County Employees Retirement System
Actuary Committee – Special Meeting
May 7, 2025 at 2:00 PM ET
Live Video Conference/Facebook Live

AGENDA

1.	**Call to Order**	**Michael Foster**
2.	**Opening Statement**	**Eric Branco**
3.	**Roll Call**	**Sherry Rankin**
4.	**Public Comment**	**Sherry Rankin**
5.	**Approval of Minutes* -- November 4, 2024**	**Michael Foster**
6.	**Forward Looking Return Expectations**	**David Lindberg** **Craig Morton** **Chris Tessman**
7.	**Review of Actuarial Assumptions**	**Danny White, GRS** **Janie Shaw, GRS**
8.	**ADJOURN**	**Michael Foster**

Committee Action May Be Taken

MINUTES OF MEETING
COUNTY EMPLOYEES RETIREMENT SYSTEM
SPECIAL CALLED
ACTUARIAL COMMITTEE MEETING
NOVEMBER 4, 2024, AT 12:30 P.M.
VIA LIVE VIDEO TELECONFERENCE

At the Special Called Meeting of the Actuarial Committee of the County Employees Retirement System Board of Trustees held on November 4, 2024, the following members were present: Michael Foster (Chair), Dr. Merl Hackbart, George Cheatham, Jerry Powell, and Dr. Patricia Carver. Staff members present were CERS CEO Ed Owens, III, Ryan Barrow, Rebecca Adkins, Erin Surratt, Victoria Hale, Michael Lamb, Connie Davis, Ashley Gabbard, Shaun Case, Sandy Hardin, and Sherry Rankin. Others present included Danny White, Janie Shaw, and Krysti Kiesel with GRS and Eric Branco with Johnson, Branco and Brennan, LLP.

1. Mr. Foster called the meeting to order.

2 Mr. Branco read the Opening Statement.

3. Ms. Rankin took Roll Call.

4. Ms. Rankin noted no ***Public Comment*** was submitted.

5. Mr. Foster introduced agenda item ***Approval of Minutes – June 26, 2024*** *(Video 00:08:00 to 00:08:40)*. A motion was made by Mr. Powell and seconded by Dr. Hackbart to approve the minutes as presented. The motion passed unanimously.

6. Mr. Foster then introduced agenda item ***Draft 2024 Actuarial Valuation*** *(Video 00:08:40 to 00:56:06).* Mr. Foster introduced Ms. Shaw, Mr. White, and Ms. Kiesel with GRS, who presented a summary of the 2024 Valuation Results and answered questions posed by the Board members. In closing, Ms. Shaw noted last year's increase in active membership and payroll is a positive signal for the System and its participating

employees. She emphasized the importance of maintaining the current funding policy to continue improving the System's financial security.

Following discussion, a motion was made by Mr. Cheatham and seconded by Mr. Powell to accept the 2024 Actuarial Valuation as presented and to forward it to the CERS Board for approval. The motion passed unanimously.

7. There being no further business, Mr. Foster requested a motion to ***adjourn*** the meeting. A motion to adjourn was made by Dr. Hackbart. Mr. Powell seconded the motion, and the motion passed unanimously.

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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 Actuarial Committee of the County Employees Retirement System Board of Trustees, do certify that the Minutes of Meeting held on November 4, 2024, were approved on February 12, 2025.

____
Chair of the CERS Actuarial Committee

I have reviewed the Minutes of the November 4, 2024, Board of Trustees Meeting for content, form, and legality.

____
Executive Director
Office of Legal Services

Wilshire

Capital Market Return Assumptions Update

As of December 31, 2024

Wilshire

Forward Looking Return Expectations

- Capital market return assumptions are updated on a quarterly basis for new asset allocation studies
- Full assumption methodology is available in Wilshire's annual paper
- Here we show the 10-year forward expectations for return, risk, and yield of the CERS portfolio and underlying asset classes, as of 12/31/2024

10 Year Asset Class Assumptions as of 12/31/2024

	Return (%)	Risk (%)	Yield (%)
Public Equity	4.90	17.00	1.80
Private Equity	7.55	27.80	0.00
Core Fixed Income	5.20	4.75	5.65
Specialty Credit	7.35	9.05	9.75
Cash	3.60	0.75	3.60
Real Estate	6.40	13.95	2.85
Real Return	6.45	10.65	3.20
CERS Total Portfolio	**6.21**	**11.56**	**3.93**

Wilshire

Summary Changes - 4Q 2024

- Yield curve up across most of the maturity spectrum, except the very short term
  - Curve movements resulted in higher forecasts for fixed income asset classes
  - Slight decrease in spreads for investment grade and high yield bonds
- Yields on most real asset securities are up from last quarter; inflation assumption up at 2.35%
- Equity assumptions are up slightly; private equity up to the same degree due to higher leverage costs
- Equity risk premium worsened due to the larger increase in fixed income forecasts

	Total Return (%)			Risk (%)
Asset Class Assumption	Sep 2024	Change	Dec 2024	
Inflation	2.25	0.10	2.35	1.75
Cash Equivalents	3.40	0.20	3.60	0.75
Treasuries	4.05	0.65	4.70	5.00
Core Bonds	4.60	0.60	5.20	4.75
LT Core Bonds	4.70	0.65	5.35	9.90
High Yield Bonds	5.95	0.40	6.35	10.00
Private Credit	7.40	0.35	7.75	12.75
Global RE Securities	5.40	0.45	5.85	16.55
Private Real Estate	6.10	0.30	6.40	13.95
U.S. Stocks	4.25	0.10	4.35	17.00
Dev. ex-U.S. Stocks	5.25	0.10	5.35	18.00
Emerging Market Stocks	5.50	0.10	5.60	26.00
Private Equity	6.15	0.10	6.25	29.65
Global 60/40 (ACWI/U.S. Core)	5.05	0.25	5.30	10.75

	Relative Return (%)		
Implied Risk Premia	Sep 2024	Change	Dec 2024
Cash - Inflation	1.15	0.10	1.25
Treasury - Cash	0.65	0.45	1.10
Core - Treasury	0.55	-0.05	0.50
Long-Term Core - Core	0.10	0.05	0.15
High Yield - Core	1.35	-0.20	1.15
Global RESI - Core	0.80	-0.15	0.65
U.S. Stocks - Core	-0.35	-0.50	-0.85
Private Equity - U.S. Stocks	1.90	0.00	1.90
Implied Real Return (ACA - CPI)			
U.S. Stocks	2.00	0.00	2.00
U.S. Bonds	2.35	0.50	2.85
Cash Equivalents	1.15	0.10	1.25

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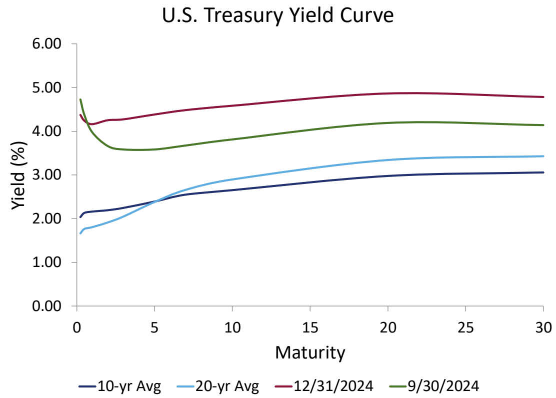
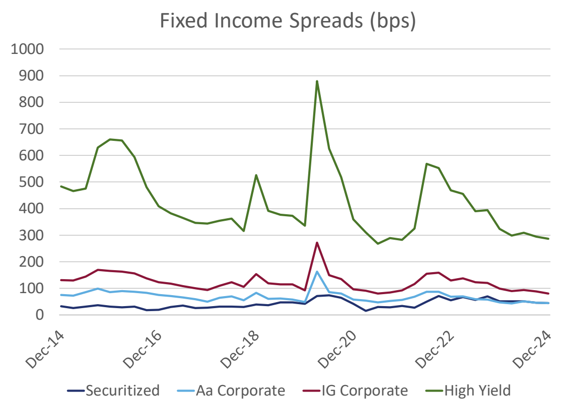
Wilshire

Fixed Income



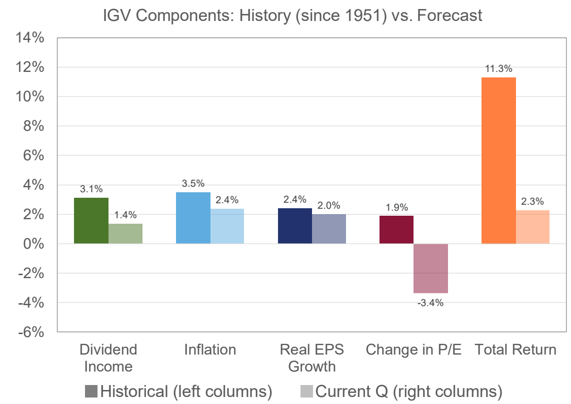


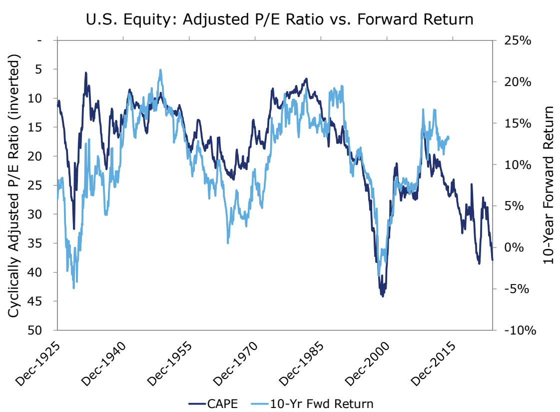
Inflation & Fixed Income		Sep 2024	Change	Dec 2024
Inflation	10-Year Treasury Yield	3.78	0.79	4.57
	10-Year Real Yield	1.60	0.64	2.23
	Breakeven Inflation	2.19	0.15	2.34
	Inflation Forecast	**2.25**	**0.10**	**2.35**
Cash	91-Day T-Bill Yield	4.73	(0.36)	4.37
	T-Bill Yield in 10 Yrs	3.25	0.25	3.50
	Cash Forecast	**3.40**	**0.20**	**3.60**
Treasury	U.S. Treasury Idx Yield	3.76	0.69	4.45
	Treasury Idx Yield in 10 Yrs	4.50	0.60	5.10
	Treasury Idx Forecast	**4.05**	**0.65**	**4.70**
	U.S. LT Treasury Idx Yield	4.17	0.68	4.86
	LT Treasury Idx Yield in 10 Yrs	4.30	0.61	4.91
	LT Treasury Idx Forecast	**4.15**	**0.70**	**4.85**
Spread	U.S. Corporate Idx OAS	0.89	(0.09)	0.80
	Corporate Idx OAS in 10 Yrs	1.48	(0.00)	1.48
	Corporate Idx Forecast	**5.05**	**0.60**	**5.65**
	U.S. Core Bond Forecast	**4.60**	**0.60**	**5.20**
	U.S. LT Core Bond Forecast	**4.70**	**0.65**	**5.35**
	U.S. High Yield Idx OAS	2.95	(0.08)	2.87
	High Yield Idx OAS in 10 Yrs	4.92	(0.00)	4.91
	High Yield Bond Forecast	**5.95**	**0.40**	**6.35**

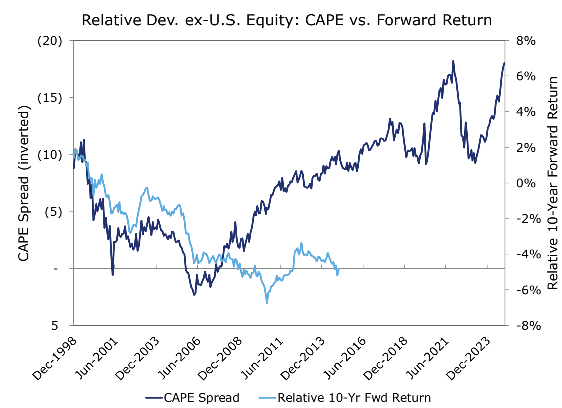
Wilshire

Equity Markets

Equity: Public & Private		Sep 2024	Change	Dec 2024
Equity	DDM	6.40	0.15	6.55
	IGV	2.20	0.10	2.30
	CAPE	2.35	(1.25)	1.10
	U.S. Equity Forecast	**4.25**	**0.10**	**4.35**
	Dev-ex-US Equity Forecast	**5.25**	**0.10**	**5.35**
	EM Equity Forecast	**5.50**	**0.10**	**5.60**
Private	Cost of Debt (Public)	5.35	0.50	5.85
	Cost of Debt (Private)	7.35	0.20	7.55
	Private Market Basket Forecast	**6.15**	**0.10**	**6.25**







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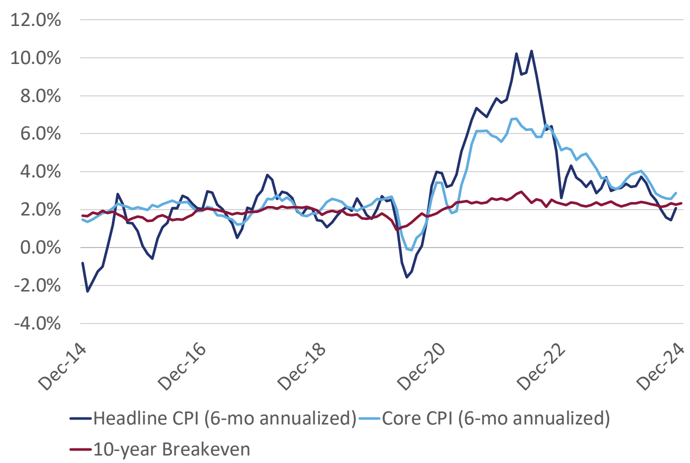
Real Assets

- Inflation assumption of 2.35% is up and approximately equal to breakeven
- Public real asset yields are mostly up; assumed cap rate in private real estate is up, as well
- Commodity assumption is up, slightly, as are other public real assets

Asset Class Assumption	Total Return (%) Sep 2024	Change	Dec 2024	Risk (%)
U.S. TIPS	4.00	0.70	4.70	6.00
Global RE Securities	5.40	0.45	5.85	16.55
Private Real Estate	6.10	0.30	6.40	13.95
Commodities	4.80	0.05	4.85	16.00
Inflation	2.25	0.10	2.35	1.75

Inflation: Actual & Expected



	Real Assets	Sep 2024	Change	Dec 2024
Listed	Inflation Capture (75%)	1.70	0.05	1.75
	REIT Yield	3.58	0.38	3.96
	Midstream Energy Yield	5.35	(0.66)	4.69
	Global Infrastructue Yield	3.55	0.16	3.71
Private	Real Estate Cap Rate	4.50	0.15	4.65
	Cost of Debt (Private)	6.15	0.65	6.80
	Infra. v RE Cap Rate Differential	(0.03)	(0.22)	(0.25)
	Infra. Leverage / RE Leverage	2.5	0.0	2.5

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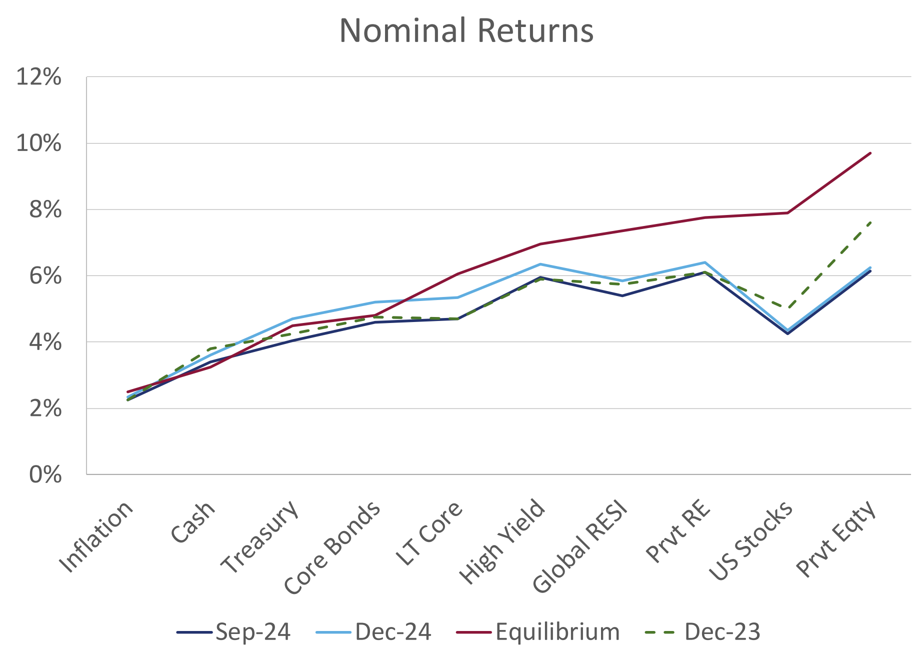
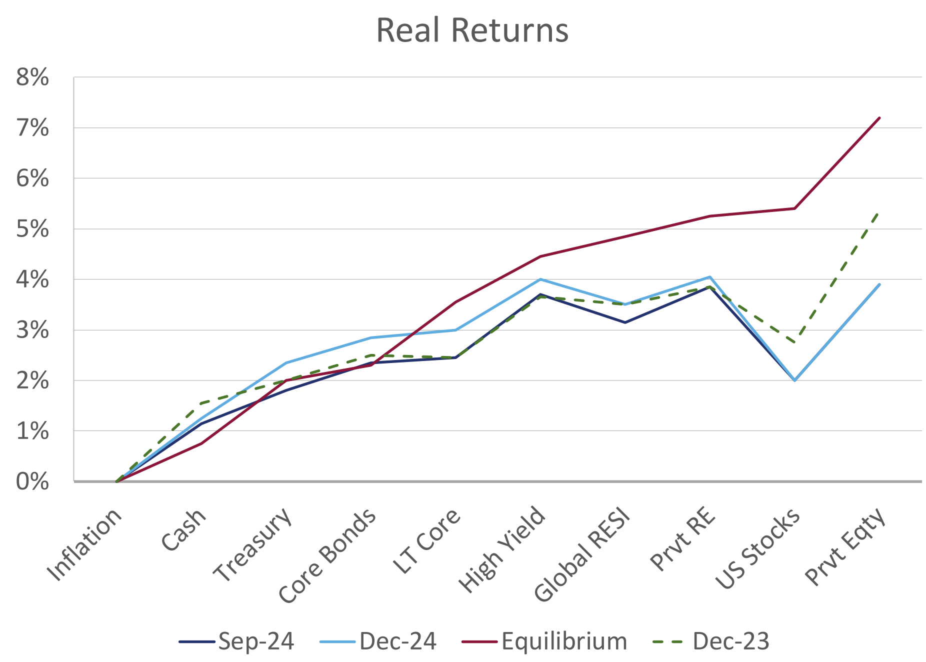
Equilibrium Assumptions

Current versus Equilibrium Asset Class Assumptions





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Important Information

P: 469.524.0000 | www.grsconsulting.com

May 2, 2025

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

Re: Economic Assumptions for Use in the Upcoming June 30, 2025 Actuarial Valuation

Dear Trustees of the Board:

Each year the actuarial committee reviews the principal economic assumptions (i.e. price inflation, investment return assumption, and payroll growth) for use in the actuarial valuation. Economic and demographic assumptions used in an actuarial valuation should be representative of the System's expected long-term experience. These assumptions are not intended to consistently model short-term (e.g. the next two to five years) experience, but are supposed to be representative of expected long-term trends. As a result, short-term experience may differ significantly from the long-term assumption used in an actuarial valuation.

The three primary economic assumptions used in an actuarial valuation include the price inflation, investment return, and payroll growth assumption. The following analysis and exhibits provide our recommended assumptions to be adopted by the Board for use in the June 30, 2025 actuarial valuation and rationale for each recommendation.

Assumption	June 30, 2024 Valuation Adopted Assumption	June 30, 2025 Valuation Recommended Assumption
Price Inflation	2.50%	2.50%
Investment Return	6.50%	6.50%
Payroll Growth[1]	2.00%	2.00%

[1] The recommended payroll growth assumption includes an underlying assumption that future active membership will remain relatively unchanged.

Price Inflation Assumption

Benefits provided to members in CERS are not explicitly impacted by the actual change in price inflation. The current price inflation assumption is 2.50% and was increased from 2.30% in the last experience study conducted in 2022. We reviewed several sources that provide various

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CERS Board of Trustees
May 2, 2025
Page 2

perspectives of forward-looking inflation expectations and recommend the continued use of a 2.50% inflation assumption in the 2025 actuarial valuation.

We recognized that actual inflation as measured by CPI has been much higher than the current 2.50% assumption during the last 48 months. Additionally, many investment professionals and economists expect that inflation volatility and risk have the potential to remain elevated above historical levels for the next 12 to 24 months. However, given the long-time horizon of an actuarial valuation, the Federal Reserve's conviction to return to a 2.00% target inflation, and the relative immateriality of this assumption in the actuarial valuation, we believe a 2.50% inflation assumption continues to be reasonable for this purpose. Please see Exhibit 1 for more information on the comparison of future inflation expectations.

Investment Return Assumption

The investment return assumption is perhaps the most important and most subjective assumption used in an actuarial valuation. It represents the expected long-term return on plan assets and is used to discount future expected benefit payments to the valuation date in order to determine the liabilities of the plan. The investment return assumption was increased from 6.25% to 6.50% as of the June 30, 2023 actuarial valuation and remained at 6.50% for the June 30, 2024 actuarial valuation.

We believe the most appropriate approach in identifying a reasonable investment return assumption is to understand forward-looking expectations developed by professional investment consulting firms. To do this, we have analyzed CERS's investment policy with the capital market assumptions from eight nationally recognized investment consultants, including Wilshire Advisors which is CERS's investment consultant. The asset allocation used in this analysis is based on the target asset allocation outlined in the CERS February 26, 2025 investment committee material.

Also, since investment consultants update their assumptions on at least an annual basis, we also compared their expectations developed in 2025, to their prior two-year assumptions using the same target asset allocation to identify and isolate the change in return expectations due to changes in capital market expectations. Attached is Exhibit 2 that provides this comparison for each investment consulting firm for 2023, 2024, and 2025.

It is our recommendation that the CERS Board adopt the continued use of a 6.50% investment return assumption for the valuation of the pension and insurance funds at June 30, 2025. Given the methodology used by the investment consultants to develop their expectations, it is possible their expectations for the shorter term revert higher as the economy enters an expected increasing interest rate setting.

CERS Board of Trustees
May 2, 2025
Page 3

Payroll Growth Assumption

The payroll growth assumption is only used in the development of the amortization cost component of the contribution rate. When emerging membership payroll changes are consistent with the payroll growth assumption, the amortization cost will remain relatively constant as a percentage of payroll (assuming there are no other gains or losses). However, if the future change in payroll is consistently less (more) than assumed, then the amortization cost will gradually increase (decrease) as a percentage of membership payroll. Note, due to the actuarial backloading in the amortization payments, there is greater financial risk to having a payroll growth assumption that is too high versus too low.

The change in membership payroll is primarily driven by underlying changes in salary increases for individual members as well as the number of members earning benefits in the System. There are many external and economic factors that can influence the change in both of these underlying elements. The assumed rate of salary increases individuals receive are based on long-term expectations of average increases across all economic cycles that include times of expansion and contraction. Similarly, when reviewing the change in active membership headcount, our analysis considers the inherent long-term nature of this assumption across all economic cycles.

The current payroll growth assumption is 2.00% of pay for the Non-Hazardous and Hazardous funds (pension and insurance) and has been the adopted assumption since 2017. In other words, the actuarial valuation assumes that total membership payroll will grow by 2.00% each year for the development of the annual amortization cost. Underlying this assumption is an implicit assumption that the active membership headcount will relatively unchanged in future years. Note, that in any given year, active headcount could increase or decrease but as long as membership payroll continues to change as assumed, the amortization cost as a percentage of pay will not change due to changes in payroll.

Exhibit three provides a ten-year historical experience of the change in membership headcount and membership payroll. While the number of active members and membership payroll has noticeably increased over the last three years, we believe it is reasonable to continue to assume that active membership headcount will remain relatively constant in future years for both the Non-Hazardous and Hazardous funds, as the economic conditions continue to remain steady and improving for local government entities that participate in CERS. As a result, we also believe the current 2.00% payroll growth assumption is reasonable and we recommend the Board adopt a 2.00% payroll growth assumption for use in the June 30, 2025 actuarial valuation for both the Non-Hazardous and Hazardous plans. Keeping the payroll growth assumption at 2.0% will also not increase the System's future contribution risk.

CERS Board of Trustees
May 2, 2025
Page 4

Closing Comments

This analysis was conducted in accordance with generally accepted actuarial principles and practices. We believe these recommended assumptions comply with Actuarial Standard of Practice No. 27, Selection of Economic Assumptions for Measuring Pension Obligations.

All 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 contained herein. In addition, all of the undersigned are experienced in performing valuations for large public retirement systems.

Sincerely,

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

Janie Shaw, ASA, EA, MAAA
Consultant

Krysti Kiesel, ASA MAAA
Consultant

Enclosure

Exhibit 1.
Comparison of Price Inflation Assumption to Sources of Forward-Looking Expectations

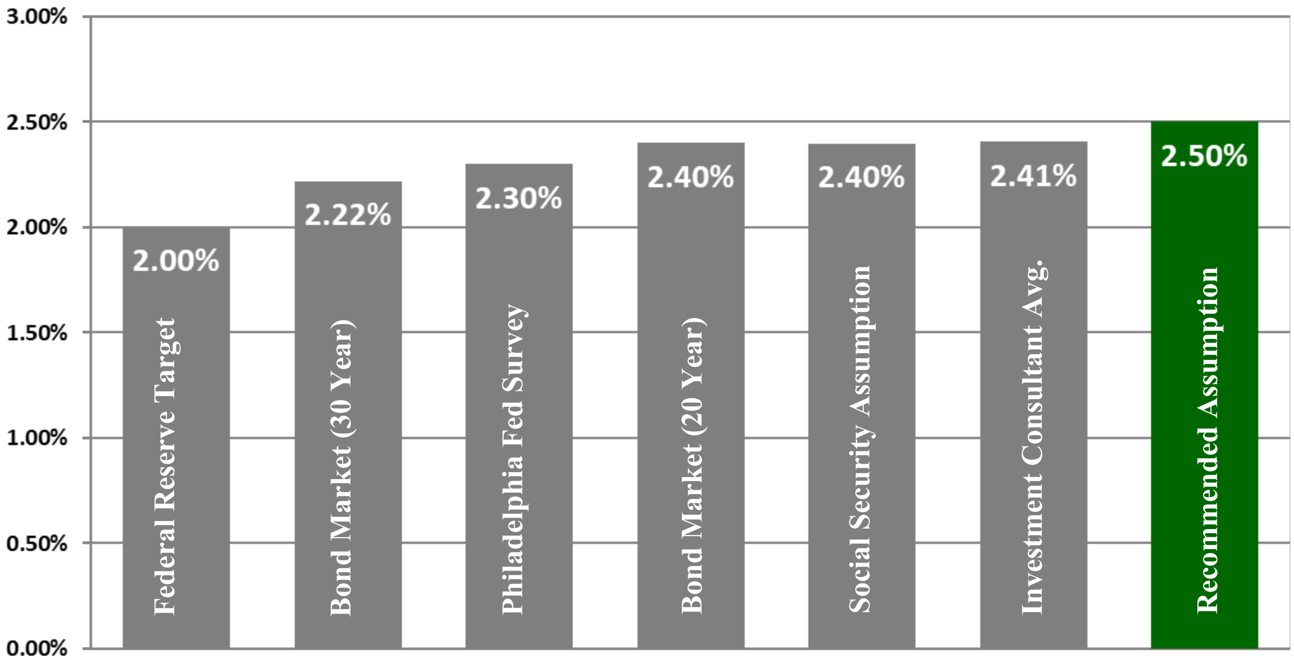


Exhibit 2.
Review of Forward-Looking Capital Market Expectations Mapped CERS's Target Investment Allocation February 2025

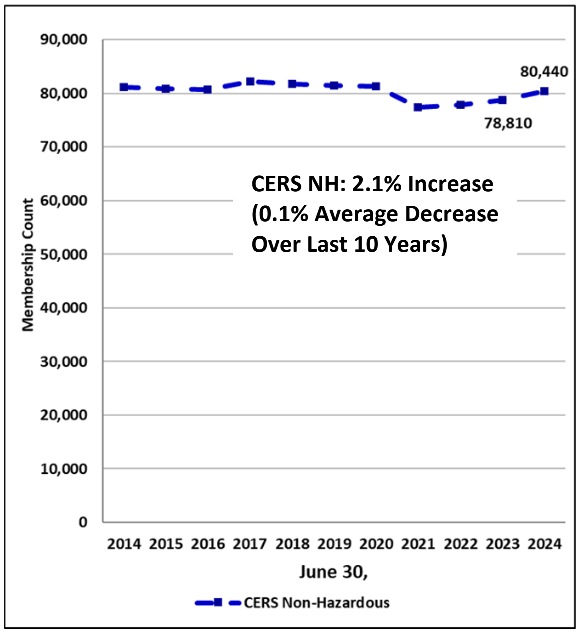
	Investment Consultant	50th Percentiale Expected Return (Geometric) 2025	2024	2023	Probability of Exeeding 6.50% 2025	2024	2023
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
7 to 10 Year Expectations	1	6.2%	6.5%	7.3%	45%	50%	58%
	2	6.4%	6.6%	7.0%	49%	54%	56%
	3	6.4%	5.8%	6.5%	49%	43%	50%
	4	6.8%	7.1%	7.2%	53%	56%	57%
	5	6.8%	6.6%	6.3%	54%	51%	48%
	6	7.1%	7.1%	7.5%	55%	56%	60%
	7	7.1%	7.4%	7.0%	56%	59%	55%
	8	7.3%	7.0%	7.4%	59%	55%	60%
20 to 30 Year Expectations	1	6.2%	6.2%	6.3%	45%	50%	58%
	2	7.3%	7.3%	7.6%	49%	54%	56%
	3	7.4%	7.4%	7.6%	49%	43%	50%
	4	7.5%	7.4%	7.3%	53%	56%	57%
	5	7.6%	7.2%	7.3%	54%	51%	48%
7-10 Year Expectation Avg:		6.8%	6.8%	7.0%	52%	53%	55%
20-30 Year Expectation Avg:		7.2%	7.1%	7.2%	50%	51%	54%

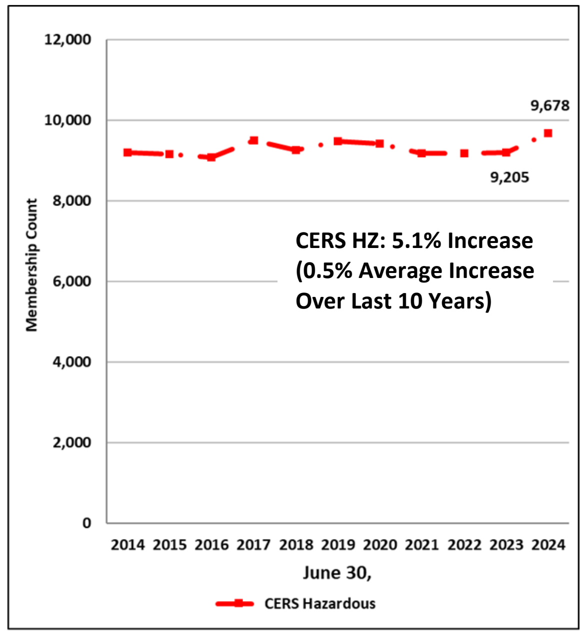
The primary purpose of performing this analysis using multiple investment consulting firms is to quantify the possible difference in forward looking return expectations within the professional investment community. We have provided this analysis based on information from the following investment consulting firms:

- Aon
- BNY Mellon
- Callan
- Cambridge
- Mercer
- NEPC
- RVK
- Wilshire Associates

Exhibit 3.
Review of Historical
Change in Active Membership Headcount and Payroll

Change in Active Membership Headcount





Change in Membership Payroll