with the last date of paid employment and continuing to the member's 65th birthday, with total service not exceeding 25 years. Total service credit added shall not be greater than the member's actual service at disability. For members with at least 25 years of service on the last day of paid employment but less than 27 years of service, total service shall be 27 years. For members with 27 or more years of service credit, actual service will be used.

CERS Non-Hazardous Employees (continued)

Disability Retirement: Participation on or after 8/1/2004 but before 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 20% of the member's final monthly rate of pay or the member's normal retirement benefit (without reduction for early retirement) with years and final compensation being determined as of the date of disability.

Disability Retirement: Participation on or after 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 20% of the member's final monthly rate of pay or the member's retirement benefit calculated at the member's normal retirement date.

Duty-Related Disability Benefit

Disability Benefit	If the disability is a direct result of an act in the line of duty, the benefit shall not be less than 25% of the member's final monthly final rate of pay. If the disability is deemed to be Total and Permanent (and the member is working in a non-hazardous position that could be certified as a hazardous position), then this benefit shall not be less than 75% of the member's monthly average pay.
Child Benefit	Additionally, each eligible dependent child will receive 10% of the member's monthly average pay up to a maximum of 40%. Member and dependent payment shall not exceed 100% of member's monthly average pay.

Pre-Retirement Death Benefit

Eligibility	Eligible for early or normal retirement; or Under age 65 with at least 60 months of service and actively working at the time of death; or At least 144 months of service, if no longer actively working
Spouse Benefit	The member's retirement benefit calculated in the same manner as if the member had retired on the day of the member's death and elected a 100% joint and survivor benefit. The benefit is actuarially reduced if the member dies prior to their normal retirement age.

CERS Non-Hazardous Employees (continued)

Pre-Retirement Death Benefit (Death in the Line of Duty)

Eligibility	One month of service credit
Spouse Benefit	A $10,000 lump sum payment plus a monthly payment of 75% of the deceased member's final monthly average pay. Each dependent child will receive 10% of the final monthly average pay (not to exceed a total child benefit of 25% while the spouse is alive). A spouse may also elect the non-line of duty death benefit.
Child Benefit	In the event there is no surviving spouse, the benefit is 50% of final monthly average pay for one child, 65% of final monthly average pay for two children, or 75% of final monthly average pay for three or more eligible children.

Post-Retirement Death Benefit

Eligibility	48 months of service, and in receipt of retirement benefits
Death Benefit	A $5,000 lump sum payment

Member Contributions

Tier 1, Participation before 9/1/2008	5% of creditable compensation. Members who do not receive a retirement benefit are entitled to a full refund of contributions with interest. The annual interest rate is set by the Board, not less than 2.0%.
Tier 2, Participation on or after 9/1/2008 but before 1/1/2014	5% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest. The annual interest rate is 2.5%.
Tier 3, Participation after 1/1/2014	5% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest.

Changes in Non-Hazardous Retirement Benefits since the Prior Valuation

House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, and adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances.

CERS Hazardous Employees

Retirement: Tier 1, Participation before 9/1/2008

Normal Retirement Eligibility	Age 55 with at least 1 month of service credit; or Any age with at least 20 years of service
Benefit Amount	If a member has at least 60 months of service, the monthly benefit is 2.50% times final average compensation times years of service. If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest. Final average compensation is based on the member's highest 3 years of compensation.
Early Retirement Eligibility	Age 50 with at least 15 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement date precedes the member's normal retirement eligibility.

CERS Hazardous Employees (continued)

Retirement: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Normal Retirement Eligibility	Age 60 with at least 5 years of service; or Any age with at least 25 years of service
Benefit Amount	The monthly benefit is equal to the applicable benefit multiplier times final average compensation times years of service.

Years of Service	Benefit Multiplier
10 or less	1.30%
10-20	1.50%
20-25	2.25%
Greater than 25	2.50%

Final average compensation is based on the member's highest 3 years of compensation.

Early Retirement Eligibility	Age 50 with at least 15 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement date precedes the member's normal retirement eligibility.

Retirement: Tier 3, Participation on or after 1/1/2014

Normal Retirement Eligibility	Age 60 with at least 5 years of service; or Any age with at least 25 years of service
Benefit Amount	Each year that the member is active, a 7.50% employer pay credit and the employee's 8.00% contribution will be credited to each member's hypothetical cash balance account. The hypothetical account will earn interest at a minimum rate of 4%, annually. If the System's geometric average net investment return for the previous five years exceeds 4%, then the hypothetical account will be credited with an additional amount of interest in that year equal to 75% of the amount of the return which exceeds 4%. All interest credits will be applied to the hypothetical account balance on June 30 based on the account balance as of June 30 of the previous year. At retirement, the member's hypothetical account balance may be converted into an annuity based on an actuarial factor.
Early Retirement Eligibility	N/A

CERS Hazardous Employees (continued)

Deferred Vested Benefit: Tier 1, Participation before 9/1/2008

Eligibility	At least 1 month of service credit
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Eligibility	5 years of service
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit Tier 3, Participation on or after 1/1/2014

Eligibility	5 years of service
Benefit Amount	At termination of employment, members may choose to leave their account balance with the System and retire once they are eligible. The hypothetical account balance will earn 4% annual interest after termination. Members may also choose to withdrawal their entire accumulated balance. If a member does not have 5 years of service at termination, the member is eligible to receive a partial refund of their account balance. This refund includes the member's contributions with interest.

Disability Retirement: Participation before 8/1/2004

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	Disability benefits are calculated in the same manner as the normal retirement benefit with years of service and final compensation being determined as of the date of disability, except that if the member has less than 20 years of service at disability, service credit shall be added to the person's total service beginning with the last date of paid employment and continuing to the member's 55th birthday, with total service not exceeding 20 years. Total service credit added shall not be greater than the member's actual service at disability.

CERS Hazardous Employees (continued)

Disability Retirement: Participation on or after 8/1/2004 but before 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 25% of the member's final monthly rate of pay or the member's normal retirement benefit (without reduction for early retirement) with years and final compensation being determined as of the date of disability.

Disability Retirement: Participation on or after 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 25% of the member's final monthly rate of pay or the member's retirement benefit calculated at the member's normal retirement date.

Line of Duty Disability Benefit

Disability Benefit	If the disability is a direct result of an act in the line of duty, the benefit shall not be less than 25% of the member's final monthly final rate of pay. If the disability is deemed to be Total and Permanent, then this benefit shall not be less than 75% of the member's monthly average pay.
Child Benefit	Additionally, each eligible dependent child will receive 10% of the member's monthly average pay up to a maximum of 40%. Member and dependent payment shall not exceed 100% of member's monthly average pay.

Pre-Retirement Death Benefit

Eligibility	Eligible for early or normal retirement; or Under age 55 with at least 60 months of service and actively working at the time of death; or At least 144 months of service, if no longer actively working
Spouse Benefit	The member's retirement benefit calculated in the same manner as if the member had retired on the day of the member's death and elected a 100% joint and survivor benefit. The benefit is actuarially reduced if the member dies prior to their normal retirement age.

CERS Hazardous Employees (continued)

Pre-Retirement Death Benefit (Death in the Line of Duty)

Eligibility	One month of service credit
Spouse Benefit	A $10,000 lump sum payment plus a monthly payment of 75% of the deceased member's final monthly average pay. Each dependent child will receive 10% of the final monthly average pay (not to exceed a total child benefit of 25% while the spouse is alive). A spouse may also elect the non-line of duty death benefit.
Non-Spouse Benefit	If the beneficiary is only one person who is a dependent receiving at least 50% of his or her support from the member, the beneficiary may elect a lump sum payment of$10,000.
Child Benefit	In the event there is no surviving spouse, the benefit is 50% of final monthly average pay for one child, 65% of final average pay for two children, or 75% of final average pay for three or more eligible children.

Post-Retirement Death Benefit

Eligibility	48 months of service, and in receipt of retirement benefits
Death Benefit	A $5,000 lump sum payment

Member Contributions

Tier 1, Participation before 9/1/2008	8% of creditable compensation. Members who do not receive a retirement benefit are entitled to a full refund of contributions with interest. The annual interest rate is set by the Board, not less than 2.0%.
Tier 2, Participation on or after 9/1/2008 but before 1/1/2014	8% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest. The annual interest rate is 2.5%.
Tier 3, Participation after 1/1/2014	8% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest.

Changes in Hazardous Retirement Benefits since the Prior Valuation

House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, and adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances.

Summary of Main Retiree Insurance Benefit Provisions

Insurance: Participation began before 7/1/2003

Benefit Eligibility Recipient of a retirement allowance

Benefit Amount

Non-Hazardous Service	Percentage of Member Premium Paid by Retirement System	Hazardous Service	Percentage of Member & Dependent Premium Paid by Retirement System
Less than 4 years	0%	Less than 4 years	0%
4 – 9 years	25%	4 – 9 years	25%
10 – 14 years	50%	10 – 14 years	50%
15 – 19 years	75%	15 – 19 years	75%
20 or more years	100%	20 or more years	100%

The percentage paid by the retirement system is applied to the 'contribution' plan selected by the Board.

Duty Disability Retirement If disability was a result of injuries sustained while in the line of duty, the member receives 100% of the maximum contribution for the member and dependents. This benefit is provided to members in the Non-hazardous and Hazardous plans alike.

Duty Death in Service If an active employee's death was a result of injuries sustained while in the line of duty, the member's spouse and children receive a fully subsidized health insurance benefit. This benefit is provided to members in the Non-hazardous and Hazardous plans alike.

Non-Duty Death in Service If the surviving spouses is in receipt of a pension allowance, he or she is eligible for continued health coverage. The percentage of the premium paid for by the retirement system is based on the member's years of hazardous service at the time of death.

Surviving Spouse of a Retiree A surviving spouse of a retiree, who is in receipt of a pension allowance, will receive a premium subsidy based on the member's years of hazardous service.

Hazardous employees who retired prior to August 1, 1998 System's contribution for spouse and dependents is based on total service.

Insurance: Participation began on or after 7/1/2003

Benefit Eligibility	Recipient of a retirement allowance with at least 120 months of service at retirement (180 months if participation began on or after 9/1/2008)
Non-Hazardous Subsidy	Monthly contribution of $10 for each year of earned non-hazardous service. The monthly contribution is increased by 1.5% each July 1. As of July 1, 2023, the Non-Hazardous monthly contribution was $14.41/year of service. Upon the retiree's death, the surviving spouse may continue coverage (if in receipt of a retirement allowance) but will be 100% responsible for the premiums. Effective January 1, 2023, members will receive an additional dollar contribution of $5 for every year of non-hazardous service a member attains over 27 years. This additional dollar contribution does not increase by 1.5% annually and is only payable for non-Medicare retirees. Also, it is only payable when the applicable insurance fund is at least 90% funded on an actuarial value of asset basis as of the last actuarial valuation.
Hazardous Subsidy	Monthly contribution of $15 for each year of earned hazardous service. The monthly contribution is increased by 1.5% each July 1. As of July 1, 2023, the Hazardous monthly contribution was $21.62/year of service. Upon the retiree's death, the surviving spouse of a hazardous duty member will receive a monthly contribution of $10 ($14.41 as of July 1, 2023) for each year of hazardous service. Effective January 1, 2023, members will receive an additional dollar contribution of $5 for every year of hazardous service a Tier 1 member attains over 20 years and a Tier 2 member attains 25 years. This additional dollar contribution does not increase by 1.5% annually and is only payable for non-Medicare retirees. Also, it is only payable when the applicable insurance fund is at least 90% funded on an actuarial value of asset basis as of the last actuarial valuation.
Duty Disability Retirement	If disability was a result of injuries sustained while in the line of duty or was duty-related, the member receives a benefit based on at least 20 years of service. This benefit is provided to members in the Non-Hazardous and Hazardous plans alike. If the disability is deemed to be Total and Permanent, the insurance premium for the member, the member's spouse, and the member's dependent children shall also be paid in full by the System. For non-hazardous members to be eligible for this benefit, they must be working in a position that could be certified as a hazardous position.

Duty Death in Service

If an active employee's death was a result of injuries sustained while in the line of duty, the member's spouse and children receive a fully subsidized health insurance benefit. This benefit is provided to members in the Non-Hazardous and Hazardous plans alike.

Non-Duty Death in Service

If the surviving spouse is in receipt of a pension allowance, he or she is eligible for continued health coverage. The percentage of the premium paid for by the retirement system is based on the member's years of hazardous service at the time of death.

Monthly Health Plan Premiums – Effective January 1, 2024

		Non-Medicare Plan Options			
Plan Option	Single	Parent Plus	Couple	Family	Family X-Ref
LivingWell PPO	$949.04	$1,320.40	$1,981.62	$2,185.78	$1,126.28
LivingWell CDHP	930.76	1,269.28	1,866.24	2,078.08	1,068.66
LivingWell Basic	901.04	1,234.80	1,863.04	2,069.88	1,057.40

Medicare Plan Options	
Medical Only Plan	$188.73
Essential Mirror Plan	228.98
Premium Mirror Plan	328.11
Essential Medical Advantage Plan	4.07
Premium Medical Advantage Plan	93.35

Contribution plan selected by the Board was the LivingWell PPO plan option for non-Medicare retirees. Contribution plan selected by the Board was the Medical Only plan for the Medicare retirees.

Dollar Contribution Amount for Participation on or after 7/1/2003

Monthly contribution amounts per year of service as of July 1, 2023.

Non-Hazardous Service	Hazardous Service
$14.41	$21.62

Changes in Health Insurance Benefits Since the Prior Valuation

None.

APPENDIX C

GLOSSARY

Glossary

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: The portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period specified in State statute. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on a statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded

Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but may not decrease by exactly one year in the subsequent year's actuarial valuation. For instance, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

P: 469.524.0000 | www.grsconsulting.com

October 31, 2023

Board of Trustees
County Employees Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, KY 40601

Re: Sensitivity Analysis Based on Results of the June 30, 2023 Actuarial Valuation – CERS

Dear Members of the Board:

Per Kentucky State Statute 61.670, we are providing this supplemental information regarding the sensitivity of the valuation results to changes in some of the economic assumptions. Specifically, the enclosed tables show the impact for the **County Employees Retirement System (CERS)** due to changes in the investment return assumption, the inflation rate assumption, and the payroll growth rate assumption.

Background

Investment Assumption

The investment return assumption is used to discount future expected benefit payments to the valuation date in order to determine the liabilities of the plans. The lower the investment return assumption, the less the benefit payments are discounted and the higher the valuation liability. The current investment return assumption is 6.50% for the non-hazardous and hazardous retirement and insurance funds. The sensitivity analysis shows the financial impact of a 1.00% increase and a 1.00% decrease in the investment return assumption. For purposes of this sensitivity analysis, the inflation assumption and payroll growth assumption remain unchanged from the valuation assumption.

Inflation Assumption

The inflation assumption underlies most of the other economic assumptions, including the investment return, salary increases, and payroll growth rate. This is a macroeconomic assumption and as such the same assumption is used in the valuation of each of the retirement systems. The current assumption is 2.50% for all funds. The sensitivity analysis shows the financial impact of a 0.25% increase and a 0.25% decrease in the inflation assumption. Note, the change in the inflation assumption results in a corresponding change in the investment return assumption, the individual salary increase assumption for projecting members' benefit amounts, the payroll growth rate assumption, and the healthcare trend assumption that is used in the valuation of the health insurance funds.

5605 North MacArthur Boulevard | Suite 870 | Irving, Texas 75038-2631

Payroll Growth Assumption

Participating employers of CERS make contributions to the system as a percentage of covered payroll. Therefore, as payroll changes over time these amortization payments will also change. If actual covered payroll increases at a rate that is less than assumed, then the retirement system receives fewer contribution dollars than expected to finance the unfunded liability, which means the contribution rates in future years will be required to increase in order to finance the unfunded liability over the same time period. The current payroll growth assumption is 2.00% for all the CERS retirement and insurance funds. The analysis shows the impact of a 1.00% increase and a 1.00% decrease in the payroll growth assumption.

Please note that the payroll growth assumption does not impact the valuation liabilities, unfunded liability, or funded status of the system. Rather, this assumption only impacts the amortization rate for financing the existing unfunded actuarial accrued liability and the actuarially determined employer contribution. For purposes of this analysis, the investment return assumption and the inflation assumption are held at their current valuation assumptions.

Certification

The information provided in this letter compliments the information provided in the June 30, 2023 actuarial valuation report. Please refer to the June 30, 2023 actuarial valuation report for additional discussion of the actuarial valuation, including the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making. The purpose of this information is to provide stakeholders the financial sensitivity of the unfunded liability and contribution rates to changes in the inflation, assumed rate of return, and payroll growth assumption.

To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. White and Ms. Shaw are Enrolled Actuaries. All three of the undersigned are members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. In addition, all three are independent of KPPA and are experienced in performing valuations for large public retirement systems. This communication shall not be construed to provide tax advice, legal advice or investment advice.

Sincerely,

Gabriel, Roeder, Smith & Company

Daniel J. White, FSA, EA, MAAA
Senior Consultant

Janie Shaw, ASA, EA, MAAA
Consultant

Krysti Kiesel, ASA, MAAA
Senior Analyst and Actuary

Sensitivity Analysis - Discount Rate
Non-Hazardous Members
(Dollar amounts expressed in thousands)

(1)	Decrease Discount Rate (2)	Valuation Results (3)	Increase Discount Rate (4)
Payroll Growth Rate	2.00%	2.00%	2.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	5.50%	6.50%	7.50%
Discount Rate - Insurance	5.50%	6.50%	7.50%
Retirement			
Actuarial Accrued Liability	$ 17,022,120	$ 15,296,429	$ 13,861,471
Actuarial Value of Assets	8,571,379	8,571,379	8,571,379
Unfunded Actuarial Accrued Liability	8,450,741	6,725,050	5,290,092
Funded Ratio	50.4%	56.0%	61.8%
Actuarially Determined Contribution Rate	24.85%	19.75%	15.41%
Insurance			
Actuarial Accrued Liability	$ 2,864,445	$ 2,560,387	$ 2,306,018
Actuarial Value of Assets	3,364,385	3,364,385	3,364,385
Unfunded Actuarial Accrued Liability	(499,940)	(803,998)	(1,058,367)
Funded Ratio	117.5%	131.4%	145.9%
Actuarially Determined Contribution Rate	0.54%	0.00%	0.00%
Combined			
Actuarial Accrued Liability	$ 19,886,565	$ 17,856,816	$ 16,167,489
Actuarial Value of Assets	11,935,764	11,935,764	11,935,764
Unfunded Actuarial Accrued Liability	7,950,801	5,921,052	4,231,725
Funded Ratio	60.0%	66.8%	73.8%
Actuarially Determined Contribution Rate	25.39%	19.75%	15.41%

Sensitivity Analysis - Inflation Rate
Non-Hazardous Members
(Dollar amounts expressed in thousands)

(1)	Decrease Inflation Rate (2)	Valuation Results (3)	Increase Inflation Rate (4)
Payroll Growth Rate	1.75%	2.00%	2.25%
Inflation Rate	2.25%	2.50%	2.75%
Discount Rate - Retirement	6.25%	6.50%	6.75%
Discount Rate - Insurance	6.25%	6.50%	6.75%
Retirement			
Actuarial Accrued Liability	$ 15,659,842	$ 15,296,429	$ 14,950,069
Actuarial Value of Assets	8,571,379	8,571,379	8,571,379
Unfunded Actuarial Accrued Liability	7,088,463	6,725,050	6,378,690
Funded Ratio	54.7%	56.0%	57.3%
Actuarially Determined Contribution Rate	21.08%	19.75%	18.49%
Insurance			
Actuarial Accrued Liability	$ 2,599,603	$ 2,560,387	$ 2,523,466
Actuarial Value of Assets	3,364,385	3,364,385	3,364,385
Unfunded Actuarial Accrued Liability	(764,782)	(803,998)	(840,919)
Funded Ratio	129.4%	131.4%	133.3%
Actuarially Determined Contribution Rate	0.00%	0.00%	0.00%
Combined			
Actuarial Accrued Liability	$ 18,259,445	$ 17,856,816	$ 17,473,535
Actuarial Value of Assets	11,935,764	11,935,764	11,935,764
Unfunded Actuarial Accrued Liability	6,323,681	5,921,052	5,537,771
Funded Ratio	65.4%	66.8%	68.3%
Actuarially Determined Contribution Rate	21.08%	19.75%	18.49%

Sensitivity Analysis - Payroll Growth
Non-Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Payroll Growth	Valuation Results	Increase Payroll Growth
(1)	(2)	(3)	(4)
Payroll Growth Rate	1.00%	2.00%	3.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	6.50%	6.50%	6.50%
Discount Rate - Insurance	6.50%	6.50%	6.50%
Retirement			
Actuarial Accrued Liability	$ 15,296,429	$ 15,296,429	$ 15,296,429
Actuarial Value of Assets	8,571,379	8,571,379	8,571,379
Unfunded Actuarial Accrued Liability	6,725,050	6,725,050	6,725,050
Funded Ratio	56.0%	56.0%	56.0%
Actuarially Determined Contribution Rate	21.38%	19.75%	18.23%
Insurance			
Actuarial Accrued Liability	$ 2,560,387	$ 2,560,387	$ 2,560,387
Actuarial Value of Assets	3,364,385	3,364,385	3,364,385
Unfunded Actuarial Accrued Liability	(803,998)	(803,998)	(803,998)
Funded Ratio	131.4%	131.4%	131.4%
Actuarially Determined Contribution Rate	0.00%	0.00%	0.00%
Combined			
Actuarial Accrued Liability	$ 17,856,816	$ 17,856,816	$ 17,856,816
Actuarial Value of Assets	11,935,764	11,935,764	11,935,764
Unfunded Actuarial Accrued Liability	5,921,052	5,921,052	5,921,052
Funded Ratio	66.8%	66.8%	66.8%
Actuarially Determined Contribution Rate	21.38%	19.75%	18.23%

Sensitivity Analysis - Discount Rate
Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
(1)	(2)	(3)	(4)
Payroll Growth Rate	2.00%	2.00%	2.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	5.50%	6.50%	7.50%
Discount Rate - Insurance	5.50%	6.50%	7.50%
Retirement			
Actuarial Accrued Liability	$ 6,579,689	$ 5,849,995	$ 5,253,303
Actuarial Value of Assets	2,983,680	2,983,680	2,983,680
Unfunded Actuarial Accrued Liability	3,596,009	2,866,315	2,269,623
Funded Ratio	45.3%	51.0%	56.8%
Actuarially Determined Contribution Rate	46.37%	36.79%	28.81%
Insurance			
Actuarial Accrued Liability	$ 1,774,031	$ 1,604,146	$ 1,461,452
Actuarial Value of Assets	1,611,783	1,611,783	1,611,783
Unfunded Actuarial Accrued Liability	162,248	(7,637)	(150,331)
Funded Ratio	90.9%	100.5%	110.3%
Actuarially Determined Contribution Rate	5.14%	2.16%	0.00%
Combined			
Actuarial Accrued Liability	$ 8,353,720	$ 7,454,141	$ 6,714,755
Actuarial Value of Assets	4,595,463	4,595,463	4,595,463
Unfunded Actuarial Accrued Liability	3,758,257	2,858,678	2,119,292
Funded Ratio	55.0%	61.6%	68.4%
Actuarially Determined Contribution Rate	51.51%	38.95%	28.81%

Sensitivity Analysis - Inflation Rate
Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Inflation Rate	Valuation Results	Increase Inflation Rate
(1)	(2)	(3)	(4)
Payroll Growth Rate	1.75%	2.00%	2.25%
Inflation Rate	2.25%	2.50%	2.75%
Discount Rate - Retirement	6.25%	6.50%	6.75%
Discount Rate - Insurance	6.25%	6.50%	6.75%
Retirement			
Actuarial Accrued Liability	$ 6,002,944	$ 5,849,995	$ 5,704,087
Actuarial Value of Assets	2,983,680	2,983,680	2,983,680
Unfunded Actuarial Accrued Liability	3,019,264	2,866,315	2,720,407
Funded Ratio	49.7%	51.0%	52.3%
Actuarially Determined Contribution Rate	39.21%	36.79%	34.48%
Insurance			
Actuarial Accrued Liability	$ 1,619,882	$ 1,604,146	$ 1,589,305
Actuarial Value of Assets	1,611,783	1,611,783	1,611,783
Unfunded Actuarial Accrued Liability	8,099	(7,637)	(22,478)
Funded Ratio	99.5%	100.5%	101.4%
Actuarially Determined Contribution Rate	2.53%	2.16%	1.82%
Combined			
Actuarial Accrued Liability	$ 7,622,826	$ 7,454,141	$ 7,293,392
Actuarial Value of Assets	4,595,463	4,595,463	4,595,463
Unfunded Actuarial Accrued Liability	3,027,363	2,858,678	2,697,929
Funded Ratio	60.3%	61.6%	63.0%
Actuarially Determined Contribution Rate	41.74%	38.95%	36.30%

Sensitivity Analysis - Payroll Growth
Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Payroll Growth	Valuation Results	Increase Payroll Growth
(1)	(2)	(3)	(4)
Payroll Growth Rate	1.00%	2.00%	3.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	6.50%	6.50%	6.50%
Discount Rate - Insurance	6.50%	6.50%	6.50%
Retirement			
Actuarial Accrued Liability	$ 5,849,995	$ 5,849,995	$ 5,849,995
Actuarial Value of Assets	2,983,680	2,983,680	2,983,680
Unfunded Actuarial Accrued Liability	2,866,315	2,866,315	2,866,315
Funded Ratio	51.0%	51.0%	51.0%
Actuarially Determined Contribution Rate	39.76%	36.79%	34.02%
Insurance			
Actuarial Accrued Liability	$ 1,604,146	$ 1,604,146	$ 1,604,146
Actuarial Value of Assets	1,611,783	1,611,783	1,611,783
Unfunded Actuarial Accrued Liability	(7,637)	(7,637)	(7,637)
Funded Ratio	100.5%	100.5%	100.5%
Actuarially Determined Contribution Rate	2.19%	2.16%	2.15%
Combined			
Actuarial Accrued Liability	$ 7,454,141	$ 7,454,141	$ 7,454,141
Actuarial Value of Assets	4,595,463	4,595,463	4,595,463
Unfunded Actuarial Accrued Liability	2,858,678	2,858,678	2,858,678
Funded Ratio	61.6%	61.6%	61.6%
Actuarially Determined Contribution Rate	41.95%	38.95%	36.17%

Kentucky Public Pensions Authority
CERS Non-Hazardous Retirement Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 15,296	$ 8,571	$ 6,725	56%	$ 677	$ 145	$ 2,899	23.34%	23.34%
2024	15,612	9,041	6,571	58%	584	148	2,957	19.75%	19.75%
2025	15,904	9,479	6,425	60%	585	151	3,016	19.40%	19.40%
2026	16,178	9,636	6,542	60%	582	154	3,076	18.91%	18.91%
2027	16,434	9,979	6,455	61%	602	157	3,138	19.19%	19.19%
2028	16,672	10,265	6,407	62%	605	160	3,201	18.89%	18.89%
2029	16,893	10,541	6,352	62%	613	163	3,265	18.79%	18.79%
2030	17,100	10,814	6,286	63%	622	166	3,330	18.69%	18.69%
2031	17,296	11,089	6,207	64%	632	170	3,396	18.62%	18.62%
2032	17,483	11,371	6,112	65%	642	173	3,464	18.54%	18.54%
2033	17,664	11,662	6,002	66%	653	177	3,534	18.49%	18.49%
2034	17,854	11,979	5,875	67%	664	180	3,604	18.43%	18.43%
2035	18,043	12,312	5,731	68%	676	184	3,676	18.38%	18.38%
2036	18,234	12,667	5,567	70%	688	187	3,750	18.35%	18.35%
2037	18,432	13,051	5,381	71%	701	191	3,825	18.32%	18.32%
2038	18,644	13,471	5,173	72%	713	195	3,901	18.28%	18.28%
2039	18,874	13,933	4,941	74%	727	199	3,979	18.26%	18.26%
2040	19,124	14,442	4,682	76%	733	203	4,059	18.06%	18.06%
2041	19,399	14,997	4,402	77%	783	207	4,140	18.90%	18.90%
2042	19,700	15,644	4,056	79%	761	211	4,223	18.02%	18.02%
2043	20,031	16,317	3,714	82%	877	215	4,307	20.36%	20.36%
2044	20,393	17,160	3,233	84%	901	220	4,394	20.51%	20.51%
2045	20,787	18,089	2,698	87%	935	224	4,482	20.86%	20.86%
2046	21,215	19,117	2,098	90%	936	229	4,571	20.47%	20.47%
2047	21,678	20,218	1,460	93%	963	233	4,663	20.65%	20.65%
2048	22,179	21,421	758	97%	982	238	4,756	20.64%	20.64%
2049	22,718	22,718	-	100%	196	243	4,851	4.04%	4.04%
2050	23,296	23,296	-	100%	200	247	4,948	4.04%	4.04%
2051	23,915	23,915	-	100%	204	252	5,047	4.05%	4.05%
2052	24,574	24,574	-	100%	208	257	5,148	4.04%	4.04%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.
New active members are assumed to be hired as current active members are assumed to terminate employment or retire.
The total active population is assumed to remain level throughout the entire projection.
Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
CERS Hazardous Retirement Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 5,850	$ 2,984	$ 2,866	51%	$ 279	$ 54	$ 678	41.11%	41.11%
2024	6,017	3,200	2,817	53%	254	55	692	36.79%	36.79%
2025	6,177	3,413	2,764	55%	256	56	705	36.23%	36.23%
2026	6,331	3,534	2,797	56%	255	58	719	35.46%	35.46%
2027	6,481	3,722	2,759	57%	263	59	734	35.77%	35.77%
2028	6,627	3,894	2,733	59%	264	60	749	35.25%	35.25%
2029	6,772	4,068	2,704	60%	267	61	764	35.02%	35.02%
2030	6,917	4,248	2,669	61%	271	62	779	34.83%	34.83%
2031	7,065	4,438	2,627	63%	275	64	794	34.67%	34.67%
2032	7,219	4,639	2,580	64%	280	65	810	34.54%	34.54%
2033	7,380	4,855	2,525	66%	284	66	826	34.42%	34.42%
2034	7,550	5,088	2,462	67%	289	67	843	34.32%	34.32%
2035	7,727	5,337	2,390	69%	294	69	860	34.23%	34.23%
2036	7,912	5,602	2,310	71%	299	70	877	34.13%	34.13%
2037	8,101	5,882	2,219	73%	305	72	895	34.04%	34.04%
2038	8,295	6,177	2,118	75%	310	73	912	33.94%	33.94%
2039	8,490	6,485	2,005	76%	315	74	931	33.83%	33.83%
2040	8,689	6,808	1,881	78%	308	76	949	32.40%	32.40%
2041	8,892	7,136	1,756	80%	315	77	968	32.52%	32.52%
2042	9,102	7,485	1,617	82%	318	79	988	32.21%	32.21%
2043	9,320	7,854	1,466	84%	349	81	1,007	34.66%	34.66%
2044	9,545	8,270	1,275	87%	358	82	1,028	34.85%	34.85%
2045	9,775	8,712	1,063	89%	370	84	1,048	35.33%	35.33%
2046	10,010	9,183	827	92%	372	86	1,069	34.77%	34.77%
2047	10,250	9,676	574	94%	382	87	1,091	35.03%	35.03%
2048	10,496	10,199	297	97%	390	89	1,112	35.04%	35.04%
2049	10,748	10,748	-	100%	79	91	1,135	6.95%	6.95%
2050	11,006	11,006	-	100%	81	93	1,157	6.96%	6.96%
2051	11,272	11,272	-	100%	82	94	1,180	6.97%	6.97%
2052	11,544	11,544	-	100%	84	96	1,204	6.98%	6.98%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
CERS Non-Hazardous Insurance Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 2,560	$ 3,364	$ (804)	131%	$ -	$ 18	$ 2,868	0.00%	0.00%
2024	2,658	3,479	(821)	131%	-	20	2,926	0.00%	0.00%
2025	2,748	3,619	(871)	132%	-	21	2,984	0.00%	0.00%
2026	2,832	3,659	(827)	129%	-	22	3,044	0.00%	0.00%
2027	2,908	3,772	(864)	130%	-	24	3,105	0.00%	0.00%
2028	2,978	3,856	(878)	130%	-	25	3,167	0.00%	0.00%
2029	3,040	3,937	(897)	130%	-	27	3,230	0.00%	0.00%
2030	3,097	4,016	(919)	130%	-	28	3,295	0.00%	0.00%
2031	3,149	4,093	(944)	130%	-	30	3,361	0.00%	0.00%
2032	3,198	4,171	(973)	130%	-	31	3,428	0.00%	0.00%
2033	3,245	4,251	(1,006)	131%	-	32	3,496	0.00%	0.00%
2034	3,293	4,334	(1,041)	132%	-	33	3,566	0.00%	0.00%
2035	3,344	4,425	(1,081)	132%	-	35	3,638	0.00%	0.00%
2036	3,400	4,523	(1,123)	133%	-	36	3,710	0.00%	0.00%
2037	3,463	4,632	(1,169)	134%	-	37	3,785	0.00%	0.00%
2038	3,532	4,750	(1,218)	135%	-	38	3,860	0.00%	0.00%
2039	3,608	4,878	(1,270)	135%	-	39	3,937	0.00%	0.00%
2040	3,691	5,017	(1,326)	136%	-	40	4,016	0.00%	0.00%
2041	3,781	5,167	(1,386)	137%	-	41	4,097	0.00%	0.00%
2042	3,877	5,328	(1,451)	137%	-	41	4,178	0.00%	0.00%
2043	3,981	5,500	(1,519)	138%	-	42	4,262	0.00%	0.00%
2044	4,092	5,684	(1,592)	139%	-	43	4,347	0.00%	0.00%
2045	4,208	5,877	(1,669)	140%	-	44	4,434	0.00%	0.00%
2046	4,329	6,081	(1,752)	141%	-	45	4,523	0.00%	0.00%
2047	4,454	6,295	(1,841)	141%	-	46	4,613	0.00%	0.00%
2048	4,582	6,518	(1,936)	142%	-	47	4,706	0.00%	0.00%
2049	4,713	6,749	(2,036)	143%	-	48	4,800	0.00%	0.00%
2050	4,845	6,988	(2,143)	144%	-	49	4,896	0.00%	0.00%
2051	4,979	7,237	(2,258)	145%	-	50	4,994	0.00%	0.00%
2052	5,114	7,493	(2,379)	147%	-	51	5,093	0.00%	0.00%

<u>Notes and assumptions:</u>

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
CERS Hazardous Insurance Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 1,604	$ 1,612	$ (8)	101%	$ 17	$ 4	$ 674	2.58%	2.58%
2024	1,628	1,641	(13)	101%	15	5	687	2.16%	2.16%
2025	1,640	1,674	(34)	102%	12	5	701	1.71%	1.71%
2026	1,645	1,649	(4)	100%	8	5	715	1.13%	1.13%
2027	1,642	1,649	(7)	100%	9	6	729	1.17%	1.17%
2028	1,635	1,634	1	100%	6	6	744	0.83%	0.83%
2029	1,626	1,616	10	99%	5	7	759	0.66%	0.66%
2030	1,613	1,592	21	99%	4	7	774	0.53%	0.53%
2031	1,597	1,565	32	98%	3	7	789	0.42%	0.42%
2032	1,579	1,534	45	97%	3	8	805	0.33%	0.33%
2033	1,560	1,501	59	96%	2	8	821	0.26%	0.26%
2034	1,542	1,467	75	95%	2	8	838	0.20%	0.20%
2035	1,525	1,434	91	94%	1	8	855	0.16%	0.16%
2036	1,512	1,402	110	93%	1	9	872	0.12%	0.12%
2037	1,503	1,374	129	91%	1	9	889	0.09%	0.09%
2038	1,499	1,349	150	90%	1	9	907	0.06%	0.06%
2039	1,500	1,327	173	89%	-	9	925	0.04%	0.04%
2040	1,507	1,309	198	87%	5	9	943	0.57%	0.57%
2041	1,519	1,299	220	86%	18	10	962	1.85%	1.85%
2042	1,535	1,306	229	85%	52	10	982	5.34%	5.34%
2043	1,557	1,354	203	87%	51	10	1,001	5.05%	5.05%
2044	1,585	1,406	179	89%	53	10	1,021	5.16%	5.16%
2045	1,616	1,466	150	91%	57	10	1,042	5.45%	5.45%
2046	1,648	1,533	115	93%	55	11	1,062	5.15%	5.15%
2047	1,683	1,603	80	95%	57	11	1,084	5.27%	5.27%
2048	1,719	1,679	40	98%	58	11	1,105	5.25%	5.25%
2049	1,756	1,756	-	100%	13	11	1,128	1.18%	1.18%
2050	1,793	1,793	-	100%	13	12	1,150	1.16%	1.16%
2051	1,830	1,830	-	100%	13	12	1,173	1.14%	1.14%
2052	1,867	1,867	-	100%	13	12	1,197	1.12%	1.12%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Pendergrass, Betty (KPPA)

From:	Danny.White@grsconsulting.com
Sent:	Monday, October 23, 2023 2:55 PM
To:	Chilton, John (KPPA)
Cc:	Janie.Shaw@grsconsulting.com; Danny.White@grsconsulting.com; Eager, David (KPPA); Krysti.Kiesel@grsconsulting.com
Subject:	[External] RE: Annuity rates

John,

In response to your questions as we understand them:

The Tier 3 annuity conversation factor is relatively more sensitive to the interest rate used in the calculation of the factor because this factor is used to convert a member's account balance to a lifetime annuity at the member's retirement date. The interest rate is the implicit underlying assumed future investment return on the member's account balance. However, the interest rate used in the annuity conversion factor does not have to be the same as interest rate used in the valuation as the Board may want to use a different assumption to reflect certain factors that include equitably, risk, and subsidy. Note, the actuarial valuation for KRS will reflect the conversion factors adopted by the KRS Board, so any difference in the valuation interest rate and the Tier 3 annuity conversion rate (if any) will be incorporated in the calculation of the liability and contribution rates.

The factors for converting forms of payment in Tier 1, Tier 2, and Tier 3 to include survivor benefits (e.g. the Joint & 50% Survivor and Joint & 100% Survivor) also have an interest rate component, but these factors are less sensitive to the interest rate because it is already comparing the relative value of two annuities (i.e. the basic form and one with a survivor benefit). Rather the purpose of these factors is to reflect the differences in life expectancy between the retiree and the beneficiary and keep the overall value of the benefit provided cost netural.

In summary, our two part recommendation to the KRS and CERS Boards are as follows:

1) **Primary: The Boards adopt the same conversion factors for benefit administration of the KRS and CERS systems. These two systems provide identical benefits. Identical demographic members should receive the same benefit (including optional forms of payment) regarding of the system they are receiving their benefit.**
2) **Secondary: While we believe the continued use of a 5.25% interest assumption provides consistency and some risk mitigation, the use of a different interest rate could also be reasonable and appropriate.**

We are available for a conference call if you wish to further discuss.

Danny and Janie.

From: Chilton, John (KPPA) <John.Chilton@kyret.ky.gov>
Sent: Monday, October 23, 2023 8:59 AM
To: White, Danny (DAP1) <Danny.White@grsconsulting.com>; Shaw, Janie (DAP1) <Janie.Shaw@grsconsulting.com>
Subject: Annuity rates

COMPARISON OF INVESTMENT RETURNS
CERS, KERS, AND SPRS
2014 - 2023
Source: Summary Annual Financial Reports

	ONE-YEAR RETURNS					SINCE INCEPTION RETURNS				
	CERS		KERS			CERS		KERS		
Year	NonHaz	Haz	NonHaz	Haz	SPRS	NonHaz	Haz	NonHaz	Haz	SPRS
2023 *	10.24	10.33	6.96	9.46	7.58	8.85	8.85	8.69	8.82	8.68
2022	(5.90)	(6.10)	(5.20)	(6.00)	(4.60)	8.80	8.80	8.70	8.80	8.70
2021	25.70	25.60	22.60	25.20	21.70	9.20	9.20	9.10	9.20	9.10
2020	0.84	0.71	2.36	0.95	2.21	8.82	8.82	8.79	8.82	8.76
2019	5.78	5.80	5.73	5.68	5.71	9.05	9.06	8.98	9.05	8.96
2018	8.75	8.77	7.50	8.68	7.65	9.15	9.15	9.07	9.15	9.05
2017	13.81	13.73	12.09	13.44	12.50	9.16	9.17	9.12	9.14	9.09
2016	(0.53)	(0.38)	(0.68)	(0.53)	(1.49)	9.02	9.03	9.03	9.02	8.99
2015	1.92	1.96	2.38	1.87	1.87	9.34	9.34	9.36	9.34	9.35
2014	15.56	15.50	1,549.00	15.65	15.64	9.62	9.61	9.61	9.62	9.62

* June Monthly Investment Report

Kentucky Public Pension Authority
Comparison of Certain Actuarial Factors at Select Ages

Tier 3 Cash Balance Factors

Age at Retirement	**55**	**60**	**65**
Cash Balance	$ 200,000	$ 200,000	$ 200,000
Factor - 5.25%	178.490678	165.241883	149.664564
Benefit - 5.25%	**$ 1,121**	**$ 1,210**	**$ 1,336**
Factor - 5.875%	166.867684	155.457923	141.769442
Benefit - 5.875%	**$ 1,199**	**$ 1,287**	**$ 1,411**
Impact of 5.875% Discount Rate	7.0%	6.3%	5.6%
Factor - 6.0837%	163.274909	152.410995	139.291666
Benefit - 6.0837%	**1,225**	**1,312**	**1,436**
Impact of 6.0837% Discount Rate	9.3%	8.4%	7.4%
Factor - 6.50%	156.499208	146.634450	134.568271
Benefit - 6.50%%	**1,278**	**1,364**	**1,486**
Impact of 6.50% Discount Rate	14.1%	12.7%	11.2%

Service Purchase Factors

Current Age	**50**	**50**	**50**
Age at Retirement	**55**	**60**	**65**
Factor - 5.25%	13.417217	11.123715	8.931681
Factor - 5.875%	12.177624	9.863463	7.741535
Impact of 5.875% Discount Rate	**-9.2%**	**-11.3%**	**-13.3%**
Factor - 6.0837%	11.798685	9.481575	7.384839
Impact of 6.0837% Discount Rate	**-12.1%**	**-14.8%**	**-17.3%**
Factor - 6.50%	11.089745	8.771840	6.727355
Impact of 6.50% Discount Rate	**-17.3%**	**-21.1%**	**-24.7%**

Survivor 100% Factor

Retiree Age	**50**	**55**	**65**
Beneficiary Age	**50**	**55**	**65**
Monthly Benefit	$ 2,000	$ 2,000	$ 2,000
Factor - 5.25%	0.932081	0.916613	0.880236
Benefit - 5.25%	**$ 1,864**	**$ 1,833**	**$ 1,760**
Factor - 5.875%	0.937340	0.921938	0.885282
Benefit - 5.875%	**$ 1,875**	**$ 1,844**	**$ 1,771**
Impact of 5.875% Discount Rate	0.6%	0.6%	0.6%
Factor - 6.0837%	0.938998	0.923634	0.886916
Benefit - 6.0837%	**$ 1,878**	**$ 1,847**	**$ 1,774**
Impact of 6.0837% Discount Rate	0.7%	0.8%	0.8%
Factor - 6.50%	0.942162	0.926896	0.890101
Benefit - 6.50%%	**$ 1,884**	**$ 1,854**	**$ 1,780**
Impact of 6.50% Discount Rate	1.1%	1.1%	1.1%

Notes regarding the factors:
The factors are based on mortality assumption adopted by KRS and CERS Boards in 2023.
5.25% is based on the interest rate assumption used for the valuation of the KERS-NH pension fund.
5.875% is an interest rate assumption in between that used by the KERS-NH and CERS NH pension funds.
6.0837% an interest rate assumption that is approximately membership weighted between that used by the KERS-NH and CERS NH pension funds.
6.50% is based on the interest rate assumption used for the valuation of the CERS-NH pension fund.

KENTUCKY PUBLIC PENSIONS AUTHORITY
David L. Eager, Executive Director
1260 Louisville Road • Frankfort, Kentucky 40601
kyret.ky.gov • Phone: 502-696-8800 • Fax: 502-696-8822

Kentucky Public Pensions Authority

TO: Members of the CERS Board of Trustees

FROM: Joint CERS & KRS Retiree Health Plan Committee

DATE: November 8, 2023

SUBJECT: Joint CERS & KRS Retiree Health Plan Committee Report

The Joint CERS & KRS Retiree Health Plan Committee met on Monday, October 23, 2023 and reviewed an informational presentation from Humana regarding 2024 Pharmacy Review, Pharmacogenomics, and Medication Therapy Management (MTM).

2024 Formulary changes:

- Prior authorization changes impact 577 (1.0%) members.
- Negative tier changes impact 779 (1.3%) members.
- Positive tier changes impact 766 (1.2%) members.
- Step therapy changes impact 152 (0.2%) members.

The Committee also reviewed the Pharmacogenomics, what Medicare covers and does not cover, as well as general information on a Humana Medicare Advantage Pilot to evaluate the value of genetic testing to guide therapy decisions. The pilot will evaluate the impact on longer term outcomes such as medication adherence, hospital admissions, readmissions, and cost of care. The results will be evaluated in Q4 of 2023 to determine if outcomes and return on investment support a larger rollout.

Humana's MTM is a federally mandated program created by Medicare. It is designed to optimize medication therapy to promote medication safety, effectiveness, and cost savings, enabling members to achieve their best health. This program is offered to retirees with 3 of 5 Chronic Conditions, those likely to incur annual Part D medication costs of $5,330, and who are taking 8 or more chronic maintenance drugs. A Pharmacist provides comprehensive medication review with the retiree and provides a written summary for the retiree's physician. In 2022, KPPA had 77.2% participation and in 2023 there is 67.9% participation. This is similar to two (2) Peer Groups who perform at 71.4% in 2023 and 69.4% in 2023.

The Division of Retiree Health Care (RHC) has conducted several member outreach engagements for the Non-Medicare Open Enrollment (OE). Emails were delivered to 22,715 individuals. Additionally, RHC staff has answered 2,933 phone calls and responded to 89 emails through October 15, 2023, as well as, seeing scheduled in-person visitors and virtual appointments. Online Enrollments have decreased in 2023 with 1,282 vs. 1,663 in 2022. OE is not mandatory, therefore, members only need to submit an application if they want to change their coverage for 2024. Webinars have continued to be a successful form of communication with members. Webinars have been provided to the individuals on the Kentucky Employee Health Plan (KEHP) plans and will be provided to retirees enrolled in the Humana Medicare plans during the last week of October and November. RHC is attending Retiree meetings at numerous locations throughout the state during October and November in partnership with Humana.

COUNTY EMPLOYEES' RETIREMENT SYSTEM
BOARD OF TRUSTEES
STATEMENT OF BYLAWS AND COMMITTEE ORGANIZATION

[Revised: ~~September~~ November~~14, 2022~~8, 2023]

Section 1.1 GENERAL ADMINISTRATION.

This Statement of Bylaws and Committee Organization of the Board of Trustees of the County Employees Retirement System (CERS) is adopted pursuant to the authority of KRS 78.782(2). State and Federal law shall control any inconsistency that exists or may exist between the law and this Statement of Bylaws and Committee Organization.

a. Definitions.
   1. AAC: "AAC" refers to the Joint CERS and Kentucky Retirement Systems Administrative Appeals Committee.
   2. Board: "The CERS Board" refers to the CERS Board of Trustees of the County Employees Retirement System.
   3. Board Year: The CERS Board Year shall be from April 1 of each calendar year through March 31 of the following year.
   4. Bylaws: "Bylaws" refers to the Statement of Bylaws and Committee Organization.
   5. CEO: "CEO" refers to CERS Chief Executive Officer, as outlined in KRS 78.782(9) & (10).
   6. CIO: "CIO" refers to KPPA Executive Director Office of Investments.
   7. DAC: "DAC" refers to the Joint CERS and Kentucky Retirement Systems Disability Appeals Committee.
   8. KPPA: "KPPA" refers to the Kentucky Public Pensions Authority.
   9. KRS: "KRS" refers to the Kentucky Revised Statutes.
   10. Committee member: "Committee member" or "member" used in relation to a Committee refers to a member of the CERS Board of Trustees of the County Employee Retirement System serving on its Standing or ad hoc Committees.
   11. Member: "Member" or "members" used in relation to individuals participating in a system (or System) administered by the Kentucky Public Pensions Authority refers to individuals who are active members (i.e., currently participating as an employee), inactive members (i.e., formerly participated as an employee, but is not currently participating as an employee, has not retired, and has not taken a refund), or retired.
   12. Retirement Office: "Retirement Office" refers to the offices of the KPPA located at 1260 Louisville Road, Frankfort, Kentucky 40601.
   13. Take action on: "Take action on" used in relation to the Board refers a motion being made, seconded, and voted upon by the Board in compliance with Robert's Rules of Order. [RONR (11th ed., as amended)].
   14. Trustee: "Trustee" refers to a member of the Board of Trustees of the County Employees Retirement System.

b. Quorum; Parliamentary Authority.
   1. CERS Board of Trustees: As required by KRS 78.782(8)(c), a majority of the trustees shall constitute a quorum and all actions taken by the CERS Board shall be by affirmative vote of a majority of the trustees present.
   2. Committees of the CERS Board of Trustees: A majority of the trustees on any Committee of the Board appointed pursuant to Sections 2.1-2.5 of these Bylaws shall constitute a quorum of

the Committee and all actions taken by the Committee shall be by affirmative vote of a majority of the Committee trustees present.

3. The most recent edition of Robert's Rules of Order shall be the parliamentary authority. [RONR (11th ed., as amended)], except that if any Committee of the Board is comprised of five (5) or more trustees, the Committee shall not constitute a quorum of the Board and the Board shall be required to action on all preliminary decision made by the Committee, unless otherwise specified by these Bylaws.

c. Meetings. Meetings of the CERS Board and its Committees shall be conducted consistent with the Open Meetings Act, KRS 61.805 to 61.850. The Open Meetings Act shall control if any inconsistency exists between the Open Meetings Act and these Bylaws.

d. Annual Meeting. The annual meeting of the CERS Board shall be held on the third Wednesday of April of each Board Year.

e. Regular Meetings. Regular meetings of the Board shall be held on the third Wednesday of March, April, June, and September, the first Wednesday of November, and the 1st Monday of December at times selected by the Board Chair. ~~in the third month of each calendar year quarter. The CERS Board shall adopt the official Regular Meeting calendar no later than December 31 of the previous year.~~

~~e.~~f. Trustee Training. In addition to the regular Board of Trustees meetings, the Board Chair may schedule Trustee Training sessions for the third Wednesday of January, July, and October.

~~f.~~g. Special Meetings.

1. Special meetings of the Board shall be held upon the call of the Chair of the CERS Board or the CERS CEO.
2. Special meetings of a Standing or ad hoc Committee of the CERS Board of Trustees shall be held upon the call of the CERS Committee Chair or the CERS CEO.
3. A trustee may request that the CERS CEO, Chair of the CERS Board (in the case of a special meeting of the CERS Board), or CERS Committee Chair (in the case of a special meeting of a Committee) call a special meeting by email or other written means. Upon receipt of email or other written requests to call a special meeting from a majority of the trustees, the CERS CEO, CERS Board Chair, or CERS Committee Chair shall call the requested special meeting.

g. Notice of Meetings.

1. Regular Meetings. Notice of a regular meeting of the CERS Board shall be posted at least seven (7) days (inclusive of weekends and holidays) before the meeting is scheduled. The notice of a regular meeting shall include the date, time, and location of the meeting, and the agenda for the meeting. The agenda shall be determined under the direction of and approval by the Chair of the CERS Board. Changes or revisions to the agenda may be proposed by the CERS CEO or a trustee; provided such proposal shall be delivered to the CERS Chair for approval not less than ninety-six (96) hours before the meeting is scheduled; and further provided that nothing in this sentence shall deprive a trustee from introducing new items of business during a regular meeting. Approved changes or revisions to the agenda shall be posted not less than seventy-two (72) hours before the meeting is scheduled.
2. Special Meetings. When circumstances warrant a special meeting of the CERS Board or of a Committee, notice shall be posted as soon as reasonably possible, but not less than twenty-four (24) hours before the meeting is scheduled. The notice of a special meeting shall include the date, time, and location of the special meeting and the agenda for the meeting. Discussions and action at the meeting shall be limited to items listed on the agenda in the notice.

h. Change in Meeting Dates. Any regular or special meeting of the CERS Board may be changed by following the procedure prescribed in these Bylaws for calling special meetings.

i. Records of Proceedings. All official acts of the CERS Board shall be recorded in the minutes of the regular or special meeting at which the action was approved or adopted. The CERS CEO shall cause the minutes to be transcribed and presented for approval or amendment at the next regular or special meeting. An electronic copy (certified by the Chair of the CERS Board and CERS CEO) shall be on file in the Retirement Office for public inspection and posted to the KPPA website hosted for CERS. Electronic copies are maintained on the KPPA Website for Board and Committee actions. Copies that have been archived from the website are available on request.

j. Chair and Vice-Chair of the CERS Board. The CERS Board shall elect a Chair and a Vice-Chair at each annual meeting to hold office for the ensuing CERS Board Year or until their successors are elected. The CERS Chair shall not serve more than four (4) consecutive years as Chair or Vice-Chair of the CERS Board. The CERS Vice-Chair shall not serve more than four (4) consecutive years as Chair or Vice-Chair of the CERS Board. A trustee who has served four (4) consecutive years as Chair or Vice-Chair of the CERS Board may be elected Chair or Vice-Chair of the CERS Board after an absence of two (2) years from both positions.

k. CERS Committees. The CERS Board may create CERS Committees with such powers and duties as established by the CERS Board. The Chair of the CERS Board, unless otherwise stipulated or determined by the CERS Board, shall appoint the members of each CERS Standing or CERS Ad Hoc Committee, and such appointments shall be recorded in the minutes of the current or next-following regular or special CERS Board meeting. CERS Committee members shall serve concurrently with the appointing Chair.

l. Conflicts of Interest.

1. CERS Trustees shall file a statement of financial disclosure with the Executive Branch Ethics Commission within thirty (30) days of taking office.
2. CERS Trustees shall also file a statement of financial disclosure by April 15 of each calendar year, and within thirty (30) days following departure from office as a CERS Trustee, or as otherwise provided by law.
3. CERS Trustees shall also file a written conflict of interest statement as required pursuant to the County Employees Retirement System' Conflict of Interest.

m. Confidentiality. CERS Trustees shall file a written confidentiality statement as required by the CERS Confidentiality Policy.

n. Travel Policy Guidelines.

1. All travel for official business of the County Employees Retirement System must be done in accordance with the requirements of and be consistent with KRS Chapter 45A and the County Employees Retirement System Board of Trustees Per Diem and Reimbursement Policy.
2. No more than four (4) CERS Trustees may be passengers in the same common carrier. A Maximum of one (1) executive staff of the County Employees Retirement System may be passengers in the same common carrier.
3. To avoid an accidental violation of Kentucky Open Meetings Laws, other than for CERS scheduled meetings, no more than four (4) CERS Trustees may attend the same off-site conference, training, etc., at the same time. The CERS CEO shall review Trustee travel requests to coordinate attendance and avoid noncompliance with Kentucky Open Meetings Laws.

n. Election Policy Guidelines. All elections for elected trustees of the CERS Board must be conducted in accordance with the provisions of KRS 78.782(4), 105 KAR 1:445 and the County Employees Retirement System Board of Trustees Election Policy and Procedures adopted by the CERS Board.

o. Violations of Board Policies and Guidelines. If a complaint is made that a CERS Trustee violated these Bylaws or any policy approved by the CERS Board, the CERS Board shall follow the procedure found in the CERS Conflict of Interest or the CERS Confidentiality Policy in investigating the complaint.

Section 1.2 CERS BOARD RESPONSIBILITIES.

a. The CERS Board shall make and maintain Bylaws.
b. The CERS Board shall appoint a CEO and fix the CERS CEO's compensation.
c. The CERS Board shall appoint a General Counsel and fix the CERS General Counsel's compensation.
d. The CERS Board shall adopt a Personnel Management policy to outline the job descriptions, qualifications, education, and skills for both the CEO and the General Counsel. This policy should also describe recruitment strategies, performance evaluations, and succession planning for these two positions.
e. The CERS Board may act on contracts for rental of office space, and professional services, including, but not limited to, the auditor, legal counsel, in accordance with the requirements of the Commonwealth of Kentucky Model Procurement Act (KRS Chapter 45A).
f. The CERS Board shall consider and take action on changes to administrative regulations proposed by the staff of the CERS and KPPA.
g. The CERS Board shall take action on the audited financial statements.
h. The CERS Board shall consider and take action on the recommendations of all of its Committees, except that:
   1. AAC and DAC shall have the authority to act upon the recommendations and reports of the hearing officer on behalf of the CERS Board in accordance with KRS Chapter 13B, and
   2. Pursuant to KRS 78.790(1)(b)(2), The CERS Board's Investment Committee shall have the authority to act on behalf of the CERS Board on all investment-related matters, though the CERS Board shall be kept informed of all such matters and shall be responsible for providing oversight on all investment-related matters in compliance with the fiduciary responsibilities of the CERS Board, state and federal law, and the CERS Board's Bylaws and Policies. All investment policies shall be adopted by the CERS Board and the CERS Investment Committee shall implement those policies.
i. The CERS Board shall work with an actuary, who shall be a Fellow of the Conference of Consulting Actuaries or a member of the American Academy of Actuaries. KPPA will select and contract with the actuary pursuant to KRS 78.782(2) which allows the Board to carry out its obligations in accordance with KRS 78.784. The Board shall consider and take action on the recommendations of its actuary, including, but not limited to, determining the recommended contribution rates for employers in accordance with KRS 78.510 to 78.852.
j. The CERS Board shall adopt contribution rates toward medical insurance premiums.
k. The CERS Board shall provide oversight concerning programs and services for County Employees Retirement System members, beneficiaries, recipients, and participating employers.
l. Legislative Issues. The Board will review and recommend statutory changes to the General Assembly related to the administration of benefits and compliance with federal law and determine which changes are in the best interests of the CERS plans. The Board will also review legislation proposed by the General Assembly that is likely to have significant impact on the funded status, existing member benefits, or system administration for any of the CERS plans.
m. The CERS Board shall select candidates for each trustee ballot as provided in KRS 78.782(4), and 105 KAR 1:445.

n. The CERS Board. shall establish a formal trustee education program for all trustees of the CERS Board, pursuant to the requirements of KRS 78.782(17) and 105 KAR 1:440, and ensure that CEO organizes process for this trustee education to occur.
o. The CERS Board shall collaborate with KPPA on Business Continuity and Disaster Recovery to ensure that CERS records and operations are adequately protected and that critical business operations will continue efficiently. The CERS Board may rely on policies and procedures developed by KPPA to address Business Continuity and Disaster Recovery issues. The CERS Board Chair shall act as temporary CERS CEO in the event the CERS CEO is not available to perform duties outlined in these Bylaws.
p. The CERS Board, and individual trustees, should ordinarily refer all news media inquiries to the CERS CEO and/or the CERS Board Chair, and should not speak on behalf of the CERS Board or County Employees Retirement System with the news media. However, nothing in· this subsection is intended to prevent individual trustees from speaking to the media concerning their actions, opinions, and decisions as individual Trustees, The Board designates the Executive Director of the KPPA, or his designee as the custodian of records for the CERS.

Section 1.3 CHIEF EXECUTIVE OFFICER RESPONSIBILITIES.

a. The CERS CEO shall ensure that all Board and/or Committee meeting materials are distributed to Trustees at least one week in advance of the meeting to allow Trustees ample time to review documents. The CERS CEO will collaborate with the KPPA Executive Director to identify materials that will be relevant to Board or Committee discussions and assist with compilation of those materials for distribution.
b. The CERS CEO shall develop a biennial budget and necessary budget amendments for approval by CERS Board. The CERS CEO will coordinate approved budget requests with the KPPA Executive Director to ensure that CERS budget requests are integrated with the KPPA budget request for submission to the Governor's office. The CERS CEO (or designee) shall present a budget-to-actual expenditure analysis to the CERS Board at each regular quarterly meeting of the CERS Board.
c. The CERS CEO shall be responsible for working with the KPPA Executive Director to ensuring compliance with meeting notice and open records legal and regulatory requirements. The CERS CEO shall also be responsible (in collaboration with KPPA staff) for compiling all relevant materials for consideration by the CERS Board or its Committees and strive to distribute materials to Trustees at least one week prior to the Board or Committee meeting. All materials must be distributed to Trustees in a timely fashion to ensure adequate time for Trustees to review and analyze information prior to the Board or Committee meeting.
d. The CERS CEO shall coordinate with KPPA staff to ensure that information and record management is comprehensive and efficient, and shall ensure that a disaster recovery plan, continuity of operations plan, and policies to ensure cyber security are developed and maintained.
e. The CERS CEO shall be responsible for implementing a formal trustee education program for all trustees of the CERS Board, pursuant to the requirements of KRS 78.782(17).
f. The CERS CEO shall develop recommendations for improvements and revisions of CERS Board policies and submit such revisions for CERS Board approval. CERS CEO shall ensure that approved policies are implemented in conformance with statutes, regulations, and CERS Board policies.
g. The CERS CEO shall collaborate with CERS General Counsel and KPPA Legal staff to monitor litigation affecting CERS plans. CERS CEO and CERS General Counsel shall report significant developments to the CERS Board.

h. The CERS CEO shall be responsible for oversight of CERS investment management to ensure that CERS investments are made in a manner consistent with policies promulgated by the CERS Investment Committee and approved by the CERS Board. In carrying out such responsibilities, the CERS CEO will monitor CERS investment policy compliance, investment performance, and ensure timely reporting to the CERS Board of oversight and monitoring concerns and actions.

i. The CERS CEO will ensure that the KPPA Legislation Status Chart is provided to CERS Trustees and will schedule meetings based on an assessment of the impact of proposed legislation. The CERS CEO and CERS General Counsel may also prepare draft changes to Kentucky Revised Statutes based on CERS Board or an ad-hoc CERS Legislative Committee recommendations, as well as housekeeping revisions to address technical issues and present them to Committee members prior to the date of a meeting. CERS CEO and General Counsel will research the impact of proposed changes and report the results to the Committee. CERS CEO and General Counsel will also make preliminary contacts with legislators, employers and interest groups to assist in formulating legislation to accommodate all interested parties. CERS CEO, General Counsel, and CERS Board Chair will work with the General Assembly, Legislative Research Commission, the Governor's Office, KPPA, and interest groups to advocate for passage of the Board's legislative proposals, or advocate for other interests supported by the Board.

j. The CERS CEO shall act as legislative liaison, and represent the CERS Board at legislative hearings and other legislative meetings. CERS CEO and General Counsel will review proposed legislation that is likely to impact CERS plan or administrative management and advise the CERS Board about pending legislation.

k. The CERS CEO shall provide technical assistance to the members of the General Assembly, Governor's office, and state and local government officials, as well as members, recipients, and beneficiaries of the County Employees Retirement System.

l. The CERS CEO shall recommend legislative or regulatory changes and propose draft language. These recommendations shall be presented to the CERS Board for review and approval.

o. The CERS CEO shall implement any statutory or regulatory changes and take appropriate action to conform to federal law. CERS CEO shall also collaborate with KPPA Executive Director to monitor implementation of any changes designated as KPPA’s responsibilities.

m. The CERS CEO shall sign all documents necessary to promulgate or amend an administrative regulation on behalf of the CERS Board as the head of the County Employees Retirement System in accordance with KRS 13A.220.

n. The CERS CEO shall communicate with the mass media and other agencies, entities or institutions, and CERS stakeholders, including responding to correspondence or inquiries addressed to the CERS Board.

o. The CERS CEO shall develop written procedures for completing the responsibilities outlined in these Bylaws. The CERS CEO shall collaborate with the KPPA administrative staff to coordinate key operational provisions specific to CERS, including but not limited to access codes for CERS Board files, equipment, and software maintained by the CERS CEO, key Trustee and vendor contact information, or other organizational information in the event that the CERS CEO is not available to perform the duties outlined in these Bylaws.

p. The CERS CEO shall collaborate with the KPPA Executive Director on issues related to benefits administration and to coordinate reciprocal benefits with the other state administered retirement systems in Kentucky.

q. In the case of emergency conditions that threaten the functioning of the County Employees Retirement System, the preservation or protection County Employees Retirement System' property or assets, vital data, or the health and safety of any person, and where a quorum of the CERS Board is unavailable, the

CERS CEO may take actions necessary to prevent or mitigate the threat, even if a vote of the CERS Board would otherwise be necessary to take such action. When a quorum of the CERS Board becomes available, any such actions taken by the CERS CEO shall be reviewed and ratified as necessary.

Section 2.1 STANDING COMMITTEES.

The CERS Board shall have the Standing Committees specified in Section 2.2, each of them to have the duties and responsibilities as therein set forth, together with such other duties and responsibilities as the CERS Board may by resolution determine. In each CERS Board Year, the Chair, elected at the annual meeting, shall appoint trustees to Committees as specified in Section 2.2, unless otherwise determined by the CERS Board. Each CERS Committee shall have a Chair and the CERS Board Chair shall appoint the Chair of each Committee, unless otherwise determined by the CERS Board. A CERS Committee may (but is not required to) elect a Vice-Chair from among its CERS Committee members by a majority vote of the Committee. A Vice-Chair so elected shall preside at meetings of the CERS Committee in the absence or inability to act of the Committee Chair. Any trustee may attend any meeting of any Committee of which he or she is not a Committee member, but shall not have a vote.

Section 2.2 STANDING COMMITTEES; DUTIES AND RESPONSIBILITIES.

The Standing Committees of the CERS Board are, and shall have respective duties and responsibilities, as follows:

a. Actuarial Committee. The CERS Actuarial Committee shall include (i) one (1) trustee with retirement administration experience appointed by the Governor pursuant to KRS 78.782(2)(b)(1-3); (ii) one (1) trustee elected by members of the County Employees Retirement System; and (iii) one (1) trustee with investment experience appointed by the Governor pursuant to KRS 78.782(2)(b)(4-6).
   1. Committee Responsibilities.
      A. The Committee will meet ~~semi-annually~~on the second Wednesday of February and April and the fourth Wednesday of October, with authority to convene additional meetings, as circumstances require. ~~The regular meetings shall be held in the first quarter and the fourth quarter of the calendar year.~~ Additional meetings may be convened in conjunction with experience studies or significant changes to federal or state statutory guidance for CERS.
      B. The CERS Actuarial Committee will review and evaluate actuarial assumptions, funding methods and tables proposed by the actuary (including without limitation all economic, mortality, disability, etc., assumptions) for each plan within County Employees Retirement System that affect: (i) the annual determination of the actuarial valuation of assets and liabilities of the System within the meaning of KRS 78.784; (ii) the factors that apply to amounts payable to members (e.g., early commencement, commutation, repayment, etc.); and (iii) the actuarially recommended contribution rate for employers required under KRS 78, except as otherwise determined by law or regulation,
      C. The CERS Actuarial Committee will report its findings and recommendations of each such review or evaluation to the CERS Board for the CERS Board to determine appropriate implementation and action.

b. Administrative Appeals Committee. The CERS Board shall collaborate with the Kentucky Retirement System Board to develop a timely disability and administrative appeals process. The CERS Board and the KRS Board will coordinate the Administrative Appeals process with one AAC for each Board. These AAC's may be combined with the DACs (Section 2.2(d), in compliance KRS 61.645(16) and KRS 78.782(16). Consistent with the provisions of KRS Chapter 13B, the AACs shall meet in alternate months, as needed, to act in matters of administrative appeals. Each Committee shall consist of three (3) members; however, the members appointed to one committee may also serve from time to time on the other Committee. One of the AAC shall consist of two (2) CERS Trustees and one (1) Kentucky Retirement Systems trustee. The other AAC shall consist of one (1) CERS Trustee and two (2) Kentucky Retirement Systems trustees. The AACs shall ensure that the laws governing CERS are administered impartially and uniformly, and that the actions of the CERS resulting in the appeal were correct and fair under the applicable statutes and regulations.

1. AAC Responsibilities: In matters of administrative appeals; the Committee members shall consider the administrative record, including the recommended order and any exceptions filed in compliance with KRS 13B.120. The AAC shall act on behalf of the entire CERS Board as the agency head in making a final order of the CERS Board in accordance with KRS 13B.120. The Committee may adopt the hearing officer's recommended order; or it may reject or modify, in whole or in part, the recommended order; or it may remand the matter, in whole or in part, to the hearing officer for further proceedings as appropriate; or it may act on cases properly remanded by a court of competent jurisdiction. The Committee may also recommend legislative changes to improve the administration of the benefits. Any recommended legislative changes shall be referred to the CERS CEO for study and development for the CERS review and approval.
2. KPPA Executive Director Office of Benefits Responsibilities. The Executive Director, KPPA Office of Benefits or designated staff, in coordination with KPPA Legal Staff, will coordinate meeting dates and determine which cases will be reviewed by each AAC. Designated staff will compile the administrative records and distribute the files to the Committee members prior to each meeting. KPPA Legal Staff may provide legal or technical advice to the Committee,

c. Finance Committee. The Committee shall consist of not less than three (3) and not more than four (4) members and will act on behalf of the CERS Board in fulfilling its oversight responsibilities for the financial reporting process, the system of internal control, the internal and external audit processes, and the process for monitoring compliance with laws, regulations, and the applicable codes of conduct.

1. Committee Responsibilities.
   - A. The Finance Committee will meet quarterly, with authority to convene additional meetings, as circumstances require. The regular quarterly meetings shall be held on the third Monday of February, May, and August, and the fourth Monday of November at ~~those~~ times selected by the Finance Committee Chair.
   - B. The Finance Committee shall have the authority to review reports by the KPPA Internal Audit Administration and to recommend appropriate policies and procedures to KPPA.
   - C. The Finance Committee shall review the job descriptions for the employees whose names have been certified by the applicable authority to meet the criteria of KRS 61.592 and 105 KAR 1:130 for hazardous duty, and also those employees who have been so certified who are not, or who no longer are, working in a hazardous duty position. Upon review and approval, the Finance Committee shall forward the results and its recommendations for the appropriate classification as hazardous or nonhazardous duty to the CERS Board for approval and ratification.
2. The Finance Committee shall review interim financial reports and budget-to-actual comparisons for administrative budgets. Financial reports shall include, but are not limited to, statement of net position, statement of changes in net financial position, cash flow reports, accounts receivable, and collection activity reports for each plan (pension and insurance, nonhazardous and hazardous).

3. The Finance Committee may request internal audits to analyze specific issues relevant to CERS plan management, investment performance, or administration.
4. Audit Charters. The KPPA Division of Internal Audit Charter are hereby incorporated by reference.
5. Budget. The Finance Committee shall review the County Employees Retirement System's biennial administrative budget and necessary budget amendments.

d. Disability Appeals Committee. The CERS Board shall collaborate with the Kentucky Retirement System Board to develop a timely disability and administrative appeals process. The CERS Board and the KRS Board will coordinate the Disability Appeals process with one DAC for each Board. These DAC's may be combined with the AACs (Section 2.2(b), in compliance KRS 61.645(16) and KRS 78.782(16). Consistent with the provisions of KRS Chapter 13B, the DACs shall meet in alternate months, as needed, to act in matters of administrative appeals. Each Committee shall consist of three (3) members; however, the members appointed to one committee may also serve from time to time on the other Committee. One of the DAC shall consist of two (2) CERS Trustees and one (1) Kentucky Retirement Systems trustee. The other DAC shall consist of one (1) CERS Trustee and two (2) Kentucky Retirement Systems trustees. The DACs shall ensure that the laws governing CERS are administered impartially and uniformly, and that the actions of the CERS resulting in the appeal were correct and fair under the applicable statutes and regulations.

1. Committee Responsibilities. In matters of disability appeals, the Committee members shall consider the administrative record, including the recommended order and any exceptions filed in compliance with KRS 13B.120. The Committee shall act on behalf of the entire CERS Board as the agency head in making a final order of the CERS Board in accordance with KRS 13B.120. The Committee may adopt the hearing officer's recommended order; or it may reject or modify, in whole or in part, the recommended order; or it may remand the matter, in whole or in part, to the hearing officer for further proceedings as appropriate; or it may act on cases properly remanded by a court of competent jurisdiction. The Committee may also recommend legislative changes to improve the administration of the benefits. Any recommended legislative changes shall be referred to the CERS CEO for study and development for the CERS Board review and approval.
2. KPPA Executive Director Office of Benefits Responsibilities. The Executive Director, KPPA Office of Benefits, or designated staff, in coordination with KPPA Office of Legal Services staff, will coordinate meeting dates and determine which cases will be reviewed. Designated staff will compile the administrative records and distribute the files to the Committee members prior to each meeting. Staff may provide legal or technical advice to the Committee.

e. Investment Committee. The Committee shall consist of ~~five~~ four (4~~5~~) members, as follows: the three (3) trustees appointed by the Governor pursuant to KRS 78.782(2)(b)(4-6) (investment experience), and one (1) trustee~~s~~ appointed by the CERS Board Chair~~, and one (1) Trustee elected by the membership (KRS 78.782(4) or one (1) Trustee appointed by the Governor pursuant to KRS 78.782(2)(b)(1-3) (retirement administration)~~.

1. Committee Responsibilities.
   A. Pursuant to KRS 78.790, the CERS Investment Committee shall have authority to implement the investment policies adopted by the Board, including without limitation the CERS Board's Statement of Investment Policy (pensions and health), and to act on behalf of the CERS Board on all investment-related matters, and to acquire, sell, safeguard, monitor, and manage the assets and securities of the several funds.
   B. The CERS Investment Committee will meet at least quarterly to review reports from investment staff, investment consultants, and investment managers with authority to

convene additional meetings as circumstances require. The regular quarterly meetings shall be held on the fourth Wednesday of February, May, and August and the fourth Tuesday of November at ~~those~~ times selected by the Investment Committee Chair.

C. The CERS Investment Committee will monitor investment performance and management practices and make reports and recommendations to the CERS Board. The CERS Investment Committee will approve the selection and termination of service providers. The CERS Investment Committee will evaluate whether the Investment Policy, the investment activities, and management controls and processes continue to be consistent with meeting the County Employees Retirement System's financial and plan management goals, and perform other duties specified in the Statement of investment Policy.

D. The Investment Committee may also recommend legislative changes to the CERS CEO and CERS Board to improve the administration of investment related matters.

2. Collaboration with KPPA Executive Director, Office of Investments (CIO).

A. The CIO shall administer the assets of the County Employees Retirement System consistent with the policies, guidelines, and limits established by the law, the CERS Investment Committee and the CERS Statement of Investment Policy.

B. The CERS CEO will collaborate with the KPPA CIO to develop and monitor investment management and investment performance reporting for the CERS Investment Committee and CERS Board.

C. The KPPA CIO and CERS CEO shall provide members of the CERS Investment Committee with assessments of service providers and performance reports.

D. The KPPA CIO and CERS CEO shall identify issues for consideration by the CERS Investment Committee and prepare recommendations regarding those issues.

E. The CIO and CERS CEO shall recommend changes to the Investment Committee regarding service providers, statutes, policies or guidelines, as needed, to maintain a productive relationship between the investment program and its goals.

F. The CIO and/or CERS CEO shall communicate with the mass media and other agencies, entities, or institutions regarding investment related issues.

3. CERS Investment Policy. The "CERS Investment Policy Statement: Pension Funds," the "CERS Investment Policy Statement: Insurance," and the "CERS Investment Procurement Policy" are hereby incorporated by reference.

f. **Joint Kentucky Retirement Systems and CERS Retiree Health Plan Committee.** The Committee shall consist of four (4) Trustees, including two (2) Trustees appointed from the CERS Board by the CERS Chair and two (2) Trustees appointed from the Kentucky Retirement Systems Board by the Kentucky Retirement Systems' Chair. The Committee shall elect a Chair and Vice Chair and shall assist the CERS and KRS Boards in providing a group hospital and medical insurance plan for present and future recipients of a retirement allowance from the systems administered by County Employees Retirement Systems as required by KRS 61.702.

1. **Committee Responsibilities.**

A. The Committee will meet quarterly to review reports from KPPA staff and retiree health insurance consultants with authority to convene additional meetings, as circumstances require. The regular quarterly meetings shall be held at those times selected by the Joint Retiree Health Plan Committee Chair.

B. The Committee will monitor retiree health insurance matters and make reports and recommendations to the CERS and KRS Boards. The Committee will evaluate retiree health insurance issues and obligations set forth in state and federal law. The Committee may, as deemed necessary, evaluate health insurance companies, health maintenance organizations, self-insurance proposals, and other ways of providing a group hospital and medical insurance plan for retired members as provided in KRS 61.702.

C. The Committee may negotiate and recommend appropriate contracts for execution by the CERS & KRS Boards, in accordance with the requirements of the Commonwealth of Kentucky Model Procurement Act (KRS 45A). The Committee may solicit reports and actuarial analyses in order to analyze issues regarding retiree health insurance. The Committee may also recommend legislative changes to improve the administration of retiree health insurance related matters. Any recommended legislative changes shall be referred to the CEO for study and development.

2. **KPPA Executive Director Responsibilities.** The KPPA Executive Director and designated staff will maintain and provide the Committee with necessary information to execute its responsibilities. The KPPA Executive Director or designated staff will provide advice regarding state and federal laws and regulations. KPPA Administrative Staff will identify issues for consideration by the Committee and prepare recommendations regarding those issues.

~~g. **Joint Kentucky Retirement Systems and CERS Audit Committee.** The Committee shall consist of four (4) Trustees, including two (2) Trustees appointed from the CERS Board by the CERS Chair and two (2) Trustees appointed from the Kentucky Retirement Systems Board by the Kentucky Retirement Systems' Chair. The Committee shall elect a Chair and Vice Chair. The Committee will act on behalf of the Board in fulfilling its oversight responsibilities for the system of internal control, the internal and external audit processes, and the process for monitoring compliance with laws, regulations and the code of conduct.~~

~~1. **Committee Responsibilities.** The Committee will meet quarterly, with authority to convene additional meetings, as circumstance require. The regular quarterly meetings shall be held at those times selected by the Joint Audit Committee Chair.~~

~~A. The Committee shall have the authority to review reports by the Internal Auditor and to recommend appropriate policies and procedures. Additional responsibilities are enumerated in the Audit Committee Charter.~~

~~B. The Committee shall have the authority to receive communications and audit reports from the KPPA external auditor and recommend actions to the KRS & CERS Boards and KPPA for improving internal controls, financial reporting, and management.~~

~~2. **Internal Auditor Responsibilities.** The KPPA Internal Auditor will be responsible for the planning, implementation, and reporting of audits and internal audit plans. The Internal Auditor will also be responsible for the functional control and audit activities in the relation to the objectives of the KPPA Division of Internal Audit. Additional responsibilities are enumerated in the KPPA Division of Internal Audit Charter.~~

~~3. **Audit Charters.** The Audit Committee Charter and the KPPA Division of Internal Audit Charter are hereby incorporated by reference.~~

~~h.~~g. **Personnel Committee.** The CERS Personnel Committee shall include three members appointed from the CERS Board by the CERS Chair. Members should have relevant experience for personnel management and/or legal expertise for personnel laws and regulations.

1. **Committee Responsibilities.** The Committee will meet semi-annually, with authority to convene additional meetings, as circumstances require. The regular meetings shall be held on the second Tuesday of January and June at a time selected by the Committee Chair. ~~determined by the Board of Trustees no later than the December Board of Trustees meeting of the previous calendar year.~~ Special meetings may be convened in conjunction with the need to evaluate, advise, coach or reprimand any CERS employee or professional services contract provider.

A. The CERS Personnel Committee will recommend to the full Board of Trustees the appropriate number of employees and professional service contract providers to be employed by CERS. The CERS Personnel Committee will establish job descriptions and performance goals for all CERS employees and professional service contract providers. The Committee will evaluate the job performance of all CERS employees and make recommendations to the full Board of Trustees concerning employee compensation, retention, and potential disciplinary action, if needed.

B. The Personnel Committee will work closely with the KPPA Human Resources Department to identify and implement best practices for employee development and training opportunities. The Personnel Committee will endeavor not to replicate services currently provided by KPPA Human Resources Department which are made available to CERS employees and professional services contract providers.

C. The CERS Personnel Committee will report its findings and recommendations of each such review or evaluation to the CERS Board for the CERS Board of Trustees to determine appropriate implementation and action.

h. **Legislative Committee**. The CERS Legislative Committee shall include three members with relevant experience for developing pension management policies and related legislation appointed by the CERS Chair. The Committee shall elect a Chair and Vice-Chair.

1. **Committee Responsibilities.** The Legislative Committee shall meet at least annually to review legislative proposals under consideration by the General Assembly, with authority to convene special meetings as necessary. Regular meetings shall be held on the 4th Monday of July and August at a time selected by the Committee Chair.

   A. The Committee shall review pension legislation proposed in the General Assembly that affects CERS and may develop a recommended position on the legislation to be adopted by the CERS Board of Trustees.

   B. The Committee may develop recommended legislative changes for submission to the Public Pension Oversight Board (PPOB). These recommendations should be approved by the CERS Board of Trustees prior to submission to PPOB.

   C. The CERS CEO shall review pension-related legislation on the General Assembly docket and provide feedback to the CERS Legislative Committee for consideration. The CEO may also recommend Special Meetings of the Committee to consider critical legislation in a timely manner.

i. In addition to the duties and responsibilities described in this Section 2.2, each Standing Committee may develop appropriate additional policies and proposals to be ratified by the CERS Board.

Section 2.3 DELEGATIONS OF AUTHORITY BY THE CERS BOARD.

Delegation of Authority. Except as may be prohibited by or inconsistent with law, the CERS Board may delegate to any CERS Standing Committee of the Board any power, authority, duty, or responsibility conferred on the Board by law. In the case of any such delegation, the decision or action of the CERS Committee within the scope of its delegated authority shall constitute the decision or action of the CERS Board. The CERS Board may at any time rescind the delegated authority as a whole or in part, except that a rescission of authority with respect to quasi-judicial matters delegated to a CERS Committee shall not operate to affect the proceedings or the final action of any such matter pending before the Committee when the CERS Board acts to rescind. This exception is designed to preclude the CERS Board from using its authority to rescind a delegation to interfere with the process or outcome of a quasi-judicial proceeding then in progress before a CERS Committee which had properly commenced the proceeding within the scope of its authority.

Section 2.4 AD HOC COMMITTEES.

In addition to the CERS Standing Committees specified in Section 2.2, the Chair or the CERS Board may at any time establish an ad hoc Committee of the CERS Board and fix its duties and responsibilities for any purpose which, in the judgment of the CERS Chair or the CERS Board, is better served by a temporary rather than CERS Standing Committee. Each such Committee shall consist of such number of members as the CERS Chair shall determine, and the CERS Chair shall also then appoint the CERS Chair and designate the other members of the CERS Committee, unless otherwise determined by the CERS Board.

Section 2.5 KPPA COMMITTEES

The CERS Board of Trustees shall collaborate with Committees established by the Kentucky Public Pensions Authority to develop administrative and benefit management policies as necessary for the County Employees Retirement System.

Section 2.6 LIMITATIONS ON AUTHORITY.

No CERS Committee shall have any power or authority, nor shall the CERS Board delegate to itself, power or authority, as to any of the following:

a. The amendment or repeal of any CERS Board resolution.
b. Action on other matters committed by CERS Board resolution or by Kentucky law (including the common law of trusts respecting the delegation or the non-delegation of fiduciary responsibilities) to the CERS Board under terms or provisions that make such action non-delegable.

Section 2.7~~6~~ AMENDMENT OF BYLAWS.

These Bylaws may be amended by presenting the proposed amendments at any regular or special meeting of the CERS Board of Trustees. Proposed amendments shall also be presented at a subsequent regular or special meeting of the CERS Board of Trustees. The subsequent meeting shall be scheduled no less than 48 hours after the meeting to first present the proposed amendments. Proposed amendments shall be posted on the KPPA website between the first and second presentation of the recommendations. Approval of proposed amendments to Bylaws requires a vote of a majority of the entire membership of the CERS Board for approval.

Section 3.0 CERTIFICATION OF STATEMENT OF BYLAWS AND COMMITTEE ORGANIZATION.

We, the Chair of the CERS Board of Trustees and the Chief Executive Officer of the County Employees Retirement System, do certify that this Statement of Bylaws and Committee Organization was approved and adopted by the CERS Board of Trustees on the ~~14th~~ 8th day, of ~~September 2022~~November, 2023.

_______________________________________ Date ______________

Chair, Board of Trustees

_______________________________________ Date ______________

CERS Chief Executive Officer

PROPOSED RECURRING MEETING SCHEDULE

BY MONTH	
MONTH	**MEETINGS**
January	Personnel – 2^{nd} Tuesday Training – 3^{rd} Wednesday
February	Actuarial – 2^{nd} Wednesday Healthcare – 3^{rd} Thursday Finance – 3^{rd} Monday Investment – 4^{th} Wednesday
March	Board – 3rd Wednesday
April	Actuarial – 2^{nd} Wednesday Board (Annual) – 3^{rd} Wednesday
May	Healthcare – 2^{nd} Wednesday Finance – 3^{rd} Monday Investment – 4^{th} Wednesday
June	Personnel – 2^{nd} Tuesday Board – 3^{rd} Wednesday
July	Trustee Training – 3^{rd} Wednesday Legislative – 4^{th} Monday
August	Finance – 3^{rd} Monday Legislative – 4^{th} Monday Investment – 4^{th} Wednesday
September	Healthcare – 1^{st} Tuesday Board – 3^{rd} Wednesday
October	Trustee Training – 3^{rd} Wednesday Healthcare – 3^{rd} Monday Actuarial – 4^{th} Wednesday
November	Board – 1^{st} Wednesday Finance – 4^{th} Monday Investment – 4^{th} Tuesday
December	Board – 2^{nd} Monday

BY COMMITTEE	
COMMITTEE	**SCHEDULE**
Actuarial	Feb – 2^{nd} Wednesday April – 2^{nd} Wednesday October – 4^{th} Wednesday
Finance	Feb – 3^{rd} Monday May – 3^{rd} Monday August – 3^{rd} Monday November – 4^{th} Monday
Investment	Feb – 4^{th} Wednesday May – 4^{th} Wednesday August – 4^{th} Wednesday November – 4^{th} Tuesday
Legislative	July – 4^{th} Monday August – 4^{th} Monday
Personnel	Jan – 2^{nd} Tuesday June – 2^{nd} Tuesday
Joint Retiree Health Care	Feb – 3^{rd} Thursday May – 2^{nd} Wednesday September – 1^{st} Tuesday October – 3^{rd} Monday
Board of Trustees	March – 3^{rd} Wednesday April – 3^{rd} Wednesday June – 3^{rd} Wednesday Sept – 3^{rd} Wednesday Nov – 1^{st} Wednesday December – 1^{st} Monday
Trustee Training	Jan – 3^{rd} Wednesday July – 3^{rd} Wednesday October – 3^{rd} Wednesday

AMENDED PERSONAL SERVICE CONTRACT FOR

CHIEF EXECUTIVE OFFICER BETWEEN

COUNTY EMPLOYEES RETIREMENT SYSTEM AND

EDWARD OWENS, III
932 STAR OF DANUBE WAY
LEXINGTON, KENTUCKY 40509

This Personal Service Contract ("PSC") is entered into by and between the County Employees Retirement System ("System" or "CERS") and Edward Owens, III ("Employee") to establish a contract for the Chief Executive Officer ("CEO") of the County Employees Retirement System.

No solicitation under the Kentucky Model Procurement Code was issued for these services. Employee's appointment to this position was determined under the statutory authority of CERS. Per Kentucky Revised Statutes Section 78.782(9)(a), "The board of trustees shall appoint or contract for the services of a chief executive officer…and fix the compensation & other terms of employment…without limitation of the provisions of KRS Chapters 18A, 45A and KRS 64.640."

This PSC is effective 07/01/2023 and expires 06/30/2025. The Board of Trustees of the County Employees Retirement System reserves the right to renew this agreement per the authority granted to them in KRS 78.782 and by House Bill 9, which passed in the 2021 Regular Legislative Session.

CERS and Employee agree to the following:

I. Scope of Agreement

Services required:

Employment Duties, Contract Term and Application of Personnel Policies.

1. Duties.

The Board of Trustees ("Board") of the County Employees Retirement System agrees to employ Edward Owens, III ("Employee") as Chief Executive Officer in a full-time exempt capacity. Employee will report to the Board of CERS and shall perform his duties and discharge his responsibilities competently, carefully and faithfully as required herein and in the CERS Policies, as applicable. Per Kentucky Revised Statutes Section 78.782(9)(a) the CEO "shall serve as the legislative and executive adviser to the board…The chief executive officer…shall work with the executive director of the Kentucky Public Pensions Authority ("KPPA") to carry out the provisions of KRS 78.510 to 78.852." Employee's general duties are described in the CERS Chief Executive Officer Position Description (attached hereto as "Exhibit A"), as amended from time to time by CERS, and shall also include such other duties as are assigned to the Employee by the Board, and as may be listed in the CERS Board Bylaws. Employee will devote his time and best efforts to the affairs of CERS and shall complete all assigned tasks to the satisfaction of the Board and within any prescribed timeframe.

2. Contract Term.

The term of Employee's PSC with CERS shall be for the period from July 1, 2023 through June 30, 2025 (the "Contract Term"), unless earlier terminated pursuant to this Agreement. Nothing in this Agreement shall be construed to create any commitment, guarantee, agreement or understanding of any kind that CERS shall continue to employ Employee after the end of the Contract Term. Employee's performance shall be reviewed by the CERS Board, or a subcommittee thereof, upon the completion of one (1) year of employment.

3. Policies.

The Employee is subject to the Commonwealth of Kentucky Employee Handbook, any Personnel Policies, Conflict of Interest Policies, Confidentiality Policies or any other personnel related policies, statutes and regulations which apply to CERS or Commonwealth of Kentucky employees, except to the extent his unclassified position is exempted therefrom in any statute, or exempted as set forth in this Agreement.

4. Compensation.

A. Salary.

CERS shall pay Employee, as compensation for the performance of his obligations under this Agreement, an annual salary of $165,000.00. Employee understands that no variable or performance linked compensation is envisioned during the term of this agreement. The salary shall be paid in such periodic installments as KPPA and the Commonwealth pays their employees.

B. Benefits.

Employee is to work in a full-time capacity on a 37.5 hour work week, as defined in the Commonwealth of Kentucky Employee Handbook ("Employee Handbook"). Except as set forth below, CERS shall provide Employee, for the duration of his employment, with all benefits received by other full-time employees of KPPA and the Commonwealth of Kentucky.

(i) Employee and CERS agree that Employee is not to participate in the Kentucky Employees Retirement System non-hazardous retirement plan. Instead, and as a retirement benefit, Employee, being eligible to participate in The Kentucky Public Employees' Deferred Compensation Authority (hereinafter KDC), shall be paid by CERS the following:

(a) CERS shall contribute, on behalf of the Employee, Two Dollars ($2) for every One Dollar ($1) contributed by the Employee of the first 7% of the Employee's salary to either the KDC 401k Pre-

Tax Plan, or 401(k) ROTH After-Tax plan. Employee will be 100% vested in these benefits.

If Employee works in excess of 37.5 hours in a work week, he shall receive compensatory leave time, on an hour for hour basis, for all hours worked in excess of 37.5 hours, in the same manner as provided for all other exempt employees in a policy making position, as set forth in the Employee Handbook. As with all other leave Employee accrues, unless for an unexpected or emergency purpose, he is to request advance leave approval for the use of compensatory leave. If Employee needs to be absent for an emergency or unexpected reason, Employee shall contact the CERS Chair as soon as practicable.

It is understood and agreed by Employee that the annual salary and benefits set forth above shall not be changed during the Contract Term (unless the Commonwealth of Kentucky amends the benefits received by its full-time employees).

5. Early Termination of Employment.

A. Termination for Cause.

CERS may immediately terminate Employee's employment with CERS at any time prior to the end of the Contract Term for "Cause" as defined below. The decision to terminate the Employee for Cause shall require a majority vote of the full CERS Board. The existence of Cause shall be determined in the sole and absolute discretion of the CERS Board.

(i) Definition and Determination of "Cause."

(a) As used herein, "Cause" shall include but not be limited to the following:

(I) Failure or neglect by Employee to satisfactorily perform the duties of the Employee's position.

(II) Failure of the Employee to obey lawful orders or to comply with lawful directives to him.

(III) Misconduct in connection with the performance of any of his duties, including but not limited to misappropriations of funds or property of CERS, misrepresentations to CERS or any regulatory authority, the violation of any laws, regulations or policies to which CERS is subject or the Employee's position is subject, violation of a provision of the Kentucky Executive Branch Code of Ethics or any policies of the County Employees Retirement System.

(IV) Commission by Employee of an act involving moral turpitude, dishonesty, theft, unethical business conduct, or conduct that impairs or injures the reputation of, or harms, CERS.

(V) The performance of any act as CEO outside the authority of the CEO.

(VI) Failure to cooperate fully in any investigation by CERS or by any regulatory or law enforcement authority that may properly investigate the CERS.

(VII) Disclosure of any confidential or proprietary information.

(VIII) Use or abuse of alcohol or drugs which interferes with the Employee's performance of his duties.

(ii) CERS shall provide Employee with written notice of termination for Cause citing the specific reasons for the termination. The Employee is non-classified and therefore Employee does not have the right to appeal any termination in any manner to a neutral decision maker. Consequently, Employee shall have no rights to the Grievance and Appeal Procedures set forth in the Commonwealth of Kentucky Employee Handbook and shall have no right of appeal to the Kentucky Personnel Board. The Employee's only rights of recourse are set forth in this Agreement.

If Employee's employment with CERS is terminated for Cause prior to the end of the Contract Term, Employee shall receive his contractual compensation, as set forth herein, through the date of termination, and Employee shall not be entitled to compensation for the remaining term of employment under this Agreement.

B. Termination Without Cause.

The Board may terminate Employee's employment with CERS prior to the end of the Contract Term at any time without Cause by providing written notice of the same. If Employee's employment with CERS is terminated prior to the end of the Contract Term for reasons other than Cause, the Employee shall be entitled to three (3) months of the contractual compensation or the amount of the contractual compensation remaining through the end of the Contract Term, whichever is less. This amount shall be payable to Employee in one lump-sum payment within thirty (30) calendar days of termination; provided, however, CERS shall not be required to make any such payment until, upon the request of and in form acceptable to CERS, Employee executes and delivers a full and complete release of CERS, CERS' Board, and CERS' and KPPA's employees, individually and in their official capacities, for any and all claims and potential claims of any nature, employment related or otherwise, whether arising by statute, contract or common law, that Employee could assert against CERS or KPPA, such release to be in a form satisfactory to CERS and its counsel.

In the event of termination without Cause, the only obligation for compensation to Employee shall be as stated in this subparagraph, and Employee shall not be entitled to compensation for the remaining term of employment under this Agreement.

C. Voluntary Termination.

Employee shall have the right to terminate his employment with CERS voluntarily, at any time, by giving at least sixty (60) days' written notice to the Chair of the CERS Board. Under the terms of a voluntary termination, Employee is entitled to his contractual compensation, as set forth herein, through the date of resignation.

6. Miscellaneous.

A. Notices.

Any notice or other communication required or which may be given to any party hereunder shall be in writing and shall be delivered personally, or sent by certified, registered or express mail, postage prepaid, and shall be deemed given when so delivered personally, or if mailed, five days after the date of mailing to the respective party as follows:

To CERS: County Employees Retirement System
Attention: CERS Board Chair
1260 Louisville Road
Frankfort, KY 40601

To Employee: Edward Owens, III
932 Star of Danube Way
Lexington, Kentucky 40509

B. Successors and Assigns.

This Agreement shall inure to the benefit of and be binding upon CERS and its successors and assigns, and Employee and his heirs and personal representatives, but Employee's rights hereunder are personal to him and shall not be subject to voluntary or involuntary alienation, assignment or transfer. For the purposes of this Agreement, the term "successors and assigns" shall mean any person, firm, corporation, or other entity which at any time, whether by change in law, merger, purchase or otherwise, shall manage or acquire all, or substantially all, of the assets or business of CERS.

C. Governing Law.

This Agreement shall be governed by, and construed in accordance with, the laws of the Commonwealth of Kentucky.

D. Entire Agreement.

This Agreement is the entire and exclusive agreement between Employee and CERS with regard to the subject matter hereof and supersedes all previous oral and written agreements or understandings, and all contemporaneous oral and written negotiations, commitments, understandings and communications between the parties, relating to the subject matter of this Agreement. Either CERS or Employee may terminate the employment relationship at any time for any reason pursuant to the terms of this Agreement. Nothing in this Agreement is intended, nor should be construed, to limit or modify this mutual right. This Agreement was negotiated between the Employee and representatives of the CERS Board.

E. Waivers and Amendments.

This Agreement may be amended, modified, superseded, cancelled, renewed or extended, and the terms and conditions hereof may be waived, only by a written instrument signed by the Chair of the CERS Board of Trustees and Employee or, in the case of a waiver, by the party waiving compliance. No delay on the part of the CERS Board or Employee in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any waiver on the part of the CERS Board or Employee of any right, power or privilege hereunder, or any single or partial exercise of any right, power or privilege hereunder, preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder. The rights and remedies herein provided are cumulative and are not exclusive of any rights or remedies that the CERS Board or Employee may otherwise have at law or in equity, except as expressly excluded herein.

F. Severability.

The invalidity or unenforceability of any particular provision of this Agreement shall not affect the other provisions hereof.

G. Counterparts.

This Agreement may be executed in two (2) or more Counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

H. Headings.

The headings in this Agreement are for reference purposes only and shall not in any way affect the meaning, construction or interpretation of this Agreement. Any rule of construction to the effect that ambiguities are to be resolved against the drafting party does not apply in interpreting this Agreement. The language in all parts of this Agreement is to be construed according to its fair meaning, and not strictly for or against any party hereto.

I. Jurisdiction.

CERS and Employee hereby irrevocably consent and submit to the jurisdiction of (A) the Circuit Court of Franklin County, Commonwealth of Kentucky or (B) the United States District Court sitting in and for the district which includes the City of Frankfort, Commonwealth of Kentucky in any dispute, action, claim or proceeding arising out of or relating to this Agreement, and irrevocably agree that any and all claims arising out of or relating to this Agreement shall be heard and determined in these Courts, without regard to the principle of conflicts of law.

J. Conflict-of-Interest Laws and Principles.

The Employee certifies that he is legally entitled to enter into this Agreement with CERS, and by holding and performing this Agreement, he will not be violating any Conflict of Interest Statute or Policy, or KRS 11A.040 of the Executive Branch Code of Ethics.

K. Survival.

This Agreement shall survive the termination of Employee's Employment with CERS.

II. Contract Components and Order of Precedence

CERS' appointment of the Employee as its Chief Executive Officer shall create a valid contract between the Parties consisting of the following:

1. Any written Agreement between the Parties.
2. Any Addenda to the Agreement.

In the event of any conflict between or among the provisions contained in the Agreement, the order of precedence shall be as enumerated above.

III. Pricing

1. Salary.

CERS shall pay Employee, as compensation for the performance of his obligations under this Agreement, a base annual salary of $165,000.00 and benefits as determined and set forth herein. Employee understands that no variable or performance linked compensation may be paid during the term of this agreement. Any and all changes to this Agreement must be processed in the same manner as the original Agreement. The salary shall be paid in such periodic installments as KPPA and the Commonwealth of Kentucky pays their employees.

IV. Invoicing

1. Payment.

Payment is processed through the Commonwealth of Kentucky's KHRIS system. In order to assist CERS in determining its future need for a full-time or part-time CEO, Employee shall accurately track and record any and all time (hours and quarter of hour fractions thereof) spent performing any duty, however minor the time may seem (e.g. 5 minutes responding to an e-mail x 3 e-mails = 0.25 hours to be reported), relating to this Agreement. Any time worked up to 15 minutes shall be reported as 0.25 hours. Any time worked between 16 minutes and 30 minutes shall be reported as .50 hours. Any time worked between 31 minutes and 45 minutes, shall be reported as .75 hours. Any time worked between 46 minutes and 1 hour shall be reported as 1.0 hours.

2. Travel Expenses.

CERS shall reimburse the Employee for travel expenses in accordance with the state regulations established by the Kentucky Finance and Administration Cabinet and in compliance with Kentucky Revised Statutes and Kentucky Administrative Regulations upon receipt of approved documentation. Employee shall receive pre-authorization from the CERS Board Chair before travelling or attending any educational sessions (including virtual trainings) on behalf of CERS.

3. Other Expenses.

The Employee shall be reimbursed for no other expenses of any kind, unless and except as specifically authorized within the specifications of this Agreement or authorized in advance and in writing by the Chair of the CERS Board.

If reimbursement of such expenses is authorized, the reimbursement shall be only on an out-of-pocket basis. Request for payment of same shall be processed upon receipt from the Employee of valid, itemized statements submitted periodically for payment at the time any expenses are due. The Employee shall maintain supporting documents that substantiate every claim for expenses and shall furnish the same if requested by CERS.

[REMAINDER OF THE PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, CERS has caused this Agreement to be subscribed on its behalf by its duly authorized agent, and Employee has caused this Agreement to be subscribed on his behalf, as of the __ day, June 2023. By affixing signatures below, the parties verify that they are authorized to enter into this Agreement and that they accept and consent to be bound by the terms and conditions stated herein. In addition, the parties agree that (i) electronic approvals may serve as electronic signatures; and (ii) this Agreement may be executed in any number of counterparts, each of which when executed and delivered shall constitute a duplicate original, but all counterparts together shall constitute a single contract.

CERS:

COUNTY EMPLOYEES RETIREMENT SYSTEM

By: Betty A Pendergrass
Name: Betty Pendergrass
Title: CERS Board Chair
Date: 06/27/2023

Employee:

EDWARD OWENS, III

By: ____________________
Name: Edward Owens, III
Title: CERS Chief Executive Officer
Date: ____________________

APPROVED AS TO FORM AND LEGALITY:
CERS

By: W E B
Name: W. Eric Branco
Title: General Counsel, CERS
Date: 6/26/2023

EXHIBIT A

Position Description Chief Executive Officer CERS Board of Trustees

SUMMARY OF DUTIES

Responsible for all functions relating to efficient operations of the CERS Board of Trustees, develops policies and procedures; collaborates with KPPA Administrative staff; serves as legislative liaison; and develops a strategic plan for governance of CERS.

CERS BOARD MISSION

Develop core mission statement and organize Board's strategic planning. Develops collaborative team strategy with KRS and KPPA Board and staff. Develop relationships with key stakeholders. Recommend policy revisions to improve costs, efficiency, and effectiveness. Recommend communications improvements for members and stakeholders. Furnishes written reports, as requested by the CERS Board.

INVESTMENT OVERSIGHT

Coordinate with KPPA CIO and investment staff to oversee CERS Investment portfolio. Review monthly investment performance reporting and collaborate with CERS Investment consultant(s) to monitor investment strategy. Ensure that materials and advisor communications are organized for CERS Investment Committee and Board discussions of investments.

ACTUARIAL ANALYSIS

Facilitate Board's discussion of actuarial assumptions, annual valuations, studies, and presentations to PPOB. Coordinate with Actuary selected by KPPA to complete annual actuarial valuation and periodic experience studies. Monitor CERS compliance with statutory requirements for actuarial analysis and reporting. Facilitate Actuarial Analysis required for proposed legislation.

LEGISLATIVE LIAISON

Collaborate with stakeholders to develop legislative goals. Monitor legislation that impacts CERS. Develop reporting & communication to PPOB. Develop CERS Board biennial budget request for CERS approval. Coordinate with KPPA to integrate CERS Board budget with the KPPA Administrative biennial agency budget request. Respond to legislative inquiries for actuarial or financial data.

PROCUREMENT COORDINATION

Prepares, or oversees preparation of, Request for Proposals for various contractual services. Serves as the liaison with the CERS outside advisors. Represents CERS Board on task forces, committees, councils or meetings as assigned. Plans, develops, initiates and evaluates research projects. Analyze CERS cash flow reporting. Develop SAFR reporting strategy.

COMPLIANCE

Confer with General Counsel. Provide technical assistance, advice and interpretation of rules and regulations, policies/procedures to legislators, CERS Board & Committees for CERS plan management. Coordinates with KPPA Executive Director to implement administrative policies. Develops and implements policy/procedures to ensure compliance with state and federal laws, rules and regulations.

OTHER DUTIES

Performs other duties as assigned.

Position Description Chief Executive Officer CERS Board of Trustees (Continued)

QUALIFICATIONS AND EXPERIENCE:

The following list is not the minimum qualifications, but does outline the types of qualifications and experience that CERS Board will consider to evaluate candidates. Candidates should describe their specific expertise, training, or experience with any of these areas in their proposal.

- Bachelor's degree in the fields of Accounting, Public Administration, Finance, Law, or a field related to governmental management or governing board administration.
- Professional certifications in finance, accounting, pension, or investment management, such as a CPA, CMA, CFA, Accredited Fiduciary, Certified Retirement Administrator, or a related profession.
- Significant management experience with governing board organization, pension administration, financial services, legislative analysis, educational development, and/or governmental management operations.
- Understanding of the fiduciary role of Trustees and a CEO for management of a public employee retirement system.
- Knowledge of federal and Kentucky laws and regulations governing open meetings, open records, ethics, public pension systems, governmental accounting, auditing, finance, retirement benefits administration, actuarial science and institutional investing.
- Experience communicating with stakeholders, legislators, and the media in a governmental environment.