City of Bristol
Retirement Board

INFORMATION TO ACCESS THIS MEETING
https://bristolct-gov.zoom.us/j/84609765583?pwd=t4wn0ulSsTxK4zp47Nejq3A4buAD40.1
Meeting ID: 846 0976 5583
Passcode: 882504

The regular meeting will be held on Thursday, February 13, 2025, at 5:00 PM. in City Hall Council Chambers, 111 North Main Street, Bristol, CT.

AGENDA

1. Call to Order
2. Public Participation
3. Approval of Minutes
   a. Jan.25-Minutes
4. Treasurer's Report
   a. Treasurer's Report January 2025
5. Discussion and action on FY26 Retirement Fund Budget
   a. Retirement Fund Budget- FY26
6. Consent Agenda
   a. Retirements February 2025
7. Milliman Actuarial Valuation Presentation
   a. Pension Valuation Summary
8. Investment Review- Beirne Wealth Consulting, LLC.
   a. General Pension Fund
9. Any other business proper to come before meeting

10. Adjournment

PER ORDER OF THE CHAIRPERSON
Thomas Barnes, Jr

MEETING OF THE GENERAL

GOVERNMENT RETIREMENT BOARD

January 09, 2025

A Regular meeting of the General Government Retirement Board was held on **January 09, 2025 at 5:00 p.m.** in the City Hall Council Chamber,1st floor, City Hall,111 North Main Street, Bristol, CT. Members present: Chairman Tom Barnes Jr., Vice Chairman Robert Parenti, Comptroller Diane M. Waldron, Council member Jacqueline Olsen, Commissioners William Veits, David Maikowski, Tom DeNoto, David Butkus, Frank Rossi and Mathew Ragaini. Absent: Mayor Caggiano and Commissioner Peter Dauphinais.

Also present: John Oliver Beirne, from Beirne Wealth Consulting.

1. **Call to Order**

   Pledge of Allegiance

The meeting was called to order at 5:00 p.m. by Chairman Tom Barnes Jr.

2. **Public Participation**

None.

3. **Approval of the minutes**

   a. **General Government Retirement Board – Regular Meeting on November 14, 2024.**

A motion was made by council member Olsen and seconded by Comptroller Waldron and it was unanimously voted to:

> "Approve the minutes of the General Government Retirement Board Regular Meeting of November 14, 2024 and place them on file."

4. **Treasurers Report**

   a. **November 2024.**
   b. **December 2024.**

A motion was made by Commissioner DeNoto, and seconded by Commissioner Veits and it was unanimously voted to:

> "Accept the Treasurer's Reports for November and December 2024 and place them on file."

5. Consideration to approve a rescission request of a vested retirement pension from former employee Marriya Connelly approved by the Retirement Board on March 10, 2022 and to refund employee contributions plus interest

A motion was made by Commissioner Maikowski and seconded by Comptroller Waldron and it was unanimously voted to:

> "Move item 5 to discussion."
>
> Comptroller Waldron proceeded to clarify to the Board the request from former employee Marriya Connelly, was to rescind her pension that was previously approved by the Board in May of 2022. She explained this is a vested benefit that the former employee has not started to collect yet. The employee would like to rescind her decision and instead get a refund of employee contributions including interest. Comptroller Waldron spoke to her and explained the impact this decision would have. Marriya understood that by getting a refund, she is giving up payments for life.
>
> After a brief discussion, the Board voted and approved Marriya Connelly's rescission and the payment of her refund of contribution including interest.
>
> All members present were in favor.

6. Consent Agenda.

a. Consideration of a request to approve the Normal Retirement with 50% Contingent Annuitant from Laurie Carter, Bristol Comptrollers Department, Local 233 Union effective December 03, 2024 with an annual pension amount of 34,799.02 or $2,899.92 monthly.

b. Consideration of a request to approve the Normal Retirement from Brenda Coppola, Bristol Board of Education, BESA Union effective November 28, 2024 with an annual pension amount of $37,096.32 or $3,091.36 monthly.

c. Consideration of a request to approve the Normal Retirement from Mary Jo Pastyrnak, Bristol Board of Education, BESA Union effective December 07, 2024 with an annual pension amount of $31,929.40 or $2,660.78 monthly.

A motion was made by Commissioner Butkus and seconded by Commissioner Veits and it was unanimously voted to:

"Approve Consent Agenda Items 6a through 6c."

7. Investment Review – Beirne Wealth Consulting, LLC.

John Oliver addressed the board and briefly reviewed the economy. He mentioned that despite the fact that interest rates were cut by the Federal Reserve, rates have increased on 10-year bonds. This is not a great indicator for equity markets or markets in general. This means that there is anticipated inflation in the system.

John Oliver will have a complete third quarter report by the next meeting. He also updated the board on a capital call and distribution from Longford fund III. He suggested having a manager's meeting scheduled during this first quarter. John would like to review the investment policy content possibly towards the end of this year.

John Oliver reviewed the portfolio and updated the board members on where the fund is today. The total portfolio market value is $807,901,380.

Credit - market value $157,894.391 = 19.54% of portfolio.

- High Quality Credit market value $78,773,423 = 9.75% of portfolio.
- Multi-Credit market value $79,120,969 = 9.79% of portfolio.

Equity - market value $374,151,051 = 46.31% of portfolio.

- Public Equity market value $298,886,597 = 37.00% of portfolio.
- Private Equity market value $75,264,454 = 9.32% of portfolio.

Alternatives - market value $241,569,831 = 29.90% of portfolio.

- Real Estate market value $66,407,316 = 8.22% of portfolio.
- Commodities market value $5,149,256 = .64% of portfolio.
- Differentiated Return Stream market value $170,013,259 = 21.04% of portfolio.

Cash - market value $34,286,106 = 4.24% of portfolio.

8. Any other business proper to come before meeting.

The possibility of going to a bid for actuarial services was brought up by Comptroller Waldron and Chairman Barnes. It has been five years since the last bid took place. Milliman's contract was for three years with the option to extend it by two years. The extended years concluded with the most recent 7/1/24 valuation.

Comptroller Waldron did some comparisons among other pension funds similar in size to Bristol, and found Bristol's current fees were less than some of the other pension funds. A change is not necessary and Comptroller Waldron explained the contract can be extended with Milliman. Currently the fee for the base valuation is and Milliman provided a fee increasing gradually to $40,500 for the next few years, which is not a significant increase.

Commissioner Rossi added that five years is too soon to be switching firms and Comptroller Waldron agreed with him. Chairman Barnes requested a motion to be made from a board member to extend Milliman's contract.

A motion was made by Comptroller Waldron and seconded by Commissioner Maikowski and it was unanimously voted to:

"Extend the contract with Milliman through Fiscal Year 2028, including the option of a two-year extension after FY2028, and to ask the Board of Finance to waive the bid for these services."

At 5:21p.m. a motion was made by Commissioner DeNoto and seconded by Commissioner Veits and it was unanimously voted to:

"Adjourn."

Respectively submitted,

Diane M. Waldron
Comptroller and Secretary, Retirement Board

Treasurer's Report
Police, Firefighters, Retirement System Fund
January 2025

	Police 710	Firefighter 711	Retirement 712/715	Total
Pension Funds in Pension Bank Accounts				
CASH & CASH EQUIVALENTS: 01/01/2025	$ 87,001.96	$ 178,498.06	$ 399,559.63	$ 665,059.65
RECEIPTS:				
Employee Contributions City/BDA/WPC	43,562.89	20,528.89	77,956.75	142,048.53
Employee Contributions BOE			165,457.93	165,457.93
Employee Contributions Health Dept			18,747.21	18,747.21
Employee Contributions Water Dept			14,303.09	14,303.09
Employer Contributions BOE				-
Employer Contributions City/BDA/WPC				-
Employer Contributions Water Dept				-
Employee Contributions Buy Back			208.80	208.80
Employee Contributions Fire Dept Healthcare 1.00%			6,842.95	6,842.95
Employee Contributions Police Healthcare 1.625%,1.875%			14,521.23	14,521.23
Employee Contributions Retiree Healthcare -Health Dept - 1.5%			4,462.73	4,462.73
Employee Contributions Retiree Healthcare 233 - 1.5%, 1.75%			9,896.71	9,896.71
Employee Contributions Retiree Healthcare BPSA - 1.5%, 1.75%			7,027.12	7,027.12
Employee Contributions Retiree Healthcare - 1338 -1.5%, 1.75%			10,854.92	10,854.92
Employee Contributions Retiree Healthcare -NBAR - 1.5%, 1.75%			2,799.27	2,799.27
Employee Contributions Retiree Healthcare -BOE NBAR / 818- 1.5%			8,639.79	8,639.79
Miscellaneous Income			-	-
Interest	36.80	79.58	185.38	301.76
Total Receipts, Contributions and Interest	43,599.69	20,608.47	341,903.88	406,112.04
EXPENDITURES:				
Pensions Paid *P , F, R .... **total retirees***	756,281.88	429,792.94	1,653,025.01	2,839,099.83
Refund of Contributions / Interest	-	-	65,905.45	65,905.45
Fiduciary Insurance	-	-	-	-
Legal- Robinson & Cole	-	-	-	-
Actuary- Milliman	-	-	-	-
Accountant/Bookkeeper Salaries **(Note 1)**	3,938.76	3,938.76	3,938.77	11,816.29
Comptroller/Assistant to Comptroller Salaries **(Note 1)**	2,685.31	2,685.31	2,685.30	8,055.92
Postage **(Note 1)**	32.48	31.51	153.87	217.86
Other Expenses / (Revenue) (Tyler Technologies)			-	-
Total Expenditures	762,938.43	436,448.52	1,725,708.40	2,925,095.35
CURRENT MONTH, Surplus/(deficit)	(719,338.74)	(415,840.05)	(1,383,804.52)	(2,518,983.31)
TRSFR IN-FIDELITY TO PENSION	760,000.00	460,000.00	1,450,000.00	2,670,000.00
CASH & CASH EQUIVALENTS: 1/31/2025 (Beginning Bal+Current Month+Transfer in)	$ 127,663.22	$ 222,658.01	$ 465,755.11	$ 816,076.34

Pension Trust Funds

Market Value at July 1, 2023 **(Note 2)**	$ 733,844,047
Actuarial Value at July 1, 2023 **(Note 2)**	$ 744,150,539
Accrued Liability	$ 601,283,176
Pension Surplus (Unfunded Liability)	$ (142,867,363)
Funded Ratio= Actuarial Value divided by Accrued Liability	123.8%

Note 1: Amount will be invoiced quarterly by the Comptroller's office to the Pension fund.
Note 2: Source: Milliman Actuarial Valuation as of July 1, 2021 projected for fiscal year 2022-23, final report dated February 28, 2022.

Comptroller's Office | Phone: 860.584.6130

Memorandum

To:	Board of Finance
From:	Diane M. Waldron, Comptroller
Re:	Retirement Fund – Administrative Expenses FY26 Budget
Date:	February 10, 2025

Attached are two proposed budgets for Administrative Expenses for the Retirement Fund. Administrative Expenses include Wages; cost of Fiduciary insurance for the Retirement Board; Professional Fees for Milliman to perform actuarial services and provide GASB reporting for the audit; legal fees; Management Fees per Beirne Wealth's contract; and Custodial Fees.

As you know the city does not have dedicated full-time staff for the retirement fund but allocates portions of staff salaries from the Comptroller's and Treasurer's offices for various tasks that they perform. The amount of time devoted to the retirement fund has increased over the years and as such there is a proposal to increase the allocated time/salaries of staff who are working on retirement fund related issues.

The first budget totals $836,765 and is based on historical allocation of salaries from the Comptroller's and Treasurer's Offices as noted.

The second budget totals $860,655, an increase of $23,890. The recommended increase in the allocations are as follows;

- Allocation of 20% of the Budget and Finance Analyst salary to the retirement fund. More extensive reconciliation is required by this position as in the past the majority of it was performed by an outside agency which is no longer providing these services. The reconciliations are complex and requires a significant amount of time, especially during the audit, to compile all of the required documentation. In addition, the auditors have increased their testing and confirmation processes which also involves significant staff time.
- Allocation of 5% of the Deputy Treasure salary. This position prepares reports for the Retirement Board, ensures adequate funding for benefit payments and reconciles cash the accounts.
- The allocation percentage for the Bookkeeping Clerk remains the same at 20%, but there is a recommended increase in hours.

Please review the attached and any questions can be answered at the meeting.

Retirement Board Administrative Expenses Budget - FY 2025-2026

Account	Description		25-26 Budget
Regular Wages	15% Comptroller	29,000	70,400
	5% Assistant to the Comptroller	4,200	
	50% Treasury & Pension Coord	32,000	
	20% Bookeeping Clerk	5,200	
Postage			1,500
Fiduciary Insurance	Tracy Driscoll Insurance		45,000
Professional Fees	NCPERS - Membership	315	69,615
	Milliman - Pension Valuation & Report	37,700	
	Milliman - Benefit Statements	5,700	
	Milliman - GASB 68	3,800	
	Milliman - GASB 74/75	3,800	
	Milliman - OPEB Valuation (bi-annually)	5,800	
	Millman - budget ADC updates	2,500	
	Milliman - Misc Services	5,000	
	Robinson & Cole - Legal Advice	5,000	
Management Fees	Beirne Wealth Advisor Fees (inc. 3% COLA)		450,250
Custodial Fees	Investment Transactions/Activity		200,000
		TOTAL	**836,765**

Retirement Board Administrative Expenses Budget - FY 2025-2026

Wages Adjustment

Account	**Description**		**25-26 Budget**
Regular Wages	15% Comptroller	29,000	94,290
	5% Assistant to the Comptroller	4,200	
	20% Budget & Finance Analyst	14,690	
	5% Deputy Treasuer	4,350	
	50% Treasury & Pension Coord	32,000	
	20% Bookeeping Clerk	10,050	
Postage			1,500
Fiduciary Insurance	Tracy Driscoll Insurance		45,000
Professional Fees	NCPERS - Membership	315	69,615
	Milliman - Pension Valuation & Report	37,700	
	Milliman - Benefit Statements	5,700	
	Milliman - GASB 68	3,800	
	Milliman - GASB 74/75	3,800	
	Milliman - OPEB Valuation (bi-annually)	5,800	
	Millman - budget ADC updates	2,500	
	Milliman - Misc Services	5,000	
	Robinson & Cole - Legal Advice	5,000	
Management Fees	Beirne Wealth Advisor Fees (inc. 3% COLA)		450,250
Custodial Fees	Investment Transactions/Activity		200,000
		TOTAL	**860,655**

CITY OF BRISTOL-GENERAL CITY RETIREMENT
BENEFIT CALCULATION

[redacted]

Department: BOE
Group : BESA Union

Employee: **Vanessa Janick**
Soc.Sec: "On File"

Date of Retire: 1/4/2025 90 rule:80/85

Normal Retirement

50% Contingent Annuitant

CALENDAR YEAR	GROSS EARNINGS	
2025	$ 27,052.23	*
2024	$ 62,071.83	*
2023	$ 60,331.64	*
2022	$ 59,441.18	*
	$ (488.56)	*
2021	$ 57,470.89	
2020	$ 57,705.28	
2019	$ 55,391.14	
2018	$ 55,315.84	
2017	$ 51,082.12	
2016	$ 51,668.64	

PENSION CALCULATION

Highest Three Years:

$ 27,052.23
$ 62,071.83
$ 60,331.64
$ 59,441.18
$ (488.56)

Calculation: $ 208,408.32

Sum Of Highest Three Years Divided By 3

= Average Annual Earnings

$ 208,408.32 x 1/3 =
$ 69,469.44

$	69,469.44	Average Annual Earnings
	x .0240	Percentage Factor
$	1,667.27	
x	25	Years of Service
$	41,681.75	Annual Pension: Normal Retirement
	0.88	50% Contingent Annuitant Factor
$	36,679.94	Annual Pension: Normal Retirement w/ CA
$	3,056.66	Monthly Pension: Normal Retirement

Comments: City Retirement Benefits are Exclusive of Social Security Benefits.
2025 Gross Wages include an accrual payout of $22,444.83

Prepared by: Lindsey Schoffnick Date: 1/30/2025

Reviewed by: Robin A Manuele Date: 2/7/25

Approved by: Diane M Waldron Date: 2/10/25

Board Approved: ____________ Date: ____________

JanickVanessaFinalNormal2025

CITY OF BRISTOL-GENERAL CITY RETIREMENT
BENEFIT CALCULATION

[redacted]

Department:	Personnel	Employee:	**Linda Milia**		
Group :	Non - Bargaining	Soc.Sec:	**"On File"**	Date of Retire:	1/11/2025 88 rule:80/85

Normal Retirement **3 Month Rule**

CALENDAR YEAR	GROSS EARNINGS			PENSION CALCULATION
2025	$ 69,339.49 *			Highest Three Years:
2024	$ 116,857.98 *			
2023	$ 110,785.63 *		$	69,339.49
2022	$ 101,769.68 *		$	116,857.98
	$ (2,788.21) *		$	110,785.63
2021	$ 98,599.90		$	101,769.68
2020	$ 98,279.31		$	(2,788.21)
2019	$ 96,635.25			
2018	$ 96,318.07	Calculation:	$	395,964.57
2017	$ 92,040.71			
2016	$ 87,331.35			Sum Of Highest Three Years Divided By 3

= Average Annual Earnings

$	395,964.57	x 1/3 =
$	131,988.19	
$	131,988.19	Average Annual Earnings
	x .0240	Percentage Factor
$	3,167.72	
x	18	Years of Service
$	57,018.96	Annual Pension: Normal Retirement
$	4,751.58	Monthly Pension: Normal Retirement

Comments: City Retirement Benefits are Exclusive of Social Security Benefits.
2025 Gross Wages include an accrual payout of $61,197.60.

Prepared by: Lindsey Schaffer Date: 1/30/2025

Reviewed by: Robin O Manuel Date: 2/7/25

Approved by: Diane M Waldron Date: 2/10/25

Board Approved: ______ Date: ______

MiliaLindaFinalNormal2025

City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

AGENDA

The factors that determine the plan's liability

- The plan's membership
- The benefits provided by the plan
- Actuarial assumptions about what will happen in the future

The plan's assets

- Investment performance
- Changes in asset balances
- How the portfolio is invested

Setting the contribution level

- Systematic plan for setting aside funds so benefits are secure
- Balancing the costs borne by different generations of taxpayers
- Minimizing year-over-year volatility

Opening up the actuarial 'black box'

- Answering your questions
- Giving you a full appreciation of the financial dynamics of your plan
- Helping you to make sound decisions

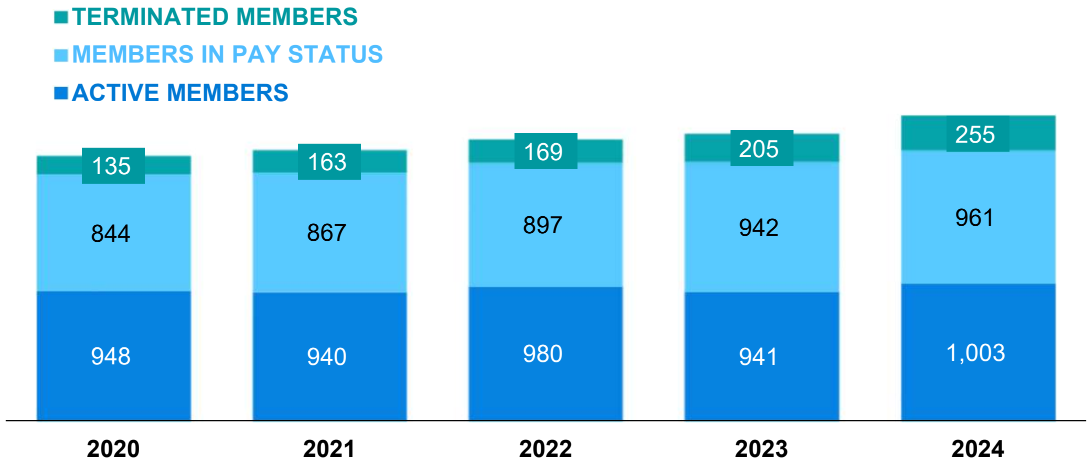
Key Takeaways

- ✓ Assets earned 11.95%
- ✓ Funded ratio moved from 123.8% to 123.0%
- ✓ $5.4M (<1%) unexpected increase in Accrued Liability; primary drivers were compensation increases, new hires and retiree mortality, offset by higher than expected turnover
- ✓ City contributions may be needed as soon as FYE 2027; will depend on asset performance, other factors

City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

MEMBERSHIP

HISTORICAL HEADCOUNTS



TERMINATED MEMBERS ON JULY 1, 2024

Count due a vested benefit at retirement	53
Count due a refund of member contributtions	202

MEMBERS IN PAY STATUS ON JULY 1, 2024

	Retirees	Disabled	Beneficiaries
Count	861	23	77
Average Age	71.8	66.2	77.7
Total Annual Benefit	$31,953,295	$831,524	$1,880,542
Average Annual Benefit	37,112	36,153	24,423

ACTIVE MEMBERS ON JULY 1, 2024

	Years of Service							
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25	23							23
25-29	79	7						86
30-34	72	32	8					112
35-39	58	30	34	5				127
40-44	60	30	12	25	8			135
45-49	43	26	13	22	17	1		122
50-54	43	22	10	25	15	9	4	128
55-59	24	25	12	35	27	7	7	137
60-64	18	16	13	24	15	8	4	98
65+	7	8	5	6	5	1	3	35
Total	427	196	107	142	87	26	18	1,003

Average Age
45.3

Average Service
9.6

Total Payroll
$64,812,371

Average Payroll
$64,619

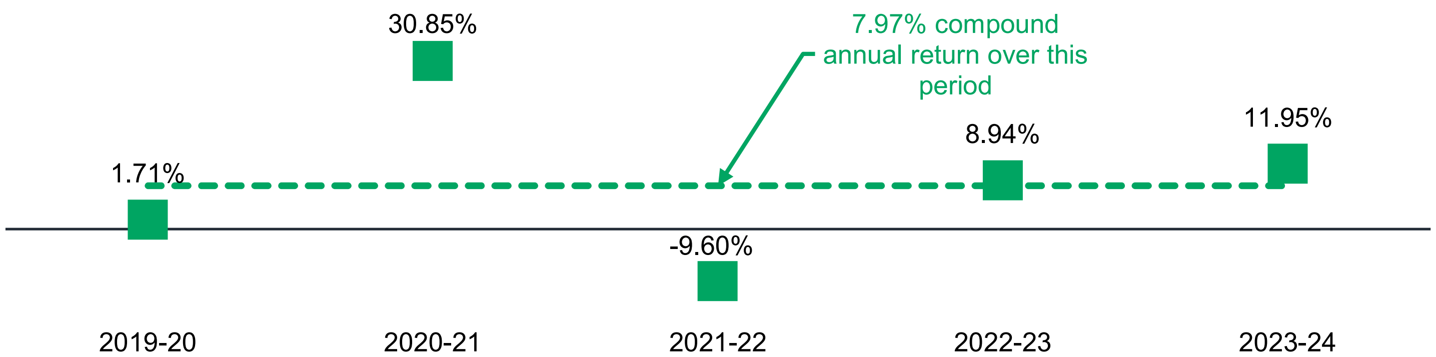
Active Member Count By Group	
City	796
Fire	86
Police	121
Total	1,003

City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

ASSETS

HISTORICAL INVESTMENT RETURNS

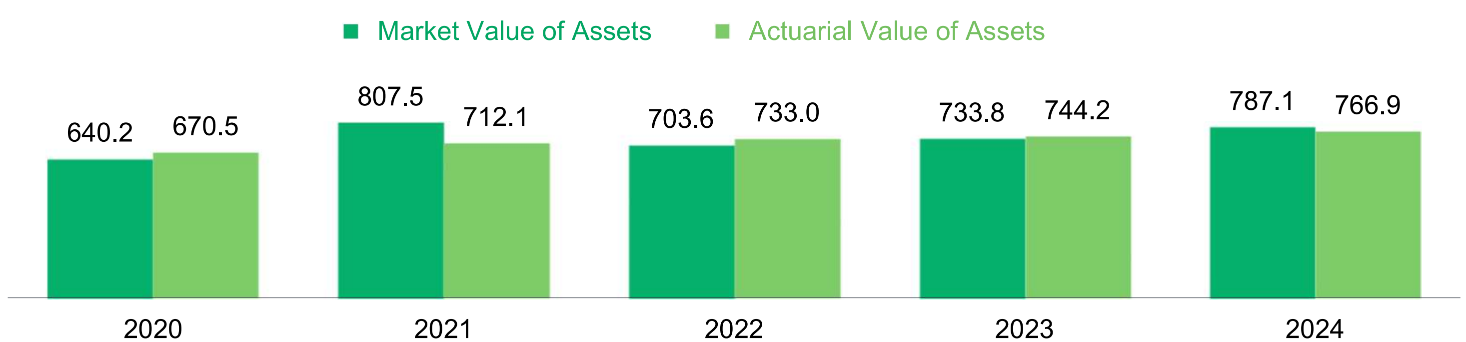
2023-24 saw a year of good market performance following last year's favorable performance, with a rate of return of 11.95% on a Market Value basis. The chart below illustrates the ups and downs in the plan's investment returns.



MARKET VALUE, 07/01/2023	**$733,844,047**
City Contributions	0
Member Contributions	3,166,788
Net Investment Income	85,765,941
Benefit Payments	(35,695,528)
Administrative Expenses	0
MARKET VALUE, 07/01/2024	**787,081,248**
Expected rate of return	6.50%
Expected investment income	46,650,930
Market (gains)/losses	(39,115,011)

HISTORICAL ASSET BALANCES ($ millions)

In order to dampen the volatility of the market and prevent large swings in annual contributions, we smooth investment gains or losses over five years. The resulting Actuarial Value of Assets is shown alongside the Market Value of Assets in the chart below.

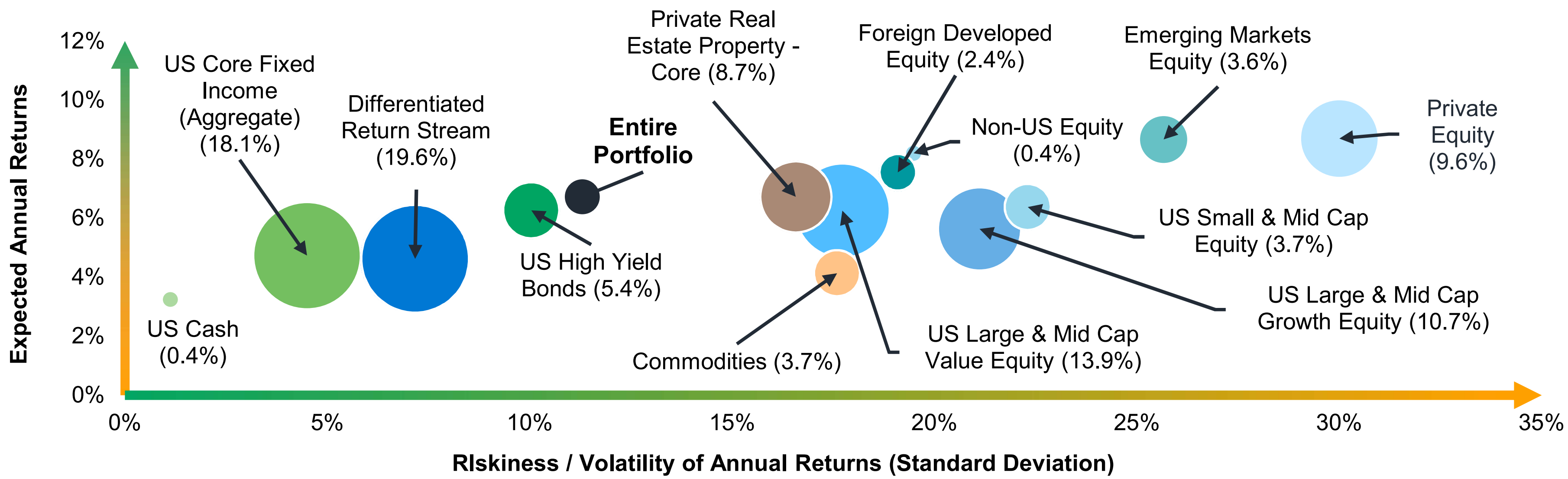


As of July 1, 2024, the Actuarial Value is less than the Market Value by $20.2 million. This figure represents investment gains that will be gradually recognized over the next five years. This process will exert downward pressure on the City's contribution, unless there are offsetting market losses.

City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

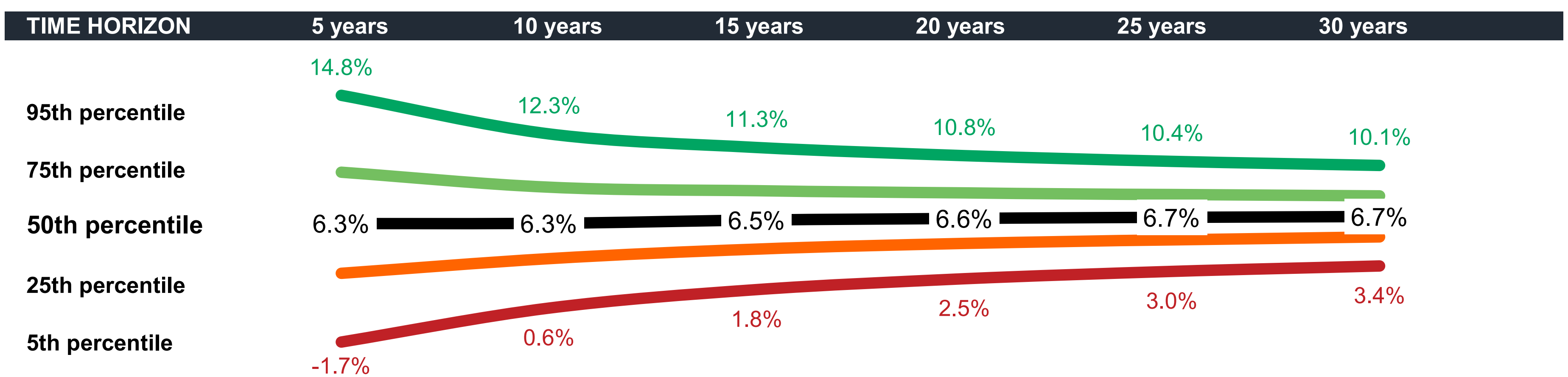
ASSET ALLOCATION

This chart illustrates the plan's actual asset allocation as of June 30, 2024. The bubble colors indicate fixed income (greens), equities (blue), and other asset classes (browns). The size of each bubble denotes how much of the portfolio is allocated to the asset class. The expected returns and riskiness are based on Milliman's June 30, 2024 Capital Market Assumptions.



DISTRIBUTION OF EXPECTED RETURNS

In any given year, the plan's investment return can range from very high to very low. As we look at longer and longer periods, the high and low years balance out and the annualized return should converge to the 50th percentile, or median. Using Milliman's June 30, 2024 Capital Market Assumptions, the expected long-term annualized median return of the portfolio, without reflecting a margin for manager alpha, is 6.7%.

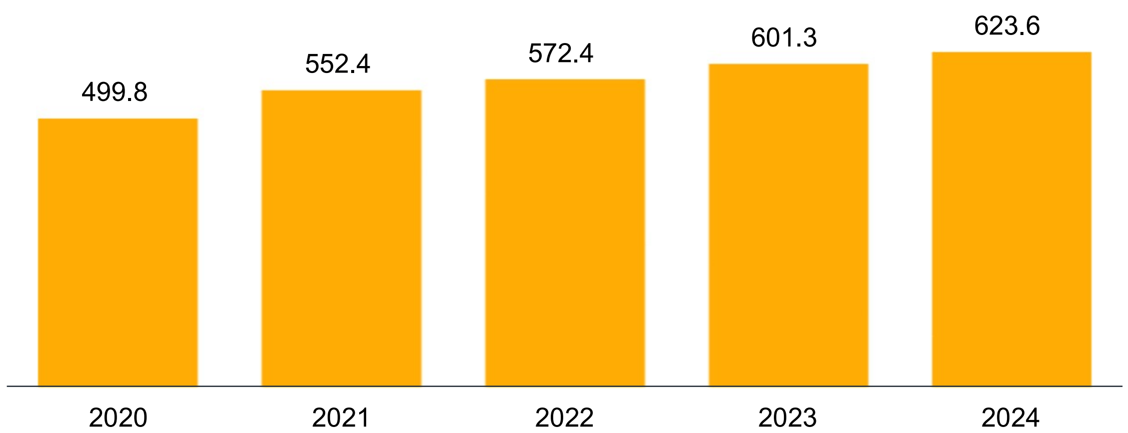


City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

FUNDED STATUS

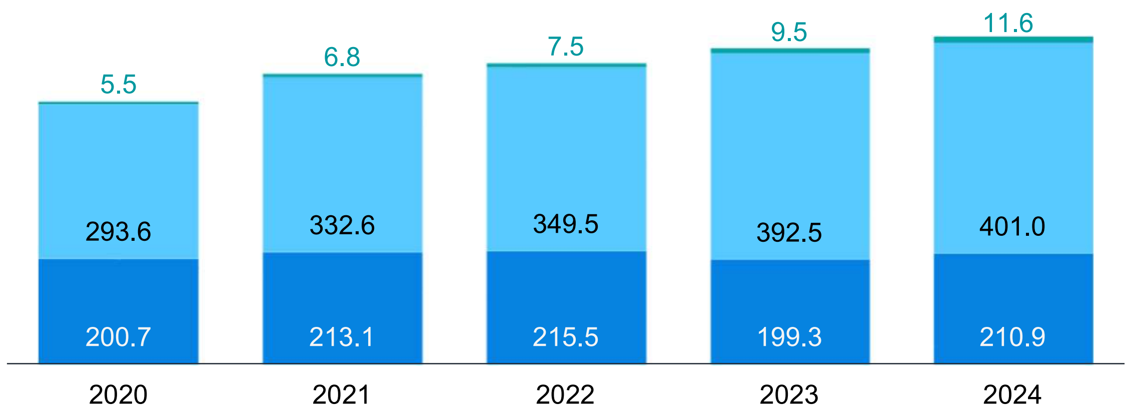
ACCRUED LIABILITY ($ millions)

Grows as active members earn benefits, goes down as retired members receive benefits



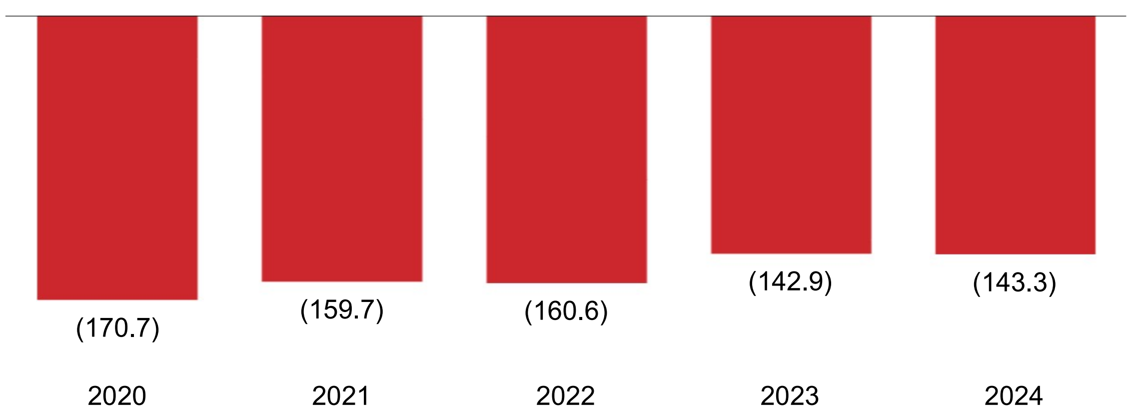
ACCRUED LIABILITY BY MEMBER GROUP

TERMINATED MEMBERS MEMBERS IN PAY STATUS ACTIVE MEMBERS



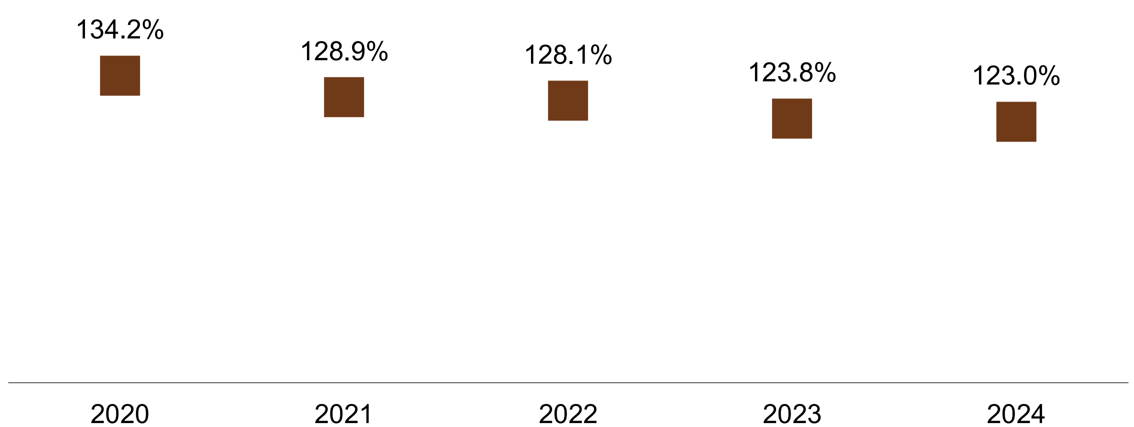
UNFUNDED ACCRUED LIABILITY ($ millions)

Dollar difference between the Accrued Liability and the Actuarial Value of Assets



FUNDED RATIO

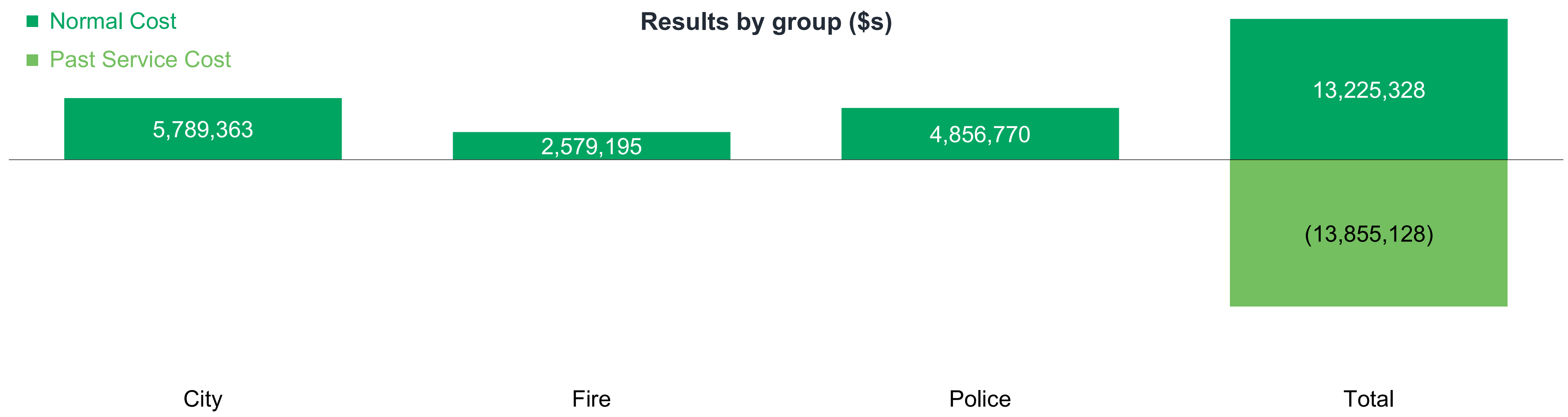
Ratio of the Actuarial Value of Assets to the Accrued Liability



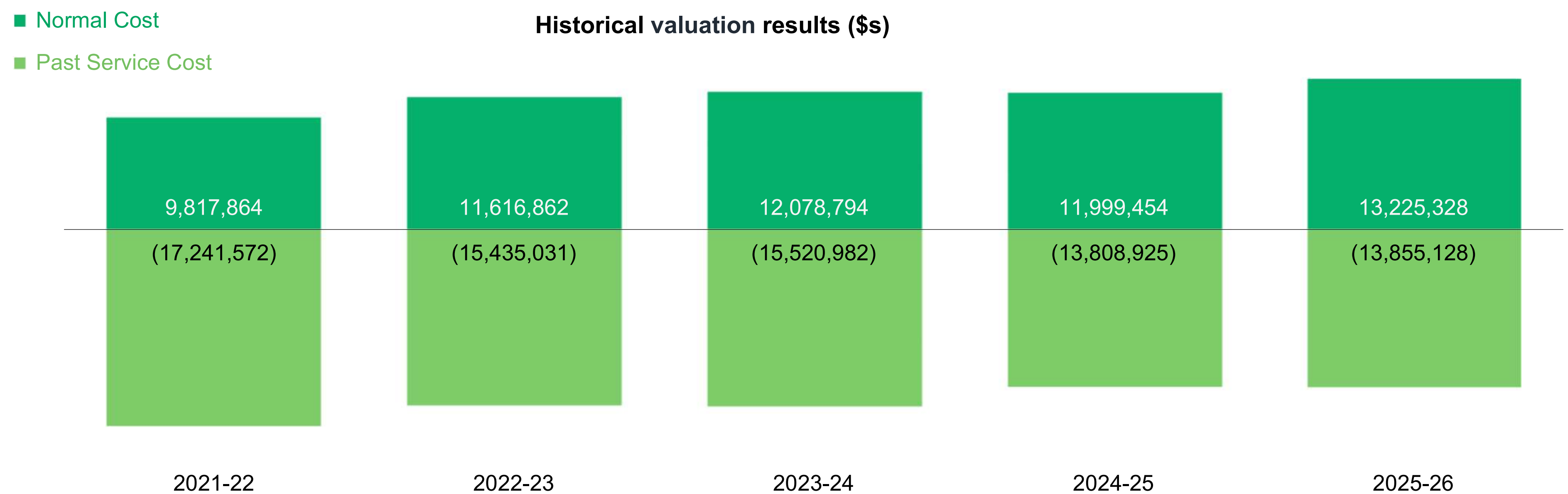
City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

ACTUARIALLY DETERMINED CONTRIBUTION

The Actuarially Determined Contribution until the accrued liability is completely funded consists of two pieces: Normal Cost plus a Past Service Cost payment to gradually eliminate the Unfunded Accrued Liability; both pieces include interest to adjust for the lag between the valuation date and the end of the fiscal year.



Each valuation determines the Actuarially Determined Contribution for the fiscal year starting one year later; that is, the July 1, 2024 valuation determines the Actuarially Determined Contribution for FY 2025-26.



City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

SUMMARY OF KEY RESULTS

	2023 VALUATION	2024 VALUATION No Changes	2024 VALUATION Vesting and Early Retirement Eligibility Changes
Interest Rate	6.50%	6.50%	6.50%
Change to vesting and early retirement eligibility for certain groups	10 Years	10 Years	**5 Years**
Accrued Liability	$601,283,176	$623,535,874	$623,550,579
Actuarial Value of Assets	744,150,539	766,895,958	766,895,958
Unfunded Accrued Liability	(142,867,363)	(143,360,084)	(143,345,379)
Funded Ratio	123.8%	123.0%	123.0%
Amortization Period	20	20	20
Past Service Cost	(12,174,767)	(12,216,755)	(12,215,502)
Past Service Cost with Interest	(13,808,925)	(13,856,549)	(13,855,128)
Total Normal Cost	13,432,701	14,724,213	14,831,972
Expected Member Contributions	2,853,271	3,171,739	3,171,739
Net Normal Cost	10,579,430	11,552,474	11,660,233
Net Normal Cost with Interest	11,999,454	13,103,106	13,225,328
Actuarially Determined Contribution	0	0	0
For Fiscal Year	2024-25	2025-26	2025-26

City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

WHAT'S GOING ON AT MILLIMAN

OUR TEAM

Rebecca A. Sielman, FSA	oversees public sector work in New England, Upper Midwest
Jenn Castelhano, FSA; Scott Lindberg, FSA; Eugine Lee, ASA; Sharad Arora	handles day-to-day services we provide to the City
Joliene Deskus; Suzanne Sheehan; Mike O'Connell	

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CT Gov't Finance Officers Ass'n *Jenn Castelhano: Managing contribution volatility in a well-funded DB plan*

CT Public Pension Forum *Becky Sielman: Asset allocation considerations*

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4,600	company employees
67	offices around the globe

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Life & Financial Risk Management

OUR MISSION

We serve our clients to protect the health and financial well-being of people everywhere.

City of Bristol Retirement System: Highlights of the July 1, 2024 Valuation

IMPORTANT INFORMATION

As part of our engagement with the City of Bristol ("City"), we have performed an actuarial valuation of the Plan as of July 1, 2024. Our findings are set forth in this actuary's report. The main purposes of this valuation are to determine funding for fiscal year 2025-26, to review the Plan's experience since the prior valuation, and to assess the funded position of the Plan.

Actuarial computations presented in this report are for the purposes of determining the recommended funding amounts for the Plan. The calculations in this report have been made on a basis consistent with our understanding of the Plan's funding policy and on our understanding of the plan provisions as summarized in this report. Determinations for purposes other than meeting these requirements, such as for financial reporting in accordance with GASB standards, may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

We believe that the measures of funded status contained herein are appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations and for assessing the need for or the amount of future contributions. Note that a Plan's funded status is dependent on the selection of both the actuarial cost method and the asset smoothing method; different measurements would result if, for instance, the Market Value of Assets were used in place of the Actuarial Value of Assets.

Actuarial assumptions, including interest rates, mortality tables, and others identified in this report, and actuarial cost methods are adopted by the City, who is responsible for selecting the Plan's funding policy, actuarial cost methods, asset valuation methods, and actuarial assumptions. The policies, methods, and assumptions used in this valuation are those that have been so adopted and are described in this report. The City is solely responsible for communicating to Milliman any changes thereto. All costs, liabilities, rates of interest, and other factors for the Plan have been determined on the basis of actuarial assumptions and methods which, in our professional opinion, are individually reasonable (taking into account the experience of the Plan and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated future experience affecting the Plan and are expected to have no significant bias.

This valuation is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, 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 modifications to contribution calculations based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of future measurements.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City. This information includes, but is not limited to, benefit provisions, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different, and our calculations may need to be revised.

Milliman's work is prepared solely for the use and benefit of the City. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: (a) the City may provide a copy of Milliman's work, in its entirety, to the City's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the City; and (b) the City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs. The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel. The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the Code of Professional Conduct and Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States, published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Rebecca A. Sielman, FSA

Consulting Actuary

PRELIMINARY REPORT PREPARED FOR:

Bristol CONNECTICUT All Heart

beirne.

Your Strategic Partner for Defined Benefit Plans

Month Ending 1/31/2025

John-Oliver Beirne, CRPC®, MBA
Partner & President
JOBeirne@beirnegroup.com
(203) 701-8976

Richard DeFrancesco, Jr.
Partner, Chief Operating Officer
RDeFrancesco@beirnegroup.com
(203) 951-3577

John Beirne, CIMA®
Founding Partner
JBeirne@beirnegroup.com
(203) 701-8974

Lindsey Allard, AWMA®, MBA
Partner, Managing Director
LAllard@beirnegroup.com
(203) 951-0305

Periods Ending 01/31/25

Name	1 Month	Last 3 Months	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
US Equity								
Russell 3000 Index	3.2	6.7	26.3	11.4	14.6	13.2	14.1	12.4
S&P 500 Index	2.8	6.2	26.4	11.9	15.2	13.8	14.4	12.7
Russell 1000 Index	3.2	6.8	26.7	11.7	15.0	13.5	14.3	12.6
Russell 1000 Growth Index	2.0	9.6	32.7	14.6	18.9	17.2	17.0	11.3
Russell 1000 Value Index	4.6	3.7	19.5	8.1	10.2	9.4	11.3	13.4
Russell Midcap Index	4.3	5.5	22.0	8.0	11.0	10.3	12.7	13.8
Russell 2000 Index	2.6	4.5	19.1	5.6	8.7	8.4	10.8	10.6
Russell 2000 Growth Index	3.2	6.3	22.7	6.2	7.8	8.7	11.5	7.6
Russell 2000 Value Index	2.1	2.6	15.5	4.7	8.9	7.8	9.8	13.1
International Equity								
MSCI AC World Index	3.4	4.8	21.3	8.9	11.6	10.3	10.3	-
MSCI AC World ex USA	4.0	1.2	11.5	4.0	6.0	5.7	5.8	-
MSCI EAFE Index	5.3	2.3	9.2	5.7	6.8	6.2	6.4	11.5
MSCI Emerging Markets Index	1.8	-1.9	15.3	-0.3	3.5	4.2	3.9	-
Fixed Income								
90 Day U.S. Treasury Bill	0.4	1.2	5.2	4.0	2.5	1.8	1.2	5.1
Blmbg. U.S. Aggregate	0.5	-0.1	2.1	-1.5	-0.6	1.2	2.3	8.7
Blmbg. U.S. Gov't/Credit	0.5	-0.2	2.0	-1.6	-0.6	1.3	2.5	8.7
Bloomberg U.S. Municipal Bond Index	0.5	0.7	2.1	0.5	0.7	2.1	3.2	8.0
Blmbg. U.S. Corp: High Yield Index	1.4	2.1	9.7	4.3	4.5	5.2	6.4	9.9
Real Estate								
FTSE NAREIT All REITs Index	1.2	-3.6	10.9	-1.5	2.7	5.1	9.6	9.8
NCREIF Property Index	-	-	-	-	-	-	-	-
Alternatives								
Barclay Hedge Fund Index	1.8	2.6	11.2	4.8	6.6	5.4	5.4	-
Inflation								
CPI - All Urban Consumers (SA)	-	-	-	-	-	-	-	3.0

Total Portfolio

Run Date: February 11, 2025
As of January 31, 2025

	Market Value ($)	% of Portfolio	Month	Quarter	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Years	Inception (%)	Inception Date
Total Portfolio	827,478,963	100.00	2.00	2.78	12.75	5.35	8.57	7.50	7.39	8.68	Jan-92
Policy Index Blended New			*2.35*	*3.13*	*14.23*	*5.69*	*7.55*	*7.05*	*7.45*	*7.41*	
60% MSCI ACWI/40% BC Agg			*2.23*	*2.77*	*12.97*	*4.48*	*6.51*	*6.49*	*6.98*	*6.82*	
Credit	**160,257,375**	**19.37**	**0.28**	**1.95**	**7.09**	**3.12**	**5.39**	**-**	**-**	**6.05**	**Jan-19**
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*1.20*	
High Quality Credit	**77,420,306**	**9.36**	**0.35**	**-1.40**	**4.64**	**1.79**	**2.97**	**-**	**-**	**4.19**	**Jan-19**
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*1.20*	
Boyd Watterson Fixed Income	30,294,832	3.66	0.65	-0.02	2.42	-1.26	-0.25	1.52	2.65	5.38	Apr-90
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*5.06*	
iShares Core US Aggregate Bond ETF(AGG)	15,566,753	1.88	0.52	-0.09	1.98	-	-	-	-	3.45	Aug-23
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*3.49*	
GoldenTree High Grade Floating Rate Fund, Ltd.	-	0.00	0.00	0.00	5.34	5.69	3.95	-	-	3.81	Feb-18
Blmbg. U.S. Aggregate Float Adjusted			*0.53*	*-0.06*	*2.11*	*-1.48*	*-0.56*	*1.22*	*2.34*	*1.25*	
Golub Capital BDC 4, Inc.($22 million)	15,620,000	1.89	0.00	1.73	14.53	-	-	-	-	14.50	Dec-22
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*3.14*	
EnTrust Structured Income II-A	15,938,722	1.93	0.00	-7.66	4.41	-0.46	5.21	-	-	5.23	Jul-17
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*1.13*	
Multi-Credit	**82,837,069**	**10.01**	**0.22**	**5.31**	**8.58**	**4.55**	**9.01**	**-**	**-**	**8.69**	**Jan-19**
Blmbg. U.S. Corp: High Yield Index			*1.37*	*2.10*	*9.68*	*4.34*	*4.49*	*5.24*	*6.45*	*5.99*	
Prytania Athena Fund	13,894,569	1.68	0.00	3.00	7.62	4.95	1.39	4.34	-	3.95	Mar-14
Blmbg. Global High Yield Index			*1.37*	*1.64*	*10.90*	*4.18*	*3.53*	*4.77*	*5.93*	*4.05*	
EnTrust Structured Income Fund	5,098,692	0.62	0.00	-5.81	-10.81	-3.81	3.34	5.34	-	4.96	Mar-13
Blmbg. U.S. Aggregate			*0.53*	*-0.07*	*2.07*	*-1.52*	*-0.60*	*1.19*	*2.30*	*1.51*	
Beach Point TR Offshore Fund II[CE]	10,711,466	1.29	1.73	4.44	9.42	5.32	6.29	5.52	-	6.11	Jan-12
Blmbg. U.S. Corp: High Yield Index			*1.37*	*2.10*	*9.68*	*4.34*	*4.49*	*5.24*	*6.45*	*5.98*	
Silver Point Specialty Credit Fund III, LP($22 million)	7,576,131	0.92	0.00	0.00	8.72	-	-	-	-	9.51	Apr-23
Blmbg. U.S. Corporate Investment Grade Index			*0.55*	*-0.07*	*2.86*	*-0.96*	*-0.05*	*2.18*	*3.69*	*4.11*	
GWC Select Opportunities SPC1($2.6 million)	2,613,732	0.32	0.00	2.98	12.52	-	-	-	-	12.93	Sep-23
Blmbg. U.S. Corp: High Yield Index			*1.37*	*2.10*	*9.68*	*4.34*	*4.49*	*5.24*	*6.45*	*11.14*	
Greywolf Opportunities Offshore Fund II, LP($24 million)	26,845,919	3.24	0.00	6.75	10.11	-	-	-	-	9.82	Oct-22
Blmbg. U.S. Corp: High Yield Index			*1.37*	*2.10*	*9.68*	*4.34*	*4.49*	*5.24*	*6.45*	*11.76*	
Greywolf Distressed Opp Fund, LP($17 million)	16,096,560	1.95	0.00	13.15	16.25	6.98	-	-	-	8.89	Aug-20
Blmbg. U.S. Universal Index			*0.60*	*0.13*	*2.90*	*-1.03*	*-0.18*	*1.60*	*2.69*	*-1.30*	

Total Portfolio

	Market Value ($)	% of Portfolio	Month	Quarter	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Years	Inception (%)	Inception Date
Equity	**391,786,724**	**47.35**	**3.97**	**3.92**	**18.38**	**7.92**	**12.46**	**-**	**-**	**14.16**	**Jan-19**
MSCI AC World Index			*3.38*	*4.78*	*21.27*	*8.93*	*11.56*	*10.32*	*10.34*	*13.63*	
Public Equity	**313,806,627**	**37.92**	**4.99**	**4.51**	**22.40**	**8.40**	**12.11**	**-**	**-**	**13.90**	**Jan-19**
MSCI AC World Index			*3.38*	*4.78*	*21.27*	*8.93*	*11.56*	*10.32*	*10.34*	*13.63*	
Neuberger Berman Large Cap Growth	86,226,018	10.42	2.92	6.69	24.84	12.67	18.41	17.17	15.72	14.65	Feb-79
Russell 1000 Growth Index			*1.98*	*9.55*	*32.68*	*14.57*	*18.90*	*17.18*	*16.95*	*12.35*	
iShares Russell 1000 Value ETF(IWD)	7,414,425	0.90	4.54	3.67	19.30	7.90	9.95	-	-	10.73	Feb-19
Russell 1000 Value Index			*4.63*	*3.70*	*19.54*	*8.08*	*10.15*	*9.42*	*11.30*	*10.92*	
Columbia Dividend Income	19,360,585	2.34	3.98	4.01	18.18	9.37	11.69	-	-	11.90	May-19
Russell 1000 Value Index			*4.63*	*3.70*	*19.54*	*8.08*	*10.15*	*9.42*	*11.30*	*10.03*	
Eagle Equity	34,843,728	4.21	5.61	7.45	29.25	12.62	14.75	-	-	15.44	Apr-19
Russell 1000 Value Index			*4.63*	*3.70*	*19.54*	*8.08*	*10.15*	*9.42*	*11.30*	*10.54*	
Robeco LCV	47,230,046	5.71	5.32	4.31	20.34	9.73	12.85	10.49	-	10.74	Oct-13
Russell 1000 Value Index			*4.63*	*3.70*	*19.54*	*8.08*	*10.15*	*9.42*	*11.30*	*10.01*	
Patient Opportunity I(LMNOX)	9,370,612	1.13	4.81	10.11	34.21	8.12	10.42	-	-	11.53	Apr-19
Russell 1000 Value Index			*4.63*	*3.70*	*19.54*	*8.08*	*10.15*	*9.42*	*11.30*	*10.54*	
Fiera SMID Growth	32,650,666	3.95	5.28	7.99	12.71	6.67	13.88	11.56	-	11.06	Nov-14
Russell 2500 Growth Index			*3.82*	*6.61*	*20.99*	*6.13*	*8.87*	*10.04*	*12.60*	*9.93*	
Neuberger Berman International	20,367,458	2.46	6.29	2.32	10.20	2.02	5.25	5.87	7.13	6.41	Feb-05
MSCI EAFE Index			*5.26*	*2.33*	*9.20*	*5.66*	*6.77*	*6.20*	*6.42*	*5.68*	
Vanguard Developed Mkts Ind(VTMNX)	2,904,534	0.35	4.49	1.31	9.03	3.79	-	-	-	8.14	Mar-20
FTSE Developed x North America Index			*5.07*	*1.80*	*8.27*	*4.89*	*6.48*	*6.10*	*6.36*	*8.65*	
GAMCO Gold	16,111,411	1.95	12.60	-3.24	41.35	11.51	7.67	7.01	-	-0.60	Feb-12
Philadelphia Gold and Silver Index			*12.25*	*-4.48*	*37.27*	*10.06*	*10.41*	*8.37*	*-0.48*	*-0.93*	
Sprott Asset Management	13,200,632	1.60	12.53	0.68	50.99	11.15	8.70	6.34	-	-1.51	Feb-12
Philadelphia Gold and Silver Index			*12.25*	*-4.48*	*37.27*	*10.06*	*10.41*	*8.37*	*-0.48*	*-0.93*	
iShares MSCI Emerging Markets ETF(EEM)	24,126,514	2.92	2.15	-2.24	14.01	-1.94	2.53	-	-	4.01	Feb-17
MSCI Emerging Markets Index			*1.81*	*-1.93*	*15.35*	*-0.26*	*3.45*	*4.16*	*3.91*	*5.24*	

Total Portfolio

	Market Value ($)	% of Portfolio	Month	Quarter	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Years	Inception (%)	Inception Date
Private Equity	**77,980,097**	**9.42**	**0.00**	**1.59**	**4.05**	**9.52**	**26.29**	**13.21**	**-**	**9.29**	**Jan-12**
7.5% Annual Return			*0.60*	*1.82*	*7.50*	*7.50*	*7.50*	*7.50*	*7.50*	*7.50*	
Arsenal III, LP($15 mill)	28,490,803	3.44	0.00	0.00	-1.11	5.15	29.74	-	-	29.73	Feb-19
Arsenal Growth Equity IV, LP($35 mill)	20,023,326	2.42	0.00	0.00	0.28	-	-	-	-	25.10	Feb-23
Arsenal-Beamer Investors, LLC($2.9 million)	3,527,686	0.43	0.00	0.00	-	-	-	-	-	21.64	Jun-24
Arsenal-Cart Investors II, LLC($2 million)	4,312,868	0.52	0.00	0.00	10.73	6.72	-	-	-	26.67	Nov-21
Arsenal-Elevate Investors I, LLC($4.6 million)	4,725,810	0.57	0.00	0.00	-2.72	-	-	-	-	1.12	Sep-22
Arsenal-Sayari Investors, LLC($2 million)	4,082,831	0.49	0.00	0.00	-0.43	27.68	-	-	-	24.56	Nov-21
GWC Select Opportunities SPC($2.5 million)	4,574,022	0.55	0.00	45.23	43.47	-	-	-	-	30.80	Nov-22
Zephyr Peacock India Fund III Limited ($5 million)	2,196,191	0.27	0.00	-9.05	-14.30	-4.72	-0.15	2.83	-	-0.08	Jun-12
Zephyr Peacock India Growth Fund US, LP($6 million)	6,046,560	0.73	0.00	0.00	38.40	4.49	9.10	-	-	3.08	Jul-18
Alternatives	**244,007,865**	**29.49**	**0.28**	**1.78**	**8.82**	**5.53**	**5.06**	**-**	**-**	**5.12**	**Jan-19**
Barclay Hedge Fund Index			*1.80*	*2.61*	*11.17*	*4.77*	*6.57*	*5.36*	*5.38*	*7.10*	
Real Estate	**65,808,446**	**7.95**	**0.00**	**0.38**	**-3.11**	**-1.22**	**1.39**	**-**	**-**	**2.60**	**Jan-19**
NCREIF Property Index			*0.00*	*0.90*	*0.43*	*-0.82*	*3.13*	*5.66*	*7.78*	*3.62*	
Boyd Titanium GSA Fund ($34.5 million)	31,652,839	3.83	0.00	0.17	-5.93	-1.57	1.70	5.08	-	5.00	Oct-13
Boyd Watterson State Govt Fund, LP($10 million)	9,558,488	1.16	0.00	0.14	-6.21	-1.01	2.72	-	-	4.40	Feb-18
Boyd Diversified Gov't REIT($10 million)	23,987,882	2.90	0.00	0.76	3.02	-	-	-	-	4.19	Jan-23
Invesco Mortgage Recovery Fund II, LP($10 million)	598,097	0.07	0.00	0.00	-23.60	-46.27	-39.03	-	-	-18.25	Apr-15
Lone Star ($10 million)	11,140	0.00	0.00	0.00	-5.98	75.38	37.98	24.50	-	19.57	Jun-11
Commodities	**5,149,256**	**0.62**	**0.00**	**0.00**	**-0.46**	**-6.37**	**-6.53**	**-**	**-**	**-6.17**	**Jan-19**
Bloomberg Commodity Index Total Return			*3.95*	*5.44*	*9.11*	*2.49*	*9.25*	*2.02*	*-0.29*	*7.50*	
Corrum Capital Real Assets, LP ($10 million)	5,149,256	0.62	0.00	0.00	-0.46	-6.37	-6.53	-	-	-1.04	Jun-15

Total Portfolio

	Market Value ($)	% of Portfolio	Month	Quarter	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	15 Years	Inception (%)	Inception Date
Differentiated Return Stream	**173,050,163**	**20.91**	**0.40**	**2.39**	**14.79**	**9.41**	**7.54**	**-**	**-**	**6.41**	**Jan-19**
CPI+2%			-	-	-	-	-	-	-	-	
Kelly Park Capital	18,300,191	2.21	0.00	0.00	2.63	-0.65	1.52	-	-	1.46	Jan-20
Verition International Multi-Strategy Fund, Ltd.[CE]	47,205,835	5.70	1.48	5.03	11.30	8.75	12.68	-	-	12.63	Jan-20
OCO Opportunities Offshore Fund, Ltd.	22,617,214	2.73	0.00	4.05	15.09	3.55	19.16	9.23	-	9.00	Feb-14
Greywolf Containership Opps II, LP($6 million)	5,953,198	0.72	0.00	12.95	51.97	-	-	-	-	23.94	Nov-22
Entrust Blue Ocean Fund, LP($17 million)	19,862,650	2.40	0.00	0.00	9.89	15.56	-	-	-	17.65	Apr-20
Entrust Blue Ocean Fund II, LP ($30 mill)	20,671,182	2.50	0.00	0.01	2.81	-	-	-	-	1.05	Dec-23
Longford Capital ($15 million)	6,335,766	0.77	0.00	0.00	137.64	51.03	34.85	21.06	-	12.01	Jul-13
Longford Capital Fund II, LP ($30 million)	13,960,415	1.69	0.00	0.00	10.17	8.88	5.70	-	-	3.26	Dec-16
Longford Capital Fund III, LP($30 million)	18,143,712	2.19	0.00	0.00	27.21	20.50	-	-	-	10.21	Apr-20
Cash	**31,426,998**	**3.80**	**0.35**	**1.07**	**4.91**	**3.81**	**2.30**	**-**	**-**	**2.22**	**Jan-19**
Cash Account	31,426,998	3.80	0.35	1.07	4.91	3.81	2.30	1.57	-	1.25	Jan-12
90 Day U.S. Treasury Bill			*0.37*	*1.16*	*5.19*	*4.02*	*2.51*	*1.79*	*1.22*	*1.38*	

Approx. 9% of portfolio is unvalued as of 1/31. There is also approx. 37% which is only valued quarterly.

Policy Index-Blended New = MSCI ACWI 55% / BBgBarc US Aggregate TR 25% / Barclay Hedge Fund Index 20%.

From 4/30/2022-1/1/2019 the Policy Index Blended New consists of MSCI ACWI 55% / BBgBarc US Aggregate TR 25% / HFRI Fund of Funds Composite Index 20%. Prior to 1/1/2019 the Policy Index Blended New consists of 15% Russell 1000 Growth, 15% Russell 1000 Value, 5% Russell MidCap, 13.6% MSCI EAFE, 7.5% MSCI Emerging Markets, 21.3% BC US Aggregate, 7.6% BofA HY BB-B Rated Constrained Index, 10% HFRX Global Hedge Fund Index, 5% Private Equity Actual.

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INDEX DEFINITIONS

- Citigroup 3 Month T-Bill measures monthly return equivalents of yield averages that are not marked to market. The Three-Month Treasury Bill Indexes consist of the last three three-month Treasury bill issues.

- Bloomberg Barclays Treasury U.S. T-Bills-1-3 Month Index includes aged U.S. Treasury bills, notes and bonds with a remaining maturity from 1 up to (but not including) 3 months. It excludes zero coupon strips.

- Bloomberg Barclays Capital US Treasury Inflation Protected Securities Index consists of Inflation-Protection securities issued by the U.S. Treasury.

- Bloomberg Barclays Muni Index is a rules-based, market-value-weighted index engineered for the long-term tax-exempt bond market. Bonds must be rated investment-grade by at least two ratings agencies.

- Bloomberg Barclays Muni 1 Year Index is the 1-year (1-2) component of the Municipal Bond index.

- Bloomberg Barclays Muni 3 Year Index is the 3-year (2-4) component of the Municipal Bond index.

- Bloomberg Barclays Muni 5 Year Index is the 5-year (4-6) component of the Municipal Bond index.

- Bloomberg Barclays Muni 7 Year Index is the 7-year (6-8) component of the Municipal Bond index.

- Bloomberg Barclays Intermediate U.S. Gov't/Credit is the Intermediate component of the U.S. Government/Credit index, which includes securities in the Government and Credit Indices. The Government Index includes treasuries and agencies, while the credit index includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements.

- Bloomberg Barclays U.S. Aggregate Index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset backed securities.

- Bloomberg Barclays Global Aggregate ex. USD Indices represent a broad-based measure of the global investment-grade fixed income markets. The two major components of this index are the Pan-European Aggregate and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds and Canadian government, agency and corporate securities.

- Bloomberg Barclays U.S. Corporate High Yield Index covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

- JP Morgan Government Bond Index-Emerging Market (GBI-EM) Index is a comprehensive, global local emerging markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure.

- The S&P 500 is a capitalization-weighted index of 500 stocks designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

- The Dow Jones Industrial Index is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry.

- The NASDAQ is a broad-based capitalization-weighted index of stocks in all three NASDAQ tiers: Global Select, Global Market and Capital Market.

- Russell 3000 is a market-cap-weighted index which consists of roughly 3,000 of the largest companies in the U.S. as determined by market capitalization. It represents nearly 98% of the investable U.S. equity market.

- Russell 1000 consists of the largest 1000 companies in the Russell 3000 Index.

- Russell 1000 Growth measures the performance of those Russell 1000 companies with higher P/B ratios and higher forecasted growth values.

- Russell 1000 Value measures the performance of those Russell 1000 companies with lower P/B ratios and lower forecasted growth values.

- Russell Mid Cap measures the performance of the 800 smallest companies in the Russell 1000 Index.

- Russell Mid Cap Growth measures the performance of those Russell Mid Cap companies with higher P/B ratios and higher forecasted growth values.

- Russell Mid Cap Value measures the performance of those Russell Mid Cap companies with lower P/B ratios and lower forecasted growth values.

- Russell 2000 consists of the 2,000 smallest U.S. companies in the Russell 3000 index.

- Russell 2000 Growth measures the performance of the Russell 2000 companies with higher P/B ratios and higher forecasted growth values.

- Russell 2000 Value measures the performance of those Russell 2000 companies with lower P/B ratios and lower forecasted growth values.

- Russell 2500 consists of the 2,500 smallest U.S. companies in the Russell 3000 index.

- Russell 2500 Growth measures the performance of the Russell 2500 companies with higher P/B ratios and higher forecasted growth values.

- Russell 2500 Value measures the performance of those Russell 2500 companies with lower P/B ratios and lower forecasted growth values.

- MSCI World captures large and mid-cap representation across 23 Developed Markets countries. With 1,645 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

- MSCI ACWI (All Country World Index) ex. U.S. Index captures large and mid-cap representation across 22 of 23 Developed Markets countries (excluding the United States) and 23 Emerging Markets countries. With 1,859 constituents, the index covers approximately 85% of the global equity opportunity set outside the US.

- MSCI ACWI (All Country World Index) ex. U.S. Small Cap Index captures small cap representation across 22 of 23 Developed Markets countries (excluding the US) and 23 Emerging Markets countries. With 4,368 constituents, the index covers approximately 14% of the global equity opportunity set outside the US.

- MSCI EAFE is an equity index which captures large and mid-cap representation across Developed Markets countries around the world, excluding the US and Canada. With 930 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

- MSCI EAFE Value captures large and mid-cap securities exhibiting overall value style characteristics across Developed Markets countries around the world, excluding the US and Canada. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield. With 507 constituents, the index targets 50% coverage of the free float- adjusted market capitalization of the MSCI EAFE Index.

- MSCI EAFE Growth captures large and mid-cap securities exhibiting overall growth style characteristics across Developed Markets countries around the world, excluding the US and Canada. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long term historical sales per share growth trend. With 542 constituents, the index targets 50% coverage of the free float-adjusted market capitalization of the MSCI EAFE Index.

- MSCI Emerging Markets captures large and mid-cap representation across 23 Emerging Markets countries. With 836 constituents, the index covers approximately 85% of the free-float adjusted market capitalization in each country.

- Consumer Price Index is a measure of prices paid by consumers for a market basket of consumer goods and services. The yearly (or monthly) growth rates represent the inflation rate.

- FTSE NAREIT Equity REITs Index contains all Equity REITs not designed as Timber REITs or Infrastructure REITs.

- S&P Developed World Property defines and measures the investable universe of publicly traded property companies domiciled in developed markets. The companies in the index are engaged in real estate related activities, such as property ownership, management, development, rental and investment.

- S&P Developed World Property x U.S. defines and measures the investable universe of publicly traded property companies domiciled in developed countries outside of the U.S. The companies included are engaged in real estate related activities, such as property ownership, management, development, rental and investment.

- Bloomberg Commodity Index is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification.

- HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of $50 Million under management or a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

- The Alerian MLP Index is the leading gauge of energy Master Limited Partnerships (MLPs). The float adjusted, capitalization-weighted index, whose constituents represent approximately 85% of total float-adjusted market capitalization, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis.

- The Adjusted Alerian MLP Index is commensurate with 65% of the monthly returns of the Alerian MLP Index to incorporate the effect of deferred tax liabilities incurred by MLP entities.

DEFINITION OF KEY STATISTICS AND TERMS

- Returns: A percentage figure used when reporting historical average compounded rate of investment return. All returns are annualized if the period for which they are calculated exceeds one year.

- Universe Comparison: The universe compares the fund's returns to a group of other investment portfolios with similar investment strategies. The returns for the fund, the index and the universe percentiles are displayed. A percentile ranking of 1 is the best, while a percentile ranking of 100 is the worst. For example, a ranking of 50 indicates the fund outperformed half of the universe. A ranking of 25 indicates the fund was in the top 25% of the universe, outperforming75%.

- Returns In Up/Down Markets: This measures how the fund performed in both up and down markets. The methodology is to segregate the performance for each time period into the quarters in which the market, as defined by the index, was positive and negative. Quarters with negative index returns are treated as down markets, and quarters with positive index returns are treated as up markets. Thus, in a 3 year or 12 quarter period, there might be 4 down quarters and 8 up quarters. A simple arithmetic average of returns is calculated for the fund and the index based on the up quarters. A simple arithmetic average of returns is calculated for the fund and the index based on the down quarters. The up-market capture ratio is the ratio of the fund's return in up markets to the index. The down-market capture ratio is the ratio of the fund's return in down markets to the index. Ideally, the fund would have a greater up market capture ratio than down market capture ratio.

- Standard Deviation: Standard deviation is a statistical measure of the range of performance within which the total returns of a fund fall. When a fund has a high standard deviation, the range of performance is very wide, meaning there is a greater volatility. Approximately 68% of the time, the total return of any given fund will differ from the average total return by no more than plus or minus the standard deviation figure. Ninety-five percent of the time, a fund’s total return will be within a range of plus or minus two times the standard deviation from the average total return. If the quarterly or monthly returns are all the same the standard deviation will be zero. The more they vary from one another, the higher the standard deviation. Standard deviation can be misleading as a risk indicator for funds with high total returns because large positive deviations will increase the standard deviation without a corresponding increase in the risk of the fund. While positive volatility is welcome, negative is not.

- R-Squared: This reflects the percentage of a fund’s movements that are explained by movements in its benchmark index. An R-squared of 100 means that all movements of a fund are completely explained by movements in the index. Conversely, a low R-squared indicates very few of the fund’s movements are explained by movements in the benchmark index. R-squared can also be used to ascertain the significance of a particular beta. Generally, a higher R-squared will indicate a more reliable beta figure. If the R-squared is lower, then the beta is less relevant to the fund’s performance. A measure of diversification, R-squared indicates the extent to which fluctuations in portfolio returns are explained by market. An R-squared = 0.70 implies that 70% of the fluctuation in a portfolio's return is explained by the fluctuation in the market. In this instance, overweighting or underweighting of industry groups or individual securities is responsible for 30% of the fund's movement.

- Beta: This is a measure of a fund’s market risk. The beta of the market is 1.00. Accordingly, a fund with a 1.10 beta is expected to perform 10% better than the market in up markets and 10% worse that the market in down markets. It is important to note, however, a low fund beta does not imply the fund has a low level of volatility; rather, a low beta means only that the fund’s market-related risk is low. Because beta analyzes the market risk of a fund by showing how responsive the fund is to the market, its usefulness depends on the degree to which the markets determine the fund's total risk (indicated by R-squared).

- Alpha: The Alpha is the nonsystematic return, or the return that cannot be attributed to the market. It can be thought of as how the manager performed if the market’s return was zero. A positive alpha implies the manager added value to the return of the portfolio over that of the market. A negative alpha implies the manager did not contribute any value over the performance of the market.

- Sharpe Ratio: The Sharpe ratio is the excess return per unit of total risk as measured by standard deviation. Higher numbers are better, indicating more return for the level of risk experienced. The ratio is a fund's return minus the risk-free rate of return (30-day T-Bill rate) divided by the fund’s standard deviation. The higher the Sharpe ratio, the more reward you are receiving per unit of total risk. This measure can be used to rank the performance of mutual funds or other portfolios.

- Treynor Ratio: The Treynor ratio measures returns earned in excess of that which could have been earned on a riskless investment per each unit of market risk. The ratio relates excess return over the risk-free rate to the additional risk taken; however, systematic risk is used instead of total risk. The Treynor ratio is similar to the Sharpe ratio, except in the fact that it uses the beta to evaluate the returns

- Tracking Error: Tracking error measures the volatility of the difference in annual returns between the manager and the index. This value is calculated by measuring the standard deviation of the difference between the manager and index returns. For example, a tracking error of +/- 5 would mean there is about a 68% chance (1 standard deviation event) that the manager's returns will fall within +/- 5% of the benchmark's annual return.

- Information Ratio: The information ratio is a measure of the consistency of excess return. This value is determined by taking the annualized excess return over a benchmark (style benchmark by default) and dividing it by the standard deviation of excess return.

- Downside Risk: Downside risk is a measure similar to standard deviation but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. The higher the factor, the riskier the product.