

**New Hampshire Retirement System (NHRS)
Special Investment Committee Meeting**

(Certain portions of the meeting may be held in Non-Public Session)

**Agenda
Tuesday, July 9, 2024**

- 1:30 pm Call to Order
- 1:30 pm Approve Minutes [Tab 1]
 - June 11, 2024, Public Meeting Minutes *(Action Expected)*
- 1:35 pm Comments from the Chief Investment Officer [Tab 2]
 - Portfolio: Performance & Manager Update(s)
 - Holdings Update
 - Investment Office Update
- 1:45 pm NHRS Investment Office Strategic Plan Presentation *(Action Expected)* [Tab 3]
- 2:30 pm Funston Investment Office Strategic Plan Presentation [Tab 4]
- 3:15 pm NHRS Compensation Presentation *(Non-Public Session Expected)* [Tab 5]
- 3:45 pm Adjournment

- Informational Materials [Tab 6]
 - Callan Monthly Review – May 2024
 - Asset Allocation Update
 - Private Debt & Equity Summary

Next Meeting: Tuesday, August 13, 2024

NOTE: The draft of these minutes from the June 11, 2024, Independent Investment Committee meeting is subject to approval and execution at a subsequent meeting.

**Independent Investment Committee Meeting
June 11, 2024
DRAFT Public Minutes**

**New Hampshire Retirement System
54 Regional Drive
Concord, NH 03301**

Committee Members:

- Christine Clinton, CFA, *Chair*
- Brian Bickford, CFA, CFP®, *Member*
- Maureen Kelliher, CFA, *Member*
- Mike McMahon, *Non-Voting Member*
- Paul Provost, CFP®, *Member*

Staff:

- Jan Goodwin, *Executive Director*
- Raynald Leveque, *Chief Investment Officer*
- Gregory Richard, CFA, CAIA, *Senior Investment Officer*
- Shana Bilech, CFP®, *Investment Officer*
- Jonathan Diaz, *Investment Officer*
- Jesse Pasierb, *Investment Operations Analyst*
- Mark Cavanaugh, *Associate Counsel, and Compliance Officer (by video conference)*
- Tim Crutchfield, *Deputy Director, and Chief Legal Counsel (by video conference)*
- Heather Hoffacker, *Internal Auditor (by video conference)*
- John Laferriere, *Director of Information Technology (by video conference)*

Guests:

- Ryan Brauns, *Partner, Ares Credit Group*
- Kara Herskowitz, *Managing Director, Ares Investor Relations*
- Maggie Todd, *Senior Associate, Ares Global Client Solutions*
- Anthony Frammartino, *President, The Townsend Group*
- Tony Pietro, *Partner, The Townsend Group*
- Joe Davenport, *Partner, The Townsend Group*
- Christian Nye, *Associate Partner, The Townsend Group*
- Angel Haddad, *Senior Vice President, Callan LLC*
- Pete Keliuotis, *CFA Executive Vice President, Callan LLC*

- David Smith, CFA, CTP, Senior Vice President, Callan, LLC

Chair Clinton called the meeting to order at 1:30 PM.

On a motion by Mr. Provost, seconded by Mr. Bickford, the Independent Investment Committee (Committee) unanimously approved the public minutes of the April 9th, 2024, Committee meeting as presented.

Mr. Leveque reviewed investment returns through recent periods and referred to the Callan Monthly Review for the period ending April 30, 2024. He shared an update on holdings within the NHRS portfolio. Fixed Income was rebalanced from domestic equity during the month of May 2024, to bring fixed income back within its target allocation range. Mr. Leveque updated the Committee on total plan liquidity, Russian holdings, and the Work Plan.

Mr. Leveque provided the Committee with an update on the Investment Team's Strategic Asset Allocation Implementation Plan. He provided a status update on the advisory work being performed by Funston Advisory Services (Funston) on the Investment Office Strategic Plan in conjunction with the plan developed by the Investment Team. He also commented on the work being performed by CEM Benchmarking (CEM).

Mr. Leveque proposed and the Committee approved, a special meeting on July 9, to discuss the Strategic Plan for the Investment Office.

On a motion by Mr. Bickford, seconded by Ms. Kelliher, the Committee unanimously approved to renew the Investment Management Agreement mandate with BlackRock for a 5-year term through July 31, 2029.

Next, Mr. Leveque, Ms. Bilech and Mr. Keliuotis provided an overview of Ares Management Corporation (Ares). They discussed the opportunity to invest in Ares Senior Direct Lending Fund (Fund III) and provided NHRS Investment Staff's recommendation to invest in Fund III. Following this, the Committee heard from representatives of Ares.

Ms. Todd and Ms. Herskowitz introduced Ares to the Committee. Ms. Herskowitz gave an overview of Ares and its organizational structure. Mr. Brauns detailed Ares' investment philosophy, team, and process. He discussed case studies and the performance of investments in Ares Senior Direct Lending Fund I and Fund II and closed by discussing Fund III key terms.

The Committee discussed the presentation made by Ares and the opportunity to invest in Ares Senior Direct Lending Fund III (Fund III). On

a motion by Ms. Kelliher, seconded by Mr. Bickford, the Committee unanimously voted to commit \$100 million to Ares Senior Direct Lending Fund – “Unlevered” (Fund III), subject to contract and legal review.

Next, the Committee heard from representatives of The Townsend Group (Townsend) on the Real Estate Semi-Annual Portfolio Review and Calendar-Year 2024 Plan.

Mr. Frammartino opened with an organizational update and an overview of the NHRS and Townsend partnership, highlighting favorable performance and compliance with guidelines. Mr. Pietro summarized the investments initiated over the calendar year to date, discussing portfolio performance, diversification, and current positioning.

Next, Mr. Davenport reviewed the progress of the goals set for the NHRS Calendar Year 2024 Investment Plan. Mr. Nye and Mr. Davenport provided an overview of recent investments and performance. Mr. Pietro closed the section with a review of the portfolio’s current investment profile and upcoming goals for FY 2025

Mr. Keliuotis and Mr. Smith, referred to the “Semi-Annual Alternatives Portfolio Review,” presentation dated June 2024 and provided a detailed overview of the private equity and private credit assets of the NHRS portfolio as of December 31, 2023.

Mr. Smith provided an overview of the NHRS private equity portfolio, followed by a detailed overview of the NHRS private equity portfolio and reviewed valuations and fund rankings by fund vintage year.

Mr. Keliuotis discussed the NHRS private credit portfolio and reviewed valuations and rankings by fund vintage year. He discussed the overall NHRS private credit strategy.

On a motion by Mr. Bickford, seconded by Ms. Keliher, the Committee unanimously voted to adjourn the meeting.

The meeting adjourned at 4:10 PM.

Market Environment

As of May 31, 2024

Index	Last Month	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell 3000	4.72	10.02	27.58	7.83	15.00	12.09
S&P 500	4.96	10.56	28.19	9.57	15.80	12.69
Russell 2000	5.02	5.18	20.12	(1.65)	8.61	7.66
MSCI ACWI ex USA	2.90	4.69	16.74	0.27	6.81	4.03
MSCI Emerging Markets	0.56	2.37	12.39	(6.23)	3.55	2.66
Bloomberg Aggregate	1.70	(0.78)	1.31	(3.10)	(0.17)	1.26
NCREIF NFI-ODCE	(0.87)	(2.58)	(11.82)	1.06	2.10	5.45
Bloomberg Commodity Price	1.30	0.85	5.13	3.52	5.80	(2.59)

Both equities and fixed income posted positive returns in May. Investor sentiment about the economy was favorable, supported by positive corporate earnings and easing economic data. Slowing economic growth and softening labor reports boosted investors' confidence that rate cuts may still be on the table for this year, but inflation remains persistent. During the May Federal Open Market Committee meeting, rates were unchanged. However, Federal Reserve Chair Jerome Powell indicated that a rate hike is unlikely to be their next move, sparking a rally in markets. Growth stocks outperformed value, and developed markets outperformed emerging. Within fixed income, long-term government and credit bonds posted the highest returns. The 10-year Treasury yield decreased 18 bps this month.

Real, annualized U.S. GDP increased 1.3% in 1Q24 according to the "second" estimate, a decrease from the "advance" estimate reading of 1.6%. In 4Q23, GDP increased 3.4%. The change in GDP from the "advance" estimate to the "second" estimate reflects a downward revision to consumer spending, private inventory investment, and federal government spending. This was partially offset by an upward revision to state and local government spending, non-residential fixed investment, residential fixed investment, and exports.

The U.S. economy added 272,000 jobs in May, a jump from the reported 175,000 jobs added in April. Sectors experiencing employment growth included health care, government, leisure and hospitality, professional, scientific, and technical services. The seasonally adjusted unemployment rate for May was 4.0%, a 0.1 percentage point increase from the April reading. The labor force participation rate decreased in May from 62.7% to 62.5%.

Year-over-year headline Consumer Price Index (CPI) growth increased 3.3% in May, a 0.1 percentage point decrease from the April increase of 3.4%. Price levels were unchanged in May at 0.3%. The gasoline index declined, offset by a rise in the shelter index. The food away from home index rose, while the food at home index did not change. Core CPI, which excludes food and energy prices, was up 3.4% year-over-year, compared to the 3.6% reading in April. The core monthly increase was 0.2%, a 0.1 percentage point decrease from April.

*Due to a lag in the reporting of NCREIF NFI-ODCE Index returns, the monthly return shown is deduced from the most recent quarterly return.

U.S. Equity Overview

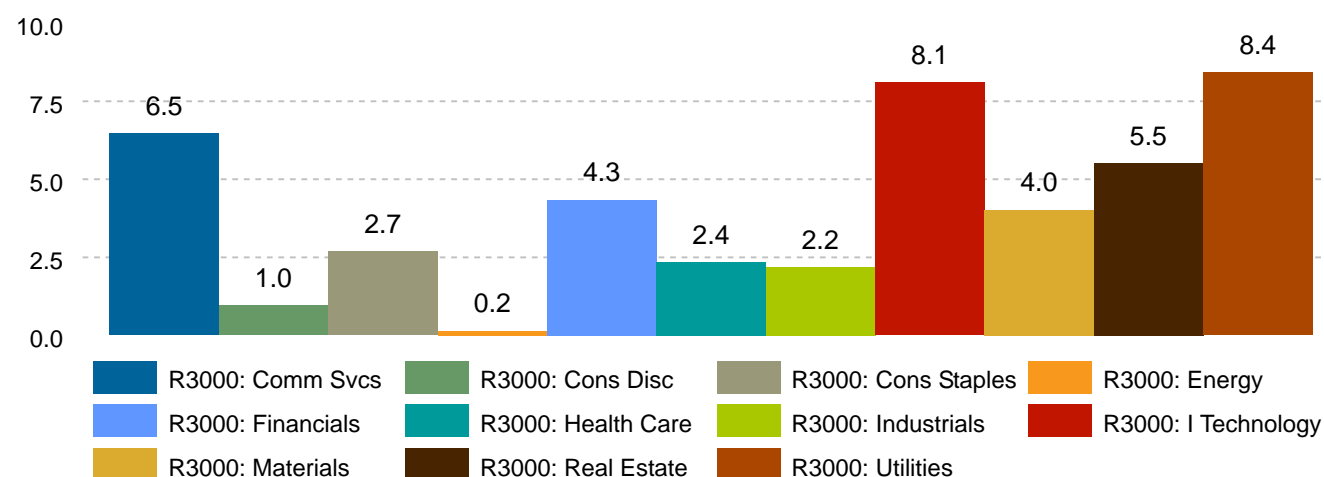
As of May 31, 2024

Index	Last Month	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Russell 3000	4.72	10.02	27.58	7.83	15.00	12.09
Russell 1000	4.71	10.30	28.01	8.46	15.42	12.40
Russell 1000 Growth	5.99	11.41	33.60	11.12	19.37	15.80
Russell 1000 Value	3.17	8.99	21.71	5.45	10.74	8.61
Russell Midcap	2.85	8.60	23.11	3.10	11.07	9.47
Russell 2000	5.02	5.18	20.12	(1.65)	8.61	7.66
Russell 2000 Growth	5.36	7.58	18.38	(3.34)	7.79	8.06
Russell 2000 Value	4.68	2.90	21.76	(0.17)	8.77	6.87

U.S. equities were up 4.7% in May (Russell 3000 Index). Despite stubborn inflation, easing economic data buoyed equity markets. The S&P500, Dow, and NASDAQ all closed at record highs. NVIDIA, Apple, Microsoft, and Alphabet drove returns for the S&P500, given over half of its constituents traded below their 50-day simple moving average. Small caps gained some headway, outperforming large caps (Russell 1000 Index: 4.7% vs. Russell 2000 Index: 5.0%). In both the large cap and small cap space, growth outperformed value, fueled by strong performance in technology stocks due to expectations of lower future interest rates (Russell 1000 Growth Index: 6.0% vs. Russell 1000 Value Index: 3.2%; Russell 2000 Growth Index: 5.4% vs. Russell 2000 Value Index: 4.7%). The SEC's approval of the Ethereum ETF marked a significant development in the digital asset industry.

Overall, sector performance was positive in May, with all the sectors that comprise the Russell 3000 posting positive returns. Utilities was the top performing sector (+8.4), followed by Technology (+8.1%), Communication Services (+6.5%), and Real Estate (+5.5%). The lowest performing sectors were Consumer Discretionary (+1.0%) and Energy (+0.2%).

Russell 3000 Index 1 Month Sector Returns



Global ex-U.S. Equity Overview

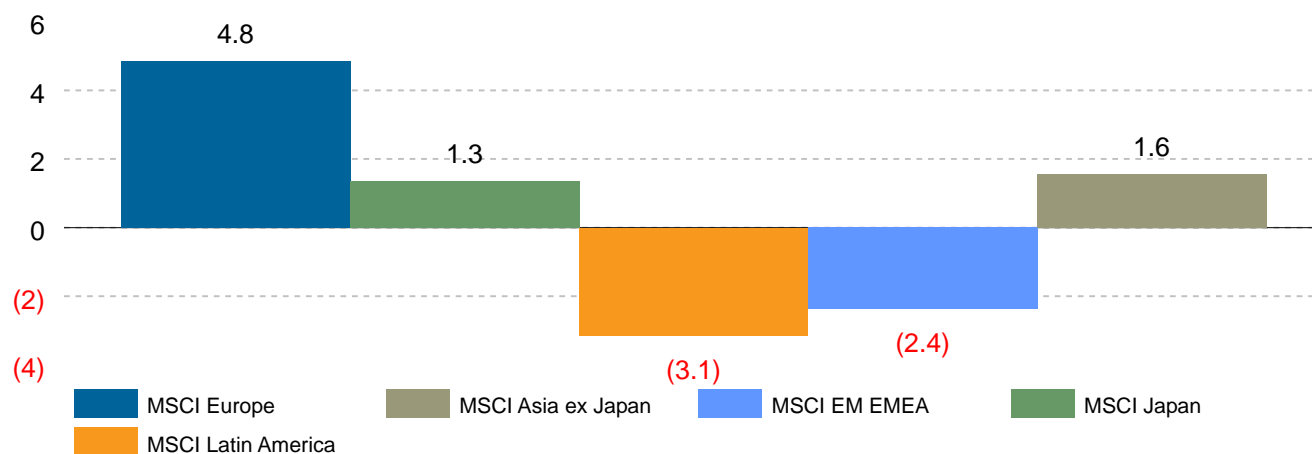
As of May 31, 2024

Index	Last Month	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
MSCI ACWI ex USA	2.90	4.69	16.74	0.27	6.81	4.03
MSCI EAFE	3.87	5.78	18.53	3.06	8.05	4.60
MSCI EAFE Hedged	2.71	10.51	23.42	11.43	12.32	9.13
MSCI Emerging Markets	0.56	2.37	12.39	(6.23)	3.55	2.66
MSCI ACWI ex USA Small Cap	3.24	2.11	16.32	(1.30)	7.28	4.77

Global ex-U.S. equities posted gains in May. The MSCI ACWI ex-USA Index returned 2.9%, with value stocks outperforming growth (MSCI ACWI ex-USA Value Index: 3.2% vs. MSCI ACWI ex-USA Growth Index: 2.6%). Despite an unexpected rise in the euro zone inflation report, investors remained confident that the European Central Bank would still cut rates at its June meeting (the ECB did cut rates in June). In the U.K., equities were positive, boosted by exposure to financials and industrials. GDP reports for May surprised to the upside, and higher-than-expected inflation reports may delay rate cuts. Bid activity in the U.K. reached all-time highs driven by foreign investment. Japan's performance lagged other international markets due to currency weakness affecting consumer sentiment. The Bank of Japan is likely to increase rates to support the weakening yen. Given this expectation, the financial sector performed well. The dollar weakened over the month against a basket of developed market currencies (MSCI EAFE Index: 3.9% vs. MSCI EAFE Hedged Index: 2.7%).

Emerging markets underperformed developed markets in May, gaining 0.6% (MSCI Emerging Markets Index). The MSCI Asia ex-Japan Index returned +1.6% this month, bolstered by better-than-expected economic data from China. Hong Kong also reported higher-than-expected first-quarter economic growth. Returns in emerging Europe, the Middle East, and Africa were negative (MSCI EM EMEA: -2.4%). Poor performance in the energy sector impacted some Middle Eastern markets. Latin American markets also declined, with the MSCI Latin America Index falling 3.1%.

MSCI Regional 1 Month Returns

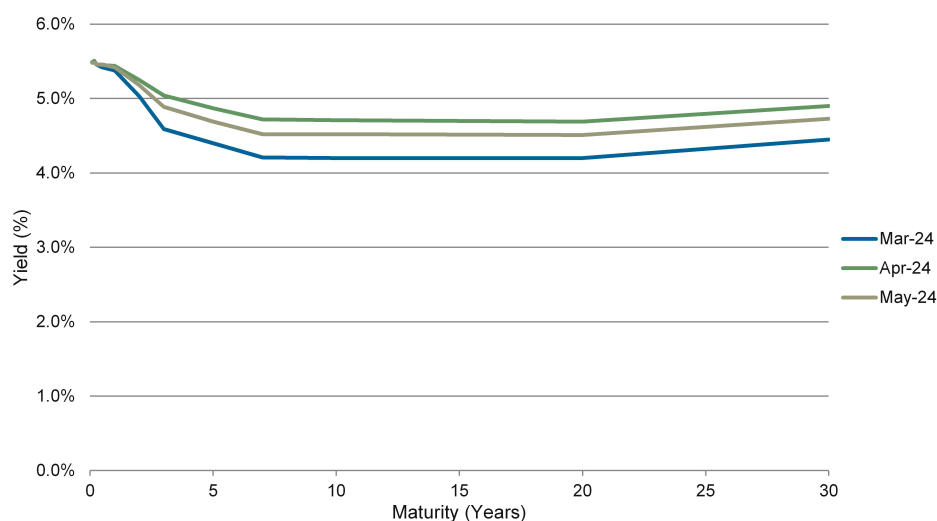


Fixed Income Overview

As of May 31, 2024

Index	Last Month	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Bloomberg Aggregate	1.70	(0.78)	1.31	(3.10)	(0.17)	1.26
Bloomberg Long Gov/Credit	2.82	(2.41)	(1.90)	(7.77)	(1.90)	1.55
Bloomberg Treasury	1.46	(0.96)	(0.22)	(3.38)	(0.67)	0.79
Bloomberg Credit	1.82	(0.41)	4.05	(2.67)	0.85	2.16
Bloomberg Mortgage	2.00	(1.04)	0.50	(3.31)	(0.85)	0.80
Bloomberg TIPS	1.72	(0.08)	1.56	(1.39)	2.09	1.86
Bloomberg Corp High Yield	1.10	1.47	11.24	1.78	4.19	4.30
Credit Suisse Leveraged Loans	0.91	2.52	13.22	6.01	5.35	4.64
90-day T-bill	0.48	1.29	5.45	2.89	2.12	1.47

Treasury Yield Curve



Bond returns were positive for May. Optimism among investors lifted credit markets as signs of a slowing economy and dovish sentiments from the Fed signaled a potential rate cut this year. However, the large supply of municipal bonds, partly due to a surge in refinancing taxable Build America Bonds, caused their yields to rise. Bonds with longer maturities outperformed those with shorter terms.

Investment grade issuance finished at \$134 billion in May, exceeding expectations. Investment grade spreads tightened 2 bps from 87 bps to 85 bps. Primary market activity for high yield issuers boomed during the month. High yield issuers priced \$31 billion, and spreads widened from 301 bps to 308 bps. The 90-day T-bill was unchanged at 5.46%, the 2-year fell 15 bps to 4.89%, the 10-year decreased 18 bps to 4.51%, and the 30-year decreased 14 bps to 4.65%. The 2-10 Year Treasury Yield curve inversion increased by 3 bps from the previous month and remained inverted at -38 bps.

The Bloomberg US Aggregate Bond Index rose 1.7% in May. The Bloomberg Credit Index and the Bloomberg High Yield Corporate Index returned 1.8% and 1.1%, respectively. Long bonds (Bloomberg Long Gov/Credit Index) increased 2.8% this month. TIPS (Bloomberg US TIPS Index: 1.7%) outperformed nominal Treasuries (Bloomberg Treasury Index: 1.5%). The 10-year breakeven inflation rate decreased from 2.41% to 2.35%.

The table below details the rates of return for the fund’s asset classes over various time periods ended May 31, 2024. Negative manager excess returns are shown in red, positive excess returns in green. Returns for one year or greater are annualized.

Net of Fees Returns for Periods Ended May 31, 2024									
Composite	Total Fund Weighting As of 5/31/2024	Last Month	Last 3 Months	FYTD	CYTD	LTM	3-YR	5-YR	10-YR
Total Domestic Equity	32.03%	4.80%	3.27%	17.15%	8.63%	25.53%	6.46%	13.42%	10.80%
Domestic Equity Benchmark(1)		4.72%	3.35%	19.43%	10.15%	27.58%	7.79%	14.67%	12.17%
Excess Return		0.07%	-0.08%	-2.28%	-1.52%	-2.06%	-1.33%	-1.25%	-1.37%
Total Non US Equity	19.20%	3.40%	3.39%	11.89%	6.33%	17.63%	1.36%	7.24%	4.75%
Non US Equity Benchmark(2)		2.90%	4.21%	11.73%	5.79%	16.74%	0.27%	6.81%	4.03%
Excess Return		0.50%	-0.83%	0.16%	0.54%	0.89%	1.08%	0.43%	0.72%
Total Fixed Income	19.14%	1.64%	0.09%	2.75%	-1.30%	2.99%	-2.28%	1.29%	1.88%
Bloomberg Capital Universe Bond Index		1.66%	0.26%	2.54%	-1.18%	2.38%	-2.74%	0.21%	1.56%
Excess Return		-0.02%	-0.17%	0.22%	-0.11%	0.62%	0.47%	1.09%	0.33%
Total Cash	1.82%	0.43%	1.31%	5.02%	2.20%	5.46%	2.99%	2.20%	1.55%
3-Month Treasury Bill		0.48%	1.36%	4.97%	2.21%	5.45%	2.89%	2.12%	1.47%
Excess Return		-0.05%	-0.06%	0.05%	-0.01%	0.01%	0.10%	0.09%	0.08%
Total Real Estate (Q4)*	9.41%	0.04%	-3.87%	-5.96%	-4.13%	-10.32%	7.49%	7.03%	9.34%
Real Estate Benchmark(3)		-0.87%	-3.39%	-11.24%	-6.64%	-12.25%	2.98%	2.82%	6.08%
Excess Return		0.91%	-0.48%	5.28%	2.51%	1.92%	4.51%	4.21%	3.26%
Total Private Equity (Q4)*	13.78%	-0.50%	1.31%	2.63%	1.28%	6.89%	13.07%	13.93%	11.54%
Private Equity Benchmark(4)		5.51%	12.60%	27.27%	20.17%	30.83%	14.19%	17.64%	16.02%
Excess Return		-6.00%	-11.28%	-24.64%	-18.89%	-23.93%	-1.13%	-3.71%	-4.48%
Total Private Debt (Q4)*	4.62%	0.01%	1.34%	3.02%	1.32%	5.11%	7.70%	5.79%	6.35%
Private Debt Benchmark(5)		0.78%	3.97%	11.66%	6.49%	12.29%	4.65%	4.58%	5.57%
Excess Return		-0.77%	-2.64%	-8.63%	-5.17%	-7.19%	3.06%	1.21%	0.77%
Total Fund Composite	100.00%	2.45%	1.57%	7.88%	3.47%	11.32%	4.72%	8.55%	7.22%
Total Fund Benchmark(6)		2.92%	3.01%	10.85%	5.45%	14.28%	4.02%	8.46%	7.42%
Excess Return		-0.46%	-1.44%	-2.97%	-1.99%	-2.97%	0.70%	0.09%	-0.21%

(1) The Domestic Equity Benchmark is the Russell 3000 Index as of 7/1/2021.

(2) The Non US Equity Index is the MSCI ACWI ex US Index as of 7/1/2003. Prior to 7/1/2003 it was the MSCI EAFE Index.

(3) The Real Estate Benchmark is the NCREIF NFI-ODCE Value Weight Net Index lagged 1 quarter as of 7/1/2015.

(4) The Private Equity Benchmark is the Russell 3000 Index + 2% lagged 1 quarter as of 7/1/2022.

(5) The Private Debt Benchmark is (50% MStar LSTA Leveraged Loan 100 Idx + 50% Bloomberg High Yield Index) + 1% lagged 1 quarter as of 7/1/2022.

(6) Current Month Target = 30.0% Russell 3000 Index, 25.0% Bloomberg Universal, 20.0% MSCI ACWI ex-US, 10.0% NCREIF NFI-ODCE Value Weight Net lagged 3 months, 10.0% Russell 3000 Index lagged 3 months+2.0%, 2.5% Bloomberg High Yield Corp lagged 3 months+1.0% and 2.5% MStar LSTA Lev Loan 100 lagged 3 months +1.0%.

(7) For the trailing 25 year period ended 5/31/24, the Total Fund has returned 6.49% versus the Total Fund Custom Benchmark return of 6.58%.

*Real Estate and Alternatives market values reflect current custodian valuations, which are typically lagged approximately 1 quarter.

FYTD Fiscal Year to Date
CYTD Calendar Year to Date
LTM Last Twelve Months

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of May 31, 2024, with the distribution as of April 30, 2024. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

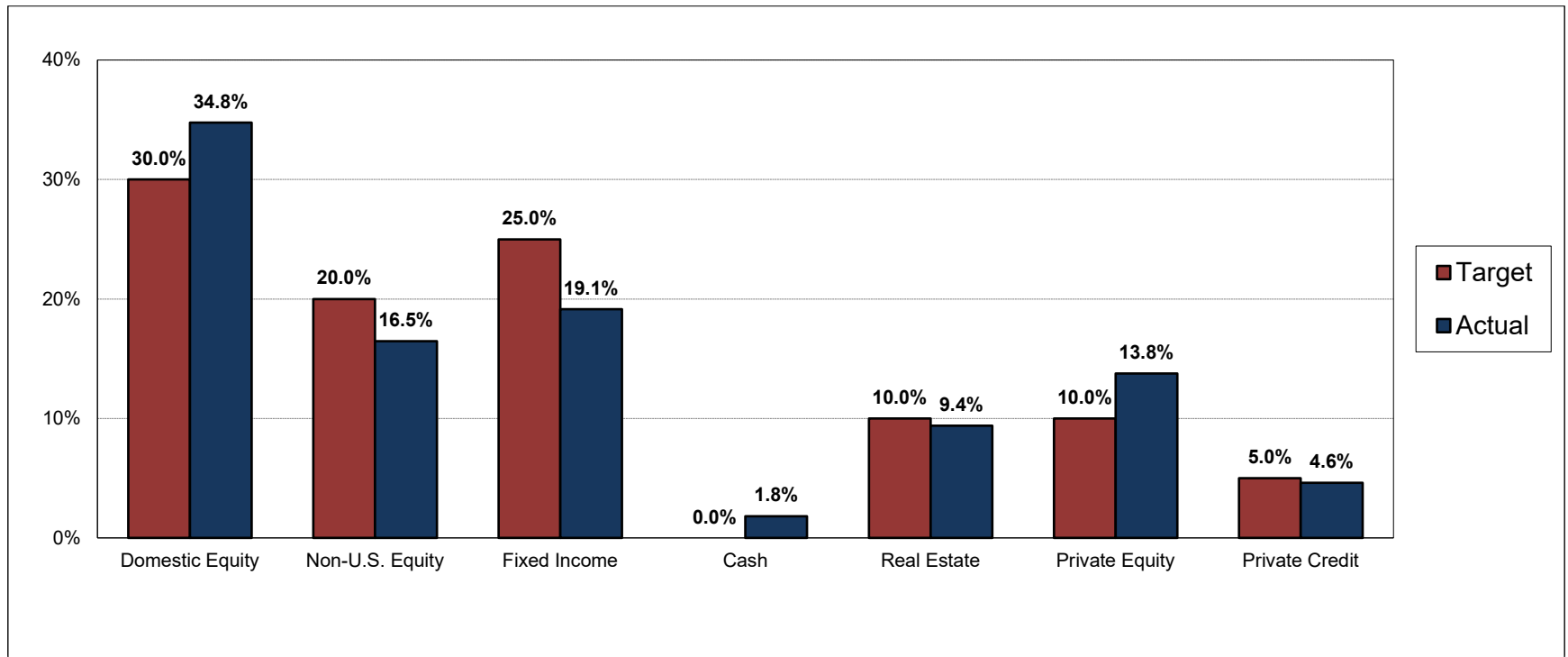
Asset Distribution Across Investment Managers

	May 31, 2024		Net New Inv.	Inv. Return	April 30, 2024	
	Market Value	Weight			Market Value	Weight
Total Domestic Equity	\$3,880,606,075	32.03%	\$(175,000,000)	\$180,852,495	\$3,874,753,580	32.71%
Large Cap Domestic Equity	\$2,225,594,288	18.37%	\$(175,000,000)	\$108,229,215	\$2,292,365,072	19.35%
Blackrock S&P 500	2,225,594,288	18.37%	(175,000,000)	108,229,215	2,292,365,072	19.35%
SMid Cap Domestic Equity	\$716,975,067	5.92%	\$0	\$27,589,396	\$689,385,671	5.82%
AllianceBernstein	452,178,028	3.73%	0	18,149,290	434,028,738	3.66%
TSW	264,797,039	2.19%	0	9,440,106	255,356,933	2.16%
Small Cap Domestic Equity	\$938,036,720	7.74%	\$0	\$45,033,884	\$893,002,837	7.54%
Boston Trust	239,629,160	1.98%	0	7,401,233	232,227,928	1.96%
Segall Bryant & Hamill	262,707,371	2.17%	0	11,841,385	250,865,987	2.12%
Wellington	435,700,189	3.60%	0	25,791,266	409,908,923	3.46%
Total Non US Equity	\$2,325,831,798	19.20%	\$(86)	\$77,597,642	\$2,248,234,242	18.98%
Core Non US Equity (1)	\$1,423,485,150	11.75%	\$(86)	\$52,367,687	\$1,371,117,548	11.57%
Aristotle	181,743,544	1.50%	0	7,351,564	174,391,980	1.47%
Artisan Partners	409,242,699	3.38%	0	13,613,564	395,629,135	3.34%
BlackRock Superfund	199,680,382	1.65%	0	5,738,432	193,941,950	1.64%
Causeway Capital	460,094,253	3.80%	(86)	20,473,490	439,620,849	3.71%
Lazard	172,063,175	1.42%	0	5,180,681	166,882,494	1.41%
Emerging Markets	\$178,271,324	1.47%	\$0	\$2,976,152	\$175,295,172	1.48%
Wellington Emerging Markets	178,271,324	1.47%	0	2,976,152	175,295,172	1.48%
Non US Small Cap	\$141,870,480	1.17%	\$0	\$6,128,465	\$135,742,014	1.15%
Wellington Int'l Small Cap Research	141,870,480	1.17%	0	6,128,465	135,742,014	1.15%
Global Equity	\$582,204,844	4.81%	\$0	\$16,125,337	\$566,079,507	4.78%
Walter Scott Global Equity	582,204,844	4.81%	0	16,125,337	566,079,507	4.78%
Total Fixed Income	\$2,318,771,064	19.14%	\$0	\$37,879,710	\$2,280,891,354	19.25%
BlackRock SIO Bond Fund	268,290,457	2.21%	0	3,164,212	265,126,246	2.24%
Brandywine Asset Mgmt	223,101,598	1.84%	0	5,103,173	217,998,425	1.84%
FIAM (Fidelity) Tactical Bond	372,400,349	3.07%	0	6,265,147	366,135,202	3.09%
Income Research & Management	777,592,847	6.42%	0	12,440,405	765,152,441	6.46%
Loomis Sayles	287,132,813	2.37%	0	4,722,009	282,410,804	2.38%
Manulife Strategic Fixed Income	214,062,461	1.77%	0	3,235,630	210,826,832	1.78%
Mellon US Agg Bond Index	176,190,539	1.45%	0	2,949,134	173,241,405	1.46%
Total Cash	\$220,950,669	1.82%	\$188,876,246	\$757,998	\$31,316,426	0.26%
Total Marketable Assets	\$8,746,159,607	72.20%	\$13,876,160	\$297,087,845	\$8,435,195,602	71.20%
Total Real Estate	\$1,139,332,665	9.41%	\$(20,516,928)	\$498,719	\$1,159,350,874	9.79%
Strategic Core Real Estate	682,641,113	5.64%	(24,230,890)	(2,291)	706,874,295	5.97%
Tactical Non-Core Real Estate	456,691,551	3.77%	3,713,963	501,010	452,476,578	3.82%
Total Alternative Assets	\$2,228,249,638	18.39%	\$(14,190,020)	\$(9,852,231)	\$2,252,291,888	19.01%
Private Equity	1,668,720,573	13.78%	(3,473,064)	(9,924,194)	1,682,117,831	14.20%
Private Debt	559,529,065	4.62%	(10,716,956)	71,963	570,174,057	4.81%
Total Fund Composite	\$12,113,741,910	100.0%	\$(20,830,788)	\$287,734,333	\$11,846,838,364	100.0%

-Alternatives market values reflect current custodian valuations, which may not be up to date.

(1) Includes \$661,096 in legacy assets that are not actively managed and in liquidation following the termination of Fisher Investments.

Class Targets vs. Actual Allocation as of May 31, 2024 (Preliminary)



Source: NHRS

Asset Class Allocations Relative to Policy Targets and Ranges



As of May 31, 2024 (preliminary)

Asset Class	Range	Allocation			Objective	Comments
		Target	Actual	Variance		
Domestic Equity	20 - 40%	30.0%	34.8%	4.8%	Monitor	No immediate action needed.
Non-U.S. Equity	15 - 25%	20.0%	16.5%	-3.5%	Monitor	Below target allocation but within approved allocation range. Continue to Monitor.
Fixed Income ²	20 - 30%	25.0%	19.1%	-5.9%	Monitor	Below target allocation but within approved allocation range when cash is included.
Cash ²	NA	0.0%	1.8%	1.8%	No Action	Minimal cash balance to provide liquidity, as needed, for annuities, capital calls, and other plan needs.
Real Estate (RE) ¹	5 - 20%	10.0%	9.4%	-0.6%	Monitor	No immediate action needed.
Private Equity ¹	5 - 15%	10.0%	13.8%	3.8%	Monitor	No immediate action needed.
Private Credit ¹	0 - 10%	5.0%	4.6%	-0.4%	Monitor	No immediate action needed.
		100.0%	100.0%	0.0%		

¹As reported on the May 31, 2024 Callan Monthly Review.

²The Investment Team will adjust the allocation within the target ranges at the conclusion of the ongoing implementation plan for Global Fixed Income.

Source: NHRS

Strategic Plan for NHRS Investment Office

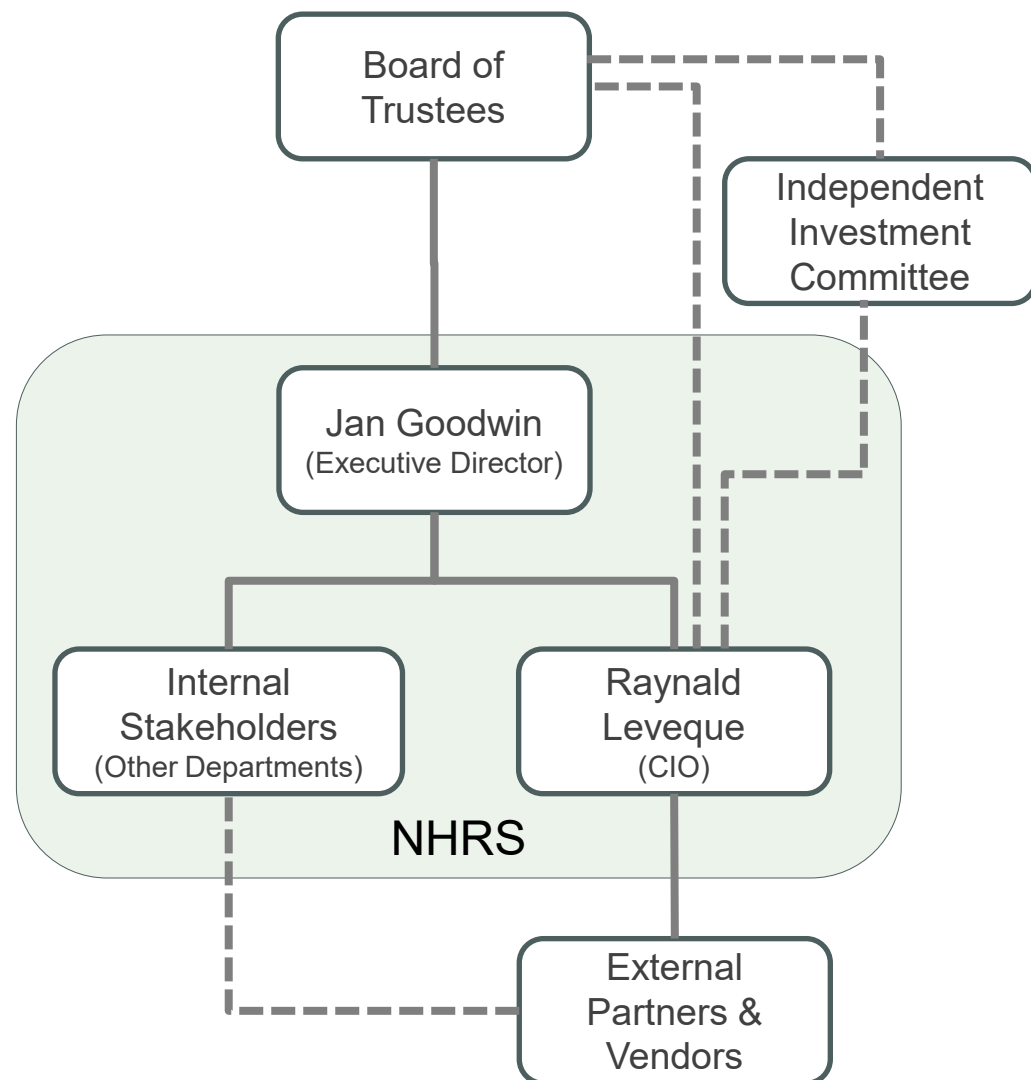
Raynald Leveque, Chief Investment Officer
July 2024 IIC Meeting

Objectives of this Strategic Plan



- **Outline a long-term strategic plan** that includes goals, actions, and direction for the NHRS Investment Office, who are the professionals delegated with the power and discretion of the plan fiduciaries to manage and oversee plan assets
- Detail the transformation of an Investment Office that will **adequately execute the fiduciary duty** to manage all aspects of the NHRS investment program
 - **Define a strategic direction** to enhance our operational infrastructure to enable NHRS to more adequately fulfill its fiduciary duty to maximize returns
 - **Recommend the structure** of the Investment Office (employees, systems, services, etc.) necessary to execute its duties delegated by the plan fiduciaries
 - **Develop our capabilities** to bring some investment decision-making in-house and reduce reliance on external consultants and advisors
- Why? – this strategic plan is expected to **improve investment oversight, manage plan risk, and optimize human and technological resources to drive stronger long-term performance** for the total plan

- **NHRS assets are invested pursuant to the Constitution of the State of New Hampshire** to provide plan benefits to members and beneficiaries
- Board of Trustees & Independent Investment Committee **seek advice from both internal and external investment professionals** to discharge their fiduciary duty
- CIO leads the Investment Office under the direction of the Board & Investment Committee along with investment professionals
- The Investment Office works with internal stakeholders, external partners, and vendors in the management and oversight of plan assets



- **1967:** NHRS established (RSA 100-A)
- **2007:** Commission created to study long-term viability of NHRS
 - Several recommendations were made which were subsequently enacted into law
- **2008:** Final year Board of Trustees makes all investment decisions
 - Retains approval of Strategic Asset Allocation (SAA) and hiring of consultants
- **2009:** Independent Investment Committee (IIC) established
 - IIC to consist of no more than five voting members, all with significant finance and investment experience
 - Reviews and recommends SAA to Board for approval
 - Hiring & firing decision for specific investment management firms
 - Monitors all managers on a periodic basis
 - Decision to select custodian bank for NHRS

- **2010 - 2022:** Director of Investments retained to lead investment team and provide expertise to IIC
 - 2010: Creation of investment team
 - 2010: Restarted and rebuilt private investments programs
 - 2010: Worked closely with Townsend to transition real estate portfolio from direct properties to a diversified investment program
 - 2010 – 2012: Restructured entire marketable portfolio to institutional grade portfolio
 - 2012: Established new asset class – Private Credit (5% Target)
- **2022 - Present:** Director of Investments retires. NHRS hires Chief Investment Officer to lead investment program
 - 2024: NHRS engages Funston Advisory Services to review Investment Office strategic plan

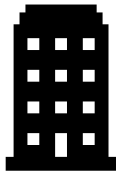
- **Current dynamics** of operating model **before October 2022**
 - Investment recommendations centralized around the Director of Investments, and general investment consultant
 - The Director of Investments led investment diligence and prosecution of mandates with support from the Investment Team
 - Manager selection is a collaboration between Investment Team and general consultant to source and diligence managers. General consultant leveraged to provide extensive underwriting of mandates
 - Investment staff focused on both investment and operational activities
- Investment administration is **significantly outsourced**
 - One discretionary advisor for Real Estate portfolio (asset class is 100% outsourced to advisor)
 - Investment analytical systems completely outsourced to custody bank
 - Legal function for investment mandates and contracting outsourced to external counsel
 - Reporting for Investment Team, Board and IIC outsourced to general consultant
 - Post-Trade Compliance, Proxy Voting, and Securities Litigation outsourced to external vendors

- The next stage for NHRS is to move from an Investment Team to an Investment Office
 - **Attracting & retaining experienced staff** to support both operations and asset management of complex portfolios & strategies
 - **Investing in internal systems** to broaden out support of the investment management function and analysis capabilities at the manager and asset class level
 - **Broadening our** internal investment manager selection, **underwriting** investment mandates, and investment and operational manager **due diligence**
 - **Reducing reliance** on external investment advisors and investment consultants to source and underwrite mandates
- Considerations
 - Implementation of an in-house investment function requires **building our infrastructure** (e.g., technology, analytical systems, reporting capabilities)
 - **Expanding access to specialist consultants** to support our manager selection and investment diligence in private markets
 - **Leveraging cost-effective structures** like co-investments while reducing the number of managers where appropriate without compromising diversification
 - Continuing to **outsource essential non-core functions**, freeing up time to focus on investment activities that add the most value to reduce overhead while generating strong long-term investment performance

External Partners & Vendors



Investment
Managers



Investment
Advisor



General
Investment
Consultant



Custodian



Ext.
Legal
Counsel



Various
Investment
Service
Providers

Internal Stakeholders



Finance &
Accounting



Technology



Legal



Compliance
& Audit

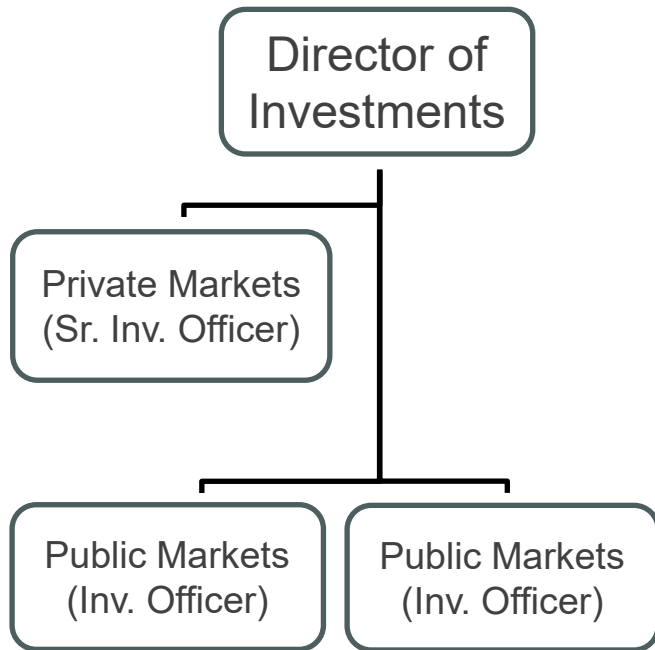


Comms.

2022 Team Structure and Functions



Investment Dept. = 4 F/T



LP Advisory Meetings ◆
Investment Due Diligence ■
Operational Due Diligence ○

Investment Managers
(front-office)

Performance Attribution ○
Post-Trade Compliance ●
Cash Management ●
Capital Call Processing ●

Custodian

Class Actions ■
Proxy Voting ●

Proxy Voting Advisor

Real Estate Portfolio ○

Investment Advisor

Performance Reporting ○
Guidelines Compliance ◆

Investment Managers
(back-office)

Contract Terms ◆
LPA Reviews ■
LPA Amendments ■
GP Consents ■

External Legal Counsel

Sourcing Managers ■
Asset Allocation ■
Manager Reporting ○
Manager Monitoring ◆
Special Analysis ■

General Investment Consultant

Board / IIC Reporting ◆
RTK Requests ■

Comms
(NHRS)

Capital Calls Processing ■
Expense Management ●
Fee Transparency ●
CAIR Reporting ●

Finance & Accounting
(NHRS)

Investment Functions *Operational Functions*

○ No Staff Involvement
 ● Low Staff Involvement
 ■ Medium Staff Involvement
 ◆ High Staff Involvement

- Functional Separation of Critical Activities
 - **Break apart operational activities from investment activities**
 - **Optimize each function** to generate efficiencies for investment management of the portfolio and manage risk through processes and structure improvements
- Expand infrastructure and capabilities to support Investment Office activities
 - **Add and develop internal professionals** to support activities that reduce reliance on external partners
 - **Revise our investment roles** to align with an optimized structure
 - Invest in the Investment Office technology infrastructure
 - **Utilize investment technology and analytics** where applicable and cost-effective to drive investment decision-making
 - Centralize our transaction knowledge by investing in other areas of NHRS (e.g., in-sourcing our legal advisory work)
 - **Manage and protect our own data** in-house to mitigate risk
- The Investment Office will **continue to utilize investment consultants** for independent diligence work on mandates in both public and private market mandates and reporting on investment performance

Proposed Separation of Functions

Front-Office

Asset Class Strategy ◆
Asset Class Implementation ◆◆
Manager / Portfolio Analysis ◆◆

Investment Team

LP Advisory Meetings ◆◆
Investment Due Diligence ◆◆
Operational Due Diligence ◆◆
Sourcing Managers ◆

Investment Managers
(front-office)

Asset Allocation ◆◆
Manager Monitoring ◆◆
Special Projects ■
Manager Reporting ○

Gen. Investment Consultant

Private Markets Diligence ◆◆
Special Projects ■

Private Markets Consultant

Middle-and-Back Office

Performance Attribution ◆◆
Post-Trade Compliance ●
Cash Management ●
Capital Call Processing ●

Custodian

Performance Reporting ◆◆
Investment Analytics ◆◆
Cap Calls & Distributions ■

Investment Managers
(back-office)

Capital Calls Processing ■
Expense Management ●
Fee Transparency ●
CAIR Reporting ●

Finance & Accounting
(NHRS)

Contract Terms ◆◆
LPA Reviews ◆◆
LPA Amendments ◆◆
GP Consents ◆

Legal
(NHRS)

Board / IIC Reporting ◆◆
RTK Requests ■

Comms
(NHRS)

Business Analysis ●
Investment Systems ●

Info. Tech
(NHRS)

External

Class Actions ■
Proxy Voting ●

Proxy Voting Advisor

Real Estate Portfolio ●

Investment Advisor
(front-office)

Contract Terms ●
LPA Reviews ●
LPA Amendments ●
GP Consents ●

External Legal Counsel

Investment Functions Operational Functions

- No Staff Involvement
- Low Staff Involvement
- Medium Staff Involvement
- ◆ High Staff Involvement

- **Expand headcount** to support Investment Office activities across NHRS
 - Continue to **develop internal investment professionals** within NHRS departments to support the Investment Office
 - **Add one** senior private markets professional, and **two** investment services analysts to the existing investment team
 - **Add up to two** Finance & Accounting professionals with investment accounting experience
 - **Add one** Legal professional with securities and investment experience
 - **Add up to two** Information Technology professionals to assist in implementing systems for investment management, analysis, and reporting

- Current state of Investment Technology & Capabilities
 - **Investment Office relies on custodian bank for analytics** – no in-house system at NHRS
 - Exposures, performance, attribution, characteristics are sourced from custodian bank reporting platform
 - Paper reports for manager attribution, characteristics and performance are prepared by the general investment consultant
 - **All portfolio data comes from custodian bank** with individual investment managers and general consultant
 - **Inefficiencies and delays** for Investment Office to perform any portfolio what-if and asset class analyses, or special projects without involving an outside consultant
 - **Accounting capabilities can be enhanced** for investment management, including detailed fee monitoring for private markets
- **Recommend investing in our internal analytics systems** with tools to analyze the total plan (both public and private assets) and centralize investment data
 - Increase ability for staff to manage investment risk, while driving internal decision-making on manager analysis and selection
 - Enable staff to analyze total plan, asset classes, and portfolio exposures
 - Expand investment technology solutions to Accounting & Finance areas

Cost Benchmarking of Oversight Function



- NHRS engaged CEM Benchmarking to perform investment cost benchmarking for the Total Plan over the past five years (2023 - 2018)
 - Given resource challenges and data availability, NHRS expects to complete the 5-year cost benchmarking by the end of this year
 - CEM was able to analyze oversight costs for calendar year 2022 for comparison against a peer universe selected by CEM (12 U.S. public sponsors with AUM from \$2.9B to \$24.3B)
- NHRS calendar year 2022 cost impact below versus peer group reveals **lower expenses for oversight (staffing), consulting, and higher “other” expenses (vendors, external legal counsel)**

Calendar Year 2022 Cost Impact Relative to CEM Peer Group

Style	Your avg holdings (mils)	Cost in bps			Cost/ -Savings	
		Your	Peer median	More/ -less	\$000s	bps
Oversight, custody and other costs*						
Oversight		0.8	1.3	-0.5		
Trustee & custodial		0.6	0.6	0.0		
Consulting		0.7	0.9	-0.2		
Audit		0.2	0.1	0.1		
Other		0.6	0.2	0.4		
Benchmark for oversight, custody, other	10,744	2.9	3.0	-0.1	-113	-0.1 bp

Source: Draft CEM Benchmarking Report (for the 1-year period ending December 31, 2022)

Other: NHRS includes external legal fees, plan insurance, trade monitoring and proxy voting services

* Benchmarks for oversight total and individual lines are based on peer medians.

- Investment office should be viewed as a **Profit Center** versus “Cost Center”
 - Continual re-investment in the Investment Office and supporting system departments will **strengthen our execution of our fiduciary duty to maintain and grow plan assets**
- Retain Existing Staff / Attract Investment Talent to NHRS
 - **Development and retention of existing staff through competitive compensation** will support a more robust investment office with expertise to further in-source development of recommendations for portfolio and total plan
- Better oversight will support risk management by:
 - **Robust monitoring** of investment managers and advisors across portfolio
 - **Reduction of external investment expenses** over the long term through building internal capabilities

- **NHRS engaged Funston Advisory Services to review the NHRS Investment Office Strategic Plan** and present their findings to the Investment Team, the NHRS Executive Team, Independent Investment Committee (IIC) and Board of Trustees (Board)
- CIO recommends the IIC and Board approve this strategic plan, inclusive of FAS' recommendations to build out the NHRS Investment Office **over the next two to three years:**
 1. **Increase staffing with competitive compensation** across the various departments:
 - Investments (+3 professionals) per page 12
 - Finance & Accounting (+1 to 2 professionals)
 - Legal (+1 professional)
 - Information Technology (+1 to 2 functional supports)
 2. **Increase investment in our technology infrastructure** to add investment tools and capabilities supporting Investments decision-making and related activities (e.g., monitoring, validation)
 3. **Evaluate internal and external cost structures** and optimize to enhance oversight while **generating long-term strong investment performance**

New Hampshire Retirement System Investment Office Strategy Review

NHRS Independent Investment Committee

July 9, 2024



Overview

Funston Advisory Services (FAS) was retained to:

- Perform a high-level review of the assumptions outlined in the NHRS investment strategic plan.
- Provide constructive feedback and observations based upon peer comparisons and experience with other public retirement systems.
- Identify key critical success factors and risks to implementation of the proposed investment strategic plan.
- Construct an implementation roadmap ([Exhibit 1](#)) that identifies projected timing, milestones, responsibilities, and resource requirements. Key enhancements include:
 - **People:** Staffing and Skills Requirements, Position Description Development, Compensation Benchmarking, Organizational Design, Recruitment
 - **Process:** Multifunction Operational Model, Separation of Responsibilities, Policy and Process Documentation Development, Identification and Construction of Key Controls
 - **Data and Systems:** Application and data architecture development, capital budgeting, onboarding of consultants, RFP development and product selection (in phases); planning, implementation and integration.
- Review findings with NHRS Staff, Independent Investment Committee, and Board of Trustees.

Context – NHRS Compared to Peers

- NHRS has the most common governance structure among U.S. public retirement systems:
 - A single fiduciary board responsible for investments and benefits administration;
 - The Executive Director as the single operating report to the board;
 - Four trustees with experience in finance and investments, more than most peer boards;
 - Most typical governance policies and practices; and
 - Employing an internal Chief Investment Officer and investment staff to manage investments.
- NHRS is unusual in having a separate Independent Investment Committee in addition to its fiduciary Board of Trustees.
- There are several areas where NHRS has lagging policies and practices:
 - NHRS operates under the “prudent person” standard; most peers use the “prudent investor” or “prudent expert” standard;
 - The Board lacks direct authority to set compensation for non-management investment staff;
 - NHRS does not use compensation consultants to periodically benchmark staff compensation; and
 - Lack of periodic review of investment management cost structure by independent third-party services.

Investment Office Peer Practices

- There are multiple investing models among similar scale peer funds which all appear to have some success (see [Exhibit 2](#))
- The investing model needs to be consistent with the governance model.
- The NHRS asset allocation and portfolio complexity are similar to most of the systems in this peer group*.
- The AUM range of \$10-15 billion appears to be the point where many funds begin to build their internal investing capabilities to transition to a more sophisticated model and to support more complex portfolios.
- With 5 Investment Office staff and \$12.3 billion in AUM, NHRS is consistent with some peers, but at about the level where many peers begin to build Investment Office staff capabilities.
- Peer systems with larger investment office staffs tend to have more investment officers with asset class specialization, at least a public vs. private focus.

**Information based on publicly-available documents (IPS and annual reports)*

Assessment of the Draft NHRS Investment Strategic Plan

- The overall goals and approach for the NHRS investment office appear sound and appropriate based upon the size of assets under management and complexity of the portfolio.
- Enhancing utilization of portfolio information and reducing reliance on external service providers are consistent with the evolution of larger-sized plans.
- Implementation of the plan should significantly:
 - Enhance portfolio oversight;
 - Improve compliance and controls; and
 - Strengthen staff recruitment, development, and retention.
- Near-term increases in investment management expenses will be necessary to address increased investments in private markets, hire new staff and acquire technology.
- The approach in this plan should provide flexibility and optimization of current resources while minimizing disruption to ongoing processes.

Proposed NHRS Investment Operating Model (Sample Responsibilities*)

LEGAL*

**INVESTMENT
MANAGEMENT**

**FINANCE AND
ACCOUNTING**

**INFORMATION
TECHNOLOGY***



*PORTFOLIO CONSTRUCTION
INVESTMENT DUE DILIGENCE
FUND / ADVISOR SELECTION
ASSET ALLOCATION
REBALANCING
PORTFOLIO MANAGEMENT
INVESTMENT CONSULTANT
UTILIZATION*

FRONT OFFICE

*OPERATIONAL DUE
DILIGENCE OVERSIGHT
PERFORMANCE AND
ATTRIBUTION
DATA STEWARDSHIP
BOARD AND ADHOC
REPORTING
CHANGE MANAGEMENT
COMPLIANCE MONITORING*

MIDDLE OFFICE

*CASH MANAGEMENT
ACCOUNT MAINTENANCE
FEE BILLING
CAPITAL CALLS AND
DISTRIBUTION
SUBSCRIPTIONS /
REDEMPTIONS*

*PROJECT MANAGEMENT
VENDOR MANAGEMENT
INTERFACE / API DESIGN
AND DEVELOPMENT
BUSINESS SYSTEMS ANALYSIS*

BACK OFFICE

*VALUATION
CUSTODIAL OVERSIGHT
RECONCILIATION
ACCOUNTING BOOK OF
RECORD (ABOR)
ANNUAL CONSOLIDATED
FINANCIAL REPORT (ACFR)
PRODUCTION*



*LEGAL DUE DILIGENCE
IMA / LPA / SIDE LETTER
EXECUTION
IPS DEVELOPMENT SUPPORT
VENDOR CONTRACTING
OUTSIDE COUNSEL
MANAGEMENT
COMPLIANCE ASSURANCE
TAX RECLAIM FILINGS
PROXY VOTING
CLASS ACTIONS*

** LEGAL AND INFORMATION TECHNOLOGY SUPPORT PROVIDED TO INVESTMENT FRONT-, MIDDLE-, AND BACK-OFFICES*

****See Exhibit 3 – New Positions and Job
Responsibilities for additional details***

Front-Office Actions Required

- Recruit and develop senior-level staff and offer competitive compensation structure.
- Organize and optimize investment coverage by senior professionals across asset classes and managers based on expertise and experience.
- Refine the roles of investment professionals of Senior Investment Officer and Investment Officer(s) to focus on asset class strategy, investment ideas development and implementation (oversight, sourcing, due diligence, and monitoring).
- Proactively shift operational responsibilities to investment services to maximize time spent on investment-focused activities.
- Elevate the expertise of the investment team by actively participating in educational opportunities such as ILPA Institute, pursuing the CFA designation, attending industry conferences, seeking insights from investment consultants and engaging in ongoing professional development.

Middle- and Back-Office Actions Required

- Create new Investment Services Analyst position(s) in the investment office; add two analysts to perform analytics, attribution, reporting, compliance, and change management responsibilities necessary to support portfolio growth over the horizon of the strategic plan.
- Hire two new Investment Operations Analysts in Investment Accounting (Finance and Accounting) responsible for both traditional middle- and back-office investment operational functions.
- Hire one internal investment attorney to support the investment lifecycle, legal diligence, deal consummation, counterparty relationships, and other support functions.
- Identify a Project Manager in the Information Technology Department to be the single point of coordination and plan management of major initiatives, especially those requiring the introduction of new business systems.
- Identify an IT Investment Business Systems Analyst as a subject matter and technology solutions resource for new investment initiatives, ongoing management of upgrades, and introduction and modifications of new functionality of investment business systems.

See [Exhibit 3](#) for job responsibilities

Investment Business Systems Actions Required

- Enhance the Investment Accounting and General Ledger System to deliver (straight through processing) capabilities to reduce dependence on spreadsheets and manual processing.
- Explore investment accounting reporting capabilities for the Accounting Book of Record (ABOR).
- Seek a standalone or integrated data mart solution from a 3rd party vendor in lieu of constructing it from scratch.
- Invest in the establishment of a referential data dictionary to enable multivariate analytics and attribution capabilities across the spectrum of security and account level attributes.
- Conduct an RFP (Phase I) for an integrated data mart, performance and attribution and ad hoc reporting system.
- Conduct RFPs (Phase II) for a contact and document management solution, and a portfolio risk analytics system.
- Develop a phased implementation plan for introducing new capabilities to mitigate risk and accelerate functionality rollout.
- Engage investment business consultants as needed to execute steps in the implementation plan.

Advisors and Service Provider Actions Required

- Engage with the current investment consultant to identify potential untapped service offerings (junior consultant to assist with analytics, risk management capabilities, etc.)
- Clarify operational due diligence proficiencies of the current investment consultant.
- Assess whether additional asset class consulting specialists or operational due diligence specialists are needed and, if so, develop and issue an RFP and select an advisor(s).
- Identify private market investment fee validation requirements, develop an RFP, and engage a third party.
- Consider adopting a contact management system to manage information and documentation on existing and prospective investment managers (see Investment Business Systems Needs).
- Continue to use existing external support services for transaction cost monitoring and proxy voting.

Investment Cost Management Actions Required

- Retain CEM Benchmarking to periodically review investment fees and expenses and related performance.
- Evaluate the fee structures of current portfolio holdings to align with maximizing investment performance while balancing cost efficiency.
 - Reassess portfolio or asset allocation implementation, e.g.:
 - Active versus passive management;
 - Direct holdings; and
 - Fund-of-fund, Fund-of-one structures.
 - Refine the number of external managers and increase the average commitment level to gain economic efficiencies (as needed).
 - Continue to optimize lower fees with existing managers where possible.
- Efficiently grow the co-investment program in private markets .

Critical Success Factors, Risks, and Benefits

- Achievement of the goals and objectives of the NHRS Investment Strategy is highly dependent on the ability of the organization to attract and retain talent by:
 - Establishing competitive compensation levels;
 - Recruiting experienced talent for specialized investments, investment services, technology support, and legal; and
 - Developing career paths for long-term growth and retention .
- Budget increases in the near-term are essential to establishing more advanced, end-to-end investment capabilities for NHRS and to creating an operating model commonly observed in peers of similar size
 - Establishing a larger front-office investment team;
 - Creating internal investment middle- and back-office capabilities;
 - Contracting for IT resources
 - Increasing internal legal support services; and
 - Acquiring and implementing third-party software services.
- Additional expenses should be offset by both quantitative improvements (e.g., reduction in external management and investment consulting fees) and by qualitative enhancements that are designed to improve decision making at the overall portfolio, asset class, and investment levels.
- Implementation of the plan will require several years to be fully realized; however, actions would be structured to deliver incremental benefits through sequencing of projects to mitigate implementation risk.

Assumptions and Objectives

Investment Office Strategy Assumptions

- A. The overall NHRS governance structure and policies will remain unchanged.
- B. Investment decision-making will shift more emphasis to internal staff from consultants.
- C. Build more internal capabilities (people and systems) for:
 - 1. Sourcing, underwriting, due diligence, monitoring, and oversight of total plan (excluding real estate);
 - 2. Development of asset class strategies;
 - 3. Investment analytics for total fund and both public and private markets funds; and
 - 4. Internal investment analytics to include, but not be limited to, exposure, performance, attribution, and risk analysis.
- D. Significantly change the approach for utilizing external advisors and other service providers:
 - 1. Reduce reliance on the general investment consultant for sourcing and underwriting in public and private mandates and recommendations;
 - 2. Engage additional specialist consultant(s) for sourcing , underwriting, and operational due diligence (ODD) in private markets and other investment strategies (as needed);
 - 3. Improve the effectiveness of investment fee validation and monitoring of the total portfolio; and
 - 4. Create a “golden source of data” available to investment applications.

Investment Office Strategy Assumptions (cont'd)

E. Reduce overall investment management costs:

1. Reduce the number of external managers and increase the average commitment level to gain economic efficiencies;
2. Look for opportunities to efficiently grow the co-investment program in private markets; and
3. Renegotiate fees with existing managers where possible.

F. In-source some legal advisory and transaction work, IT support, accounting and finance:

1. Contracting and contact management (consider acquiring a contact / document management system);
2. Compliance, class actions, litigation, tax reclamation, GP consents, proxy voting; and
3. Cash management support, Treasury functions, cash forecasting, fee invoicing.

Key Elements of the NHRS Investment Strategic Plan

PEOPLE <ul style="list-style-type: none">• Develop new positions across investment front-, middle-, and back-office.• Utilize compensation benchmarking in setting compensation to attract talent.• Formalize career pathing for investment management, investment servicing, and investment accounting resources.	PROCESS <ul style="list-style-type: none">• Establish policies and practices for investment front-, middle-, and back-office processes.• Develop detailed process documentation across investment management, accounting and legal.• Build out investment compliance capabilities in design, execution and monitoring.
DATA <ul style="list-style-type: none">• Capture, integrate and classify investment referential, positional, and transactional data to support intelligence and insights from technological investments.• Leverage 3rd party data mart capabilities to enhance configuration of data to provide better insights into investment portfolio.	SYSTEMS / TECHNOLOGY <ul style="list-style-type: none">• Acquire investment performance and attribution reporting capabilities to provide roll up and drill down investment analytics.• Acquire investment risk analysis capabilities to mitigate concentration and exposure risk.

Plan Assessment: Front-Office

Objectives:

- Integrate investment best practices to meet the future growth of assets under management.
- Augment and oversee advisors and consultants in generating investment ideas, implementing strategies, and managing investment reporting and analytics
- Enhance investment proficiency to align with recently approved strategic asset allocation objectives.
- Empower the investment team to transform existing information into actionable intelligence, enabling informed and differentiated investment insights.
- Optimize investment expenses and enhance long-term returns.
 1. Streamline finance and accounting functions to enhance effective monitoring;
 2. Periodic peer review of investment management costs by independent third-party services (i.e., CEM);
 3. Refine the number of external managers and increase the average commitment level to gain economic efficiencies (as needed);
 4. Look for opportunities to efficiently grow the co-investment program in private markets; and
 5. Continue to focus on minimizing fees with existing managers and general partners.

Plan Assessment: Front Office

Staffing Actions Required:

- Hire a senior private markets specialist to increase oversight, streamline execution, and implement the increased strategic allocation to this asset class.
 - Private Credit increases from 5% to 10%, Private Equity remains at 10%.
 - Establish infrastructure allocation of 5%.
 - Expected increase of fund relationships and commitments will nearly double over the next ten years as projected by Callan in the most recent private markets pacing plan.

	2023		2033	
	GP	Commitments	GP	Commitments
Private Equity	21	50	38	84
Private Credit	17	31	27	56
Infrastructure			10	15
Total	38	81	75	155

Source: Callan

- Hire an Investment Analyst to support the analytical and monitoring needs of investment team; and
- Leverage the planned two Investment Services Analyst(s) for those functions and additional investment services support on an as-needed basis [see [Exhibit 3](#)].

Plan Assessment: Middle- and Back-Office (Investment Support)

Objectives:

- Properly support the goals of the future investment management organization.
- Achieve effective segregation of duties between the investment front-office and investment support departments to improve compliance risk preventive controls.
- Promote the expansion of investment services capabilities in Investment Management, Information Technology, Finance and Accounting, and Legal departments to enable achievement of strategic plan objectives.
- Free up the capacity of investment management front-office staff to support the increase in public and private investments within the NHRS portfolio.
- Clarify job descriptions and establish a career progression path for NHRS professionals.
- Promote recruiting and onboarding efforts as a key prerequisite task to executing the steps of the strategic plan.

Plan Assessment: Investment Business Systems Needs

Objectives:

- Implement an integrated, cost-effective investment systems infrastructure to support investment management capabilities required to meet the goals of the strategic plan (i.e., cost reduction, improved long-term investment performance, enhanced internal capabilities).
- Leverage roles and responsibilities across investments and investment support functions.
- Achieve prevailing industry practice levels in the management and utilization of common investment data (i.e., referential, positional, transactional, and performance).
- Become more self-sufficient in the execution of higher-level investment functions – i.e., performance measurement, attribution, and risk analytics, and establish the flexibility to be proficient in responding rapidly to ad hoc analytical needs.
- Establish a capital budget for investment business systems initiatives in line with comparably-sized public pension systems.
- Create efficiencies in and support of external advisor / fund due diligence and the ongoing management of portfolio funds.
- Mitigate implementation and ongoing support risk through phasing.

Plan Assessment: Use of Advisors and Service Providers

Objectives:

- Increase internal staff capabilities to complement investment consultant capabilities in sourcing, underwriting, due diligence, reporting of investment decisions.
- Engage additional specialist consultants for sourcing, underwriting, and operational due diligence (ODD) in private markets and other investment strategies (as needed).
- Improve the effectiveness of investment fees validation and monitoring for total portfolio.
- Identify a “golden source” of investment data available to internal systems (see Investment Business Systems Needs).

Exhibits

Exhibit 1 - Implementation Roadmap

Initiative	FY2025				FY2026				FY2027			
	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4
Front Office:												
1. Determine investment team coverage	X											
2. Redefine focus responsibilities of Senior Investment Officers and Investment Officer(2)	X											
3. Recruit and hire: Private Markets Specialist		X										
4. Shift operational duties to Investment Services and Operations Team	X	X	X									
5. Continuing education of investment Staff	Ongoing											
Use of Advisors and Service Providers:												
1. Engage with Callan to enhance analytics capabilities and services	X											
2. Issue RFP for specialist consultant in private markets				X								
3. Retain and integrate private markets specialist consultant					X							
4. Develop and issue RFP for fee validation (privates)				X								
5. Engage with a third-party fee validation service					X							

Exhibit 1 - Implementation Roadmap


Initiative	FY2025				FY2026				FY2027			
	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4
Investment Support:												
1. Write Position Descriptions for New Positions in Investments, Accounting, IT and Legal	X	X										
2. Benchmark and Establish Compensation Targets for New Positions	X	X										
3. Recruit and Onboard 1 st Tranche of New Investment Support and Operations Positions		X	X									
4. Recruit and Onboard 2 nd Tranche of New Investment Support and Operations Positions							X	X				
Investment Technology Solutioning:												
1. Engage 3 rd party consultant to perform deeper dive on application architecture and to develop RFI/RFP for proposed data mart, performance reporting and attribution solution		X	X									
2. Draft and distribute RFI/RFP and research solutions in the marketplace			X	X								
3. Perform analysis and select solution provider(s)				X	X							
4. Develop implementation plan				X	X							
5. Execute implementation plan						X	X	X	X	X	X	
6. Enhance / upgrade solution for accounting / ABOR / GL							X	X	X	X	X	
7. Perform RFPs for risk / portfolio analytic and contact and document management solutions					X	X						

Exhibit 1 - Implementation Roadmap

Initiative	FY2025				FY2026				FY2027			
	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4	FQ1	FQ2	FQ3	FQ4
Investment Management Cost Reduction:												
1. Obtain CEM Benchmarking report and analyze for cost reduction opportunities	X											
2. Conduct portfolio fee review and identify alternative implementation approaches (if necessary) develop priorities		X	X									
3. Streamline and document process of fee monitoring and benchmarking			X	X	X	X						
4. Further develop and grow the co-investment program			X	X	X	X						

Exhibit 2 – Peer Investment Office Comparisons

Compared NHRS to a peer group of nine other integrated state public retirement systems:

- The next three smaller systems by AUM (Arkansas ERS, Missouri Local and Government ERS (MOLAGERS), Illinois Police Officers' Pension Investment Fund)
- The next six larger systems by AUM (Michigan MERS, Louisiana SERS (LASERS), Delaware PERS, Oklahoma PERS, Missouri State Employees' (MOSERS), Wyoming Retirement System)

Integrated State Funds	2023 AUM (\$Bils)	Internal Mgmt.	Manager Selection Delegated	Consultants	Inv. Staff FTEs	Comments
Michigan MERS	\$14.9	25-50%	Yes	NEPC, Townsend	11	
Louisiana SERS (LASERS)	\$13.4	30%	No	NEPC	7	
Delaware PERS	\$12.7	No	No	Windmark	0	No internal investment staff
Oklahoma PERS	\$12.4	No	No	Verus	1	All public markets: US stocks, int'l. stocks, domestic bonds
Missouri State Employees' (MOSERS)	\$11.3	20%	Yes	Verus, Meketa, NEPC, Blackstone	15	
Wyoming Retirement System	\$11.2	No	Yes	Meketa, Albourne	7	
New Hampshire Retirement System	\$11.1	No	No	Callan*	4	
Arkansas ERS	\$10.4	No	No	Callan, Stephens	2	
Missouri Local and Government ERS (MOLAGERS)	\$10.1	25-50%	Yes	RVK	8	
Illinois Police Officers' Pension Investment Fund	\$9.6	No	No	Verus	3	Started operations in 2021

* Townsend is a discretionary advisor for the Real Estate asset class

Source: Funston Advisory Services LLC research

Exhibit 2 – Peer Investment Office Comparisons

Identified five different Investment Office management “models” among the peer group:

1. Delegated manager selection with staff support and selected internal management
2. Delegated manager selection with staff support and all external management
3. Board manager selection with staff support and selected internal management
4. Board manager selection with staff support and all external management
5. Board manager selection with no staff support and all external management

Model	State Public Retirement System	Delegated Manager Selection	Internal Asset Management	Internal Investment Staff	Average Investment Staff Size
1	<ul style="list-style-type: none"> • Michigan MERS • Missouri State Employees' (MOSERS) • Missouri Local and Government ERS (MOLAGERS) 	Yes	Yes	Yes	11.3
2	<ul style="list-style-type: none"> • Wyoming Retirement System 	Yes	No	Yes	7
3	<ul style="list-style-type: none"> • Louisiana SERS (LASERS) 	No	Yes	Yes	7
4	<ul style="list-style-type: none"> • Oklahoma PERS • New Hampshire Public Retirement System • Arkansas ERS • Illinois Police Officers' Pension Investment Fund 	No	No	Yes	2.5
5	<ul style="list-style-type: none"> • Delaware PERS 	No	No	No	0

Source: Funston Advisory Services LLC research

Exhibit 2 – Peer Investment Office Comparisons

The NHRS asset allocation and portfolio complexity is similar to most of the systems in this peer group.

Integrated State Funds	2023 AUM (Bils)	Level of Internally Managed Assets	Inv. Staff FTEs	2022 Actual Asset Allocation ^{1/}							Portfolio ^{2/}	
				Equities (%)	Fixed Income (%)	Real Estate (%)	Private Equity (%)	Hedge Funds (%)	Comm-odity (%)	Misc. Alts. (%)	# of Funds	# of Managers
Michigan MERS	\$14.9	25-50%	11	54	16		9		14			
Louisiana SERS (LASERS)	\$13.4	30%	7	52	19		28		1	28	89	44
Delaware PERS	\$12.7	No	0	47	24		30				39	38
Oklahoma PERS	\$12.4	No	1	68	32						18	13
Missouri State Employees' (MOSERS)	\$11.3	20%	15	43	37			21			72	48
Wyoming Retirement System	\$11.2	No	7	47	21	14				18		
New Hampshire Retirement System	\$11.1	No	4	46	19	14				21	99	56
Arkansas ERS	\$10.4	No	2	60	19	16		5				28
Missouri Local and Government ERS (MOLAGERS)	\$10.1	25-50%	8	25	28			16	31			84
Illinois Police Officers' Pension Investment Fund	\$9.6	No	3	78	16	6					12	3

^{1/} Source: The Center for Retirement Research at Boston College

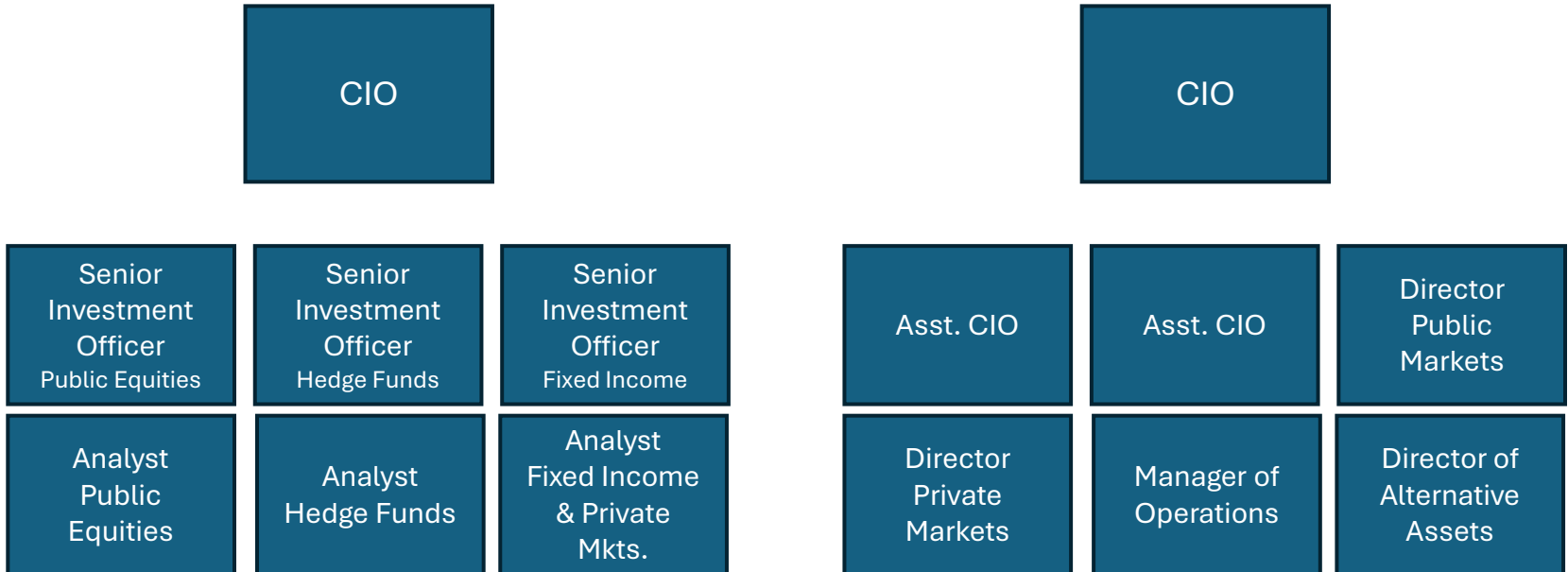
^{2/} Source: System Annual Comprehensive Financial Reports

Exhibit 2 – Peer Investment Office Comparisons

Peer systems with larger investment office staffs tend to have more investment officers with asset class specialization, at least a public vs. private focus.

Wyoming Retirement System
\$11.2B AUM

Louisiana SERS (LASERS)
\$13.4B AUM



Source: Funston Advisory Services LLC research

Exhibit 3 – New Roles and Job Responsibilities

Investment Office: Investment Services Analyst

- Funston Advisory Services (FAS) recommends that NHRS establish two investment services analyst positions, one at a junior and one at a senior level. These associates will provide direct value-added analytic and investment support services to the investment officers across the portfolio. Responsibilities include, but may not be limited to:
 - Operational Due Diligence (ODD) Oversight;
 - Portfolio and Custom Performance and Attribution Reporting;
 - Periodic and Ad Hoc Investment Analysis;
 - Authorization of Capital Calls and Distributions;
 - Development of and Review of IMAs / LPAs (with counsel),
 - Research and Remediation of reconciliation breaks between external business systems and/or counterparties;
 - Coordination of all transitions (using third party transition managers and transition evaluators);
 - Power user of investment business systems and center of competency for investment data definitions and utilizations (positional, transactional, reference, performance) for investments.
 - Development and management of policy, practice and process documentation relating to investment management functions;
 - User acceptance testing and training of investment personnel on new business systems capabilities (as required); and
 - Document management and records retention for investment management.
 - Compliance design, execution and monitoring.

Exhibit 3 – New Roles and Job Responsibilities

Legal: Investment Legal Resource(s)

- FAS recommends that NHRS establish in house investment legal capabilities. Legal will take primary the lead for drafting and negotiating investment contracts and partnership agreements, ensuring that investment division policies and statutory/regulatory compliance rules are adhered to; serving as liaison with the IIC for investment legal matters, and coordinating with external counsel as needed.

Detailed responsibilities include, but may not be limited to:

- Legal due diligence on new private investments
- Execution of LPAs and Side Letters
- Execution of IMAs
- Compliance Assurance / Oversight (e.g., adherence to IPS, 3rd party attestations, restriction monitoring, conflicts of interest)
- Class Action and Proxy Voting Decisioning
- Counterparty Contracting and 3rd Party License Agreements
- Fee (re)negotiating
- IPS Document Development
- Tax Reclaim Filings and Appeals
- Engagement and Oversight of Outside Counsel

Exhibit 3 – New Roles and Job Responsibilities

Finance and Accounting: Investment Operations Analyst

- FAS recommends that NHRS establish two investment operations analyst positions one at a junior and one at a senior level. These associates will provide both traditional middle- and back-office support services for investments. Responsibilities include, but may not be limited to:
 - Account Set Up and Maintenance
 - Subscriptions and Redemptions Set Up and Execution
 - Capital Call and Distribution Monitoring (of custodian bank: BNY CCMS) and Execution
 - Cash Management and Cash Forecasting (with Investment Management)
 - Account Closings and Manager Terminations (operational functions only)
 - Valuation Reconciliation
 - Class Action Settlements Monitoring
 - Tax Reclaims Monitoring and Execution (cash)
 - Internal and Third-Party Compliance Oversight (external manager and custodian)
 - Oversight of Custodian Monthly Valuation – ABOR (accounting book of record)
 - Annual Comprehensive Financial Report Production
 - Development and management of policies, practices and process documentation for investment operations functions
 - External management fee tracking and payment processing
 - Benchmark / peer analysis of costs and other metrics (as desired)

Exhibit 3 – New Roles and Job Responsibilities

Information Technology: Project Manager

- FAS recommends a single point of coordination and plan management of major initiatives, especially those requiring the introduction of new business systems. Key responsibilities include, but may not be limited to:
 - Project Planning and Budget Development (with Accounting and Investments)
 - Project Resource Management (internal and external)
 - Vendor Management (during implementation phases)
 - Project Reporting (schedule, costs, scope)
 - Issues Reporting

Exhibit 3 – New Roles and Job Responsibilities

Information Technology: Investment Business Systems Analyst

- FAS recommends identification of an IT investment business systems analyst to provide ongoing subject matter expertise and an important liaison function between investments and accounting and 3rd party providers of data and business systems functionality. Responsibilities include, but may not be limited to:
 - Development of business / systems requirements (with Investment Services Analyst) of investment technology-based functionality
 - Documentation of configuration and customization needs
 - Primary point of communication with external professional services functions (vendors and third parties) for the delivery and support of customization
 - Center of excellence of product configuration capabilities of investment business systems and keeper of priority / deliverable list of enhancements

Michael Gold

Michael has over 25 years of experience as an operations executive and management consultant to large asset management organizations. He possesses a consistent track record in applying innovative solutions to achieve best practices in operations, risk management, and investment compliance. He has previously been on the FAS project teams for the Ohio Highway Patrol Retirement System, STRS of Ohio, Ohio Police & Fire, the Central Pension Fund of the IUOE And Participating Employers, State Board of Administration of Florida, CalPERS, District of Columbia Retirement Board, the South Carolina Retirement System Investment Commission, and Fairfax County (VA) Retirement Systems.

Michael is currently the Managing Member of New Heights Solutions, LLC., a management consulting firm in the asset management and asset owner space. From 2016-2019, he consulted to the Bureau of Asset Management of the five New York City Retirement Systems, with combined assets of approximately \$200b in AUM. Over this time period, Michael successfully delivered a number of transformational initiatives, which included:

- The establishment of an enterprise risk management monitoring program encapsulating investment, strategic, compliance, and operations risks and controls;
- The development of a middle office operating model, resulting in the effective remediation of fundamental risks and deficiencies;
- The creation of policies and practices for all major operational functions, establishing process ownership, end to end controls, and key metrics based on industry best practices;
- The proposed redesign of all periodic portfolio performance reports to the Trustees of the Retirement Systems and general public;
- The reengineering and documentation of key internal investment processes, including asset allocation rebalancing, transition management, and cash management, significantly reducing expenses, establishing high standards for performance, and remediating cash drag on the portfolio; and
- The definition and implementation of key performance metrics for critical counterparties, including the program's custodian and fund accountant, securities lending agent, and foreign exchange trading agent.

In 2015, Michael retired from TIAA-CREF, an industry leader in the defined contribution marketplace, after 22 years of service, where he held many senior management positions within asset management. As Senior Managing Director and head of Asset Management Services, he managed all investment middle office operational functions for global equities, fixed income, commercial mortgages, real estate, private equity, and real assets. Concurrently, he led distribution operations for brokerage and mutual funds and directed the design and implementation of the division's capabilities in CRM, sales reporting, and content delivery for institutional and intermediary distribution channels. During his tenure at TIAA-CREF, he also served as program manager of the corporation's ten-year strategic planning initiative. Previous leadership assignments included managing the firm's process excellence program, chairing the company's Operational Risk Management Committee, and serving as a Director on the company's investment advisors' boards. He also led many successful investment technology solutions implementation efforts.

Michael served for three and a half years as a Trustee on the Stamford, Connecticut Firefighters Pension Fund Board, is Immediate Past Board President of the Stamford Jewish Community Center, and is a member of the Board of Directors of the Jewish Community Center Association. He is a graduate of the University of Massachusetts at Amherst, where he earned a Bachelor of Sciences and a Master of Sciences in Industrial Engineering and Operations Research.

Susan Lau

Susan has over 25 years of experience as an institutional investor, specializing in asset allocation, investment selection and implementation, financial management, risk and operations for pension and defined contribution plans, and the investment management of both public and private investment funds. Her extensive experience has provided her with a deep understanding of the institutional market ecosystem.

Currently, Susan is part of the FAS review of the Fairfax County Retirement System. She has also contributed to FAS project teams for the Ohio Highway Patrol Retirement System, the Presbyterian Church USA Board of Pensions, and the Central Pension Fund of the International Union of Operating Engineers and Participating Employers.

As the Chief Investment Officer of the Montgomery County Public Schools Retirement Systems (MCPS), Susan oversaw asset allocation, portfolio risk management, investment strategy, manager due diligence, and service provider oversight for both multi-billion-dollar pension and defined contribution plans. She deployed capital across multiple asset classes and strategies, developed an ESG framework, and established a systematic performance review process. Additionally, she managed the consolidation of the DC plan, reducing costs for participants and simplifying the investment menu. Susan also played a key role in overseeing the IRS audit of the DC plans.

In 2021, Susan was recognized by *Institutional Investor* as one of its Allocator Intel Top 50 Women in Investment Management. In 2018, she was named one of the Top 30 Pension Institutional Investors by Trusted Insights.

Most recently, Susan served as the Chief Financial Officer at Clarendon Capital, a mid-market transportation and logistics-focused private equity firm. Previously, she was a co-portfolio manager at Rothschild Asset Management for its 130/30 fund, and a senior investment analyst at several technology-focused hedge funds.

Susan graduated from Columbia University with a degree in industrial engineering. She began her career at Goldman Sachs as a telecommunication analyst before becoming a technology sector specialist on their sales and trading desk.

Randy Miller

Randy has been Chief Operating Officer of Funston Advisory Services LLC since its founding in 2010. He leads our fiduciary and operations reviews and is an expert in public retirement system governance. Randy also leads FAS's InGov® peer benchmarking for public retirement systems.

Together with Rick Funston, Randy has co-led assignments with many major public retirement systems. Randy has been the project manager on virtually all the FAS assignments since its founding, including Fairfax County (VA) Retirement Systems, Cincinnati Retirement System, State of Wisconsin Investment Board (SWIB), Central Pension Fund of the IUOE and Participating Employers, Ohio Highway Patrol Retirement System, Ohio Police & Fire Pension Fund, State Teachers' Retirement System (STRS) of Ohio, Board of Pensions of the Presbyterian Church (U.S.A.), State Board of Administration of Florida, California Public Employees' Retirement System (CalPERS), District of Columbia Retirement Board, South Carolina Retirement System Investment Commission, Massachusetts Pension Reserves Investment Management (PRIM), New Mexico Public Employees' Retirement Association (PERA), Missouri DOT & State Highway Patrol Employees' Retirement System (MPERS), Indiana Public Retirement System (INPRS), Pennsylvania State Employees' Retirement System (SERS), Pennsylvania Public School Employees' Retirement System (PSERS), Milwaukee County Employees' Retirement System, Employees' Retirement System of the State of Hawaii, South Carolina Public Employee Benefit Authority, Delaware Public Employees' Retirement System, and Wyoming Retirement System. Randy has extensive experience in planning and conducting complex reviews and improvement programs in large organizations.

Randy has authored and co-authored a number of white papers on the topics of public pension fund governance, operations, and risk. He is also a key member of the Board Smart® faculty and developed the Board Smart talks entitled, *"The Board's Focus on Strategy"* and *"How to Make the Best Use of the Board's External Advisors."*

Randy left Deloitte Consulting LLP in 2010 after 27 years of service, where was a senior partner in the Strategy & Operations group. He has significant international consulting experience, led Deloitte's global automotive industry consulting practice, and was based in Germany with Deloitte from 1997-2003 and led Deloitte Consulting DACH (Germany, Austria, Switzerland) for two years. He specialized in planning and implementation of mergers, acquisitions, and divestitures; market and supply chain strategy; and cost reduction/operations improvements.

Randy received an AB degree from Dartmouth College with a major in Engineering Sciences. He also received a BE from the Thayer School of Engineering and an MBA from the Amos Tuck School of Business, both also at Dartmouth.

May 31, 2024



New Hampshire Retirement System

**Investment Measurement Service
Monthly Review**

The table below details the rates of return for the fund’s asset classes over various time periods ended May 31, 2024. Negative manager excess returns are shown in red, positive excess returns in green. Returns for one year or greater are annualized.

Net of Fees Returns for Periods Ended May 31, 2024									
Composite	Total Fund Weighting As of 5/31/2024	Last Month	Last 3 Months	FYTD	CYTD	LTM	3-YR	5-YR	10-YR
Total Domestic Equity	32.03%	4.80%	3.27%	17.15%	8.63%	25.53%	6.46%	13.42%	10.80%
<i>Domestic Equity Benchmark(1)</i>		4.72%	3.35%	19.43%	10.15%	27.58%	7.79%	14.67%	12.17%
<i>Excess Return</i>		0.07%	-0.08%	-2.28%	-1.52%	-2.06%	-1.33%	-1.25%	-1.37%
Total Non US Equity	19.20%	3.40%	3.39%	11.89%	6.33%	17.63%	1.36%	7.24%	4.75%
<i>Non US Equity Benchmark(2)</i>		2.90%	4.21%	11.73%	5.79%	16.74%	0.27%	6.81%	4.03%
<i>Excess Return</i>		0.50%	-0.83%	0.16%	0.54%	0.89%	1.08%	0.43%	0.72%
Total Fixed Income	19.14%	1.64%	0.09%	2.75%	-1.30%	2.99%	-2.28%	1.29%	1.88%
<i>Bloomberg Capital Universe Bond Index</i>		1.66%	0.26%	2.54%	-1.18%	2.38%	-2.74%	0.21%	1.56%
<i>Excess Return</i>		-0.02%	-0.17%	0.22%	-0.11%	0.62%	0.47%	1.09%	0.33%
Total Cash	1.82%	0.43%	1.31%	5.02%	2.20%	5.46%	2.99%	2.20%	1.55%
<i>3-Month Treasury Bill</i>		0.48%	1.36%	4.97%	2.21%	5.45%	2.89%	2.12%	1.47%
<i>Excess Return</i>		-0.05%	-0.06%	0.05%	-0.01%	0.01%	0.10%	0.09%	0.08%
Total Real Estate (Q4)*	9.41%	0.04%	-3.87%	-5.96%	-4.13%	-10.32%	7.49%	7.03%	9.34%
<i>Real Estate Benchmark(3)</i>		-0.87%	-3.39%	-11.24%	-6.64%	-12.25%	2.98%	2.82%	6.08%
<i>Excess Return</i>		0.91%	-0.48%	5.28%	2.51%	1.92%	4.51%	4.21%	3.26%
Total Private Equity (Q4)*	13.78%	-0.50%	1.31%	2.63%	1.28%	6.89%	13.07%	13.93%	11.54%
<i>Private Equity Benchmark(4)</i>		5.51%	12.60%	27.27%	20.17%	30.83%	14.19%	17.64%	16.02%
<i>Excess Return</i>		-6.00%	-11.28%	-24.64%	-18.89%	-23.93%	-1.13%	-3.71%	-4.48%
Total Private Debt (Q4)*	4.62%	0.01%	1.34%	3.02%	1.32%	5.11%	7.70%	5.79%	6.35%
<i>Private Debt Benchmark(5)</i>		0.78%	3.97%	11.66%	6.49%	12.29%	4.65%	4.58%	5.57%
<i>Excess Return</i>		-0.77%	-2.64%	-8.63%	-5.17%	-7.19%	3.06%	1.21%	0.77%
Total Fund Composite	100.00%	2.45%	1.57%	7.88%	3.47%	11.32%	4.72%	8.55%	7.22%
<i>Total Fund Benchmark(6)</i>		2.92%	3.01%	10.85%	5.45%	14.28%	4.02%	8.46%	7.42%
<i>Excess Return</i>		-0.46%	-1.44%	-2.97%	-1.99%	-2.97%	0.70%	0.09%	-0.21%

(1) The Domestic Equity Benchmark is the Russell 3000 Index as of 7/1/2021.

(2) The Non US Equity Index is the MSCI ACWI ex US Index as of 7/1/2003. Prior to 7/1/2003 it was the MSCI EAFE Index.

(3) The Real Estate Benchmark is the NCREIF NFI-ODCE Value Weight Net Index lagged 1 quarter as of 7/1/2015.

(4) The Private Equity Benchmark is the Russell 3000 Index + 2% lagged 1 quarter as of 7/1/2022.

(5) The Private Debt Benchmark is (50% MStar LSTA Leveraged Loan 100 Idx + 50% Bloomberg High Yield Index) + 1% lagged 1 quarter as of 7/1/2022.

(6) Current Month Target = 30.0% Russell 3000 Index, 25.0% Bloomberg Universal, 20.0% MSCI ACWI ex-US, 10.0% NCREIF NFI-ODCE Value Weight Net lagged 3 months, 10.0% Russell 3000 Index lagged 3 months+2.0%, 2.5% Bloomberg High Yield Corp lagged 3 months+1.0% and 2.5% MStar LSTA Lev Loan 100 lagged 3 months +1.0%.

(7) For the trailing 25 year period ended 5/31/24, the Total Fund has returned 6.49% versus the Total Fund Custom Benchmark return of 6.58%.

*Real Estate and Alternatives market values reflect current custodian valuations, which are typically lagged approximately 1 quarter.

The table below details the rates of return for the fund's investment managers over various time periods ended May 31, 2024. Negative manager excess returns are shown in red, positive excess returns in green. Returns for one year or greater are annualized.

Net of Fees Returns for Periods Ended May 31, 2024									
Composite	Total Fund Weighting As of 5/31/2024	Last Month	Last 3 Months	FYTD	CYTD	LTM	3-YR	5-YR	10-YR
Total Domestic Equity	32.03%	4.80%	3.27%	17.15%	8.63%	25.53%	6.46%	13.42%	10.80%
<i>Domestic Equity Benchmark(1)</i>		4.72%	3.35%	19.43%	10.15%	27.58%	7.79%	14.67%	12.17%
<i>Excess Return</i>		0.07%	-0.08%	-2.28%	-1.52%	-2.06%	-1.33%	-1.25%	-1.37%
Large Cap Domestic Equity	18.37%	5.03%	3.98%	20.31%	11.36%	28.26%	9.54%	15.03%	11.78%
<i>S&P 500 Index</i>		4.96%	3.91%	20.24%	11.30%	28.19%	9.57%	15.80%	12.69%
<i>Excess Return</i>		0.07%	0.07%	0.07%	0.07%	0.07%	-0.02%	-0.77%	-0.91%
BlackRock S&P 500	18.37%	5.03%	3.98%	20.31%	11.36%	28.26%	9.54%	15.76%	12.66%
<i>S&P 500 Index</i>		4.96%	3.91%	20.24%	11.30%	28.19%	9.57%	15.80%	12.69%
<i>Excess Return</i>		0.07%	0.07%	0.07%	0.07%	0.07%	-0.02%	-0.04%	-0.03%
Smid Cap Domestic Equity	5.92%	3.95%	1.78%	12.13%	5.04%	21.31%	1.25%	10.23%	8.32%
<i>Russell 2500 Index</i>		4.16%	1.19%	12.15%	3.91%	21.70%	0.60%	10.14%	8.66%
<i>Excess Return</i>		-0.21%	0.58%	-0.02%	1.13%	-0.39%	0.65%	0.09%	-0.34%
AllianceBernstein	3.73%	4.13%	0.79%	14.23%	6.01%	24.45%	0.15%	10.84%	9.44%
<i>Russell 2500 Index</i>		4.16%	1.19%	12.15%	3.91%	21.70%	0.60%	10.14%	8.66%
<i>Excess Return</i>		-0.03%	-0.41%	2.08%	2.11%	2.75%	-0.46%	0.70%	0.79%
TSW	2.19%	3.64%	3.51%	8.72%	3.42%	16.31%	3.26%	9.22%	6.64%
<i>TSW Blended Benchmark (2)</i>		4.21%	2.47%	13.53%	3.59%	23.62%	2.39%	9.95%	8.56%
<i>Excess Return</i>		-0.57%	1.04%	-4.81%	-0.18%	-7.31%	0.88%	-0.72%	-1.92%
Small Cap Domestic Equity	7.74%	4.98%	2.75%	13.47%	4.86%	22.22%	3.11%	12.00%	10.18%
<i>Russell 2000 Index</i>		5.02%	1.12%	11.08%	2.68%	20.12%	-1.65%	8.61%	7.66%
<i>Excess Return</i>		-0.03%	1.63%	2.39%	2.18%	2.11%	4.76%	3.39%	2.52%
Boston Trust	1.98%	3.15%	1.53%	9.19%	3.03%	16.70%	5.11%	11.54%	10.12%
<i>Russell 2000 Index</i>		5.02%	1.12%	11.08%	2.68%	20.12%	-1.65%	8.61%	7.66%
<i>Excess Return</i>		-1.86%	0.41%	-1.90%	0.35%	-3.42%	6.76%	2.93%	2.46%
Segall Bryant & Hamill	2.17%	4.65%	3.18%	15.56%	6.33%	24.98%	4.40%	13.04%	9.61%
<i>Russell 2000 Index</i>		5.02%	1.12%	11.08%	2.68%	20.12%	-1.65%	8.61%	7.66%
<i>Excess Return</i>		-0.36%	2.06%	4.47%	3.65%	4.87%	6.05%	4.43%	1.95%
Wellington	3.60%	6.23%	3.18%	14.71%	5.01%	23.80%	1.35%	11.65%	10.59%
<i>Russell 2000 Index</i>		5.02%	1.12%	11.08%	2.68%	20.12%	-1.65%	8.61%	7.66%
<i>Excess Return</i>		1.21%	2.06%	3.63%	2.33%	3.69%	3.00%	3.04%	2.93%

(1) The Domestic Equity Benchmark is the Russell 3000 Index as of 7/1/2021.

(2) TSW Blended Benchmark is the Russell 2500 Value Index as of 7/1/2019. Prior to 7/1/2019 it was the Russell 2500.

The table below details the rates of return for the fund's investment managers over various time periods ended May 31, 2024. Negative manager excess returns are shown in red, positive excess returns in green. Returns for one year or greater are annualized.

Net of Fees Returns for Periods Ended May 31, 2024									
Composite	Total Fund Weighting As of 5/31/2024	Last Month	Last 3 Months	FYTD	CYTD	LTM	3-YR	5-YR	10-YR
Total Non US Equity	19.20%	3.40%	3.39%	11.89%	6.33%	17.63%	1.36%	7.24%	4.75%
Non US Equity Benchmark (1)		2.90%	4.21%	11.73%	5.79%	16.74%	0.27%	6.81%	4.03%
Excess Return		0.50%	-0.83%	0.16%	0.54%	0.89%	1.08%	0.43%	0.72%
Core Non US Equity	11.75%	3.78%	4.69%	12.70%	6.82%	18.02%	2.88%	7.65%	4.34%
Core Non US Benchmark (2)		2.90%	4.21%	11.73%	5.79%	16.74%	0.27%	6.81%	4.03%
Excess Return		0.87%	0.48%	0.97%	1.03%	1.28%	2.61%	0.84%	0.31%
Aristotle	1.50%	4.18%	3.83%	10.60%	5.06%	15.69%	1.19%	-	-
MSCI EAFE		3.87%	4.54%	13.37%	7.07%	18.53%	3.06%	-	-
Excess Return		0.30%	-0.72%	-2.76%	-2.01%	-2.83%	-1.87%	-	-
Artisan Partners	3.38%	3.39%	3.74%	14.64%	9.24%	20.08%	1.41%	6.85%	-
MSCI EAFE		3.87%	4.54%	13.37%	7.07%	18.53%	3.06%	8.05%	-
Excess Return		-0.49%	-0.80%	1.27%	2.17%	1.55%	-1.65%	-1.20%	-
BlackRock SuperFund	1.65%	2.96%	4.37%	11.81%	5.98%	16.89%	-	-	-
MSCI ACWI Ex-US		2.90%	4.21%	11.73%	5.79%	16.74%	-	-	-
Excess Return		0.05%	0.16%	0.08%	0.19%	0.15%	-	-	-
Causeway Capital	3.80%	4.61%	7.64%	13.29%	6.73%	18.87%	7.11%	11.21%	-
MSCI EAFE		3.87%	4.54%	13.37%	7.07%	18.53%	3.06%	8.05%	-
Excess Return		0.74%	3.10%	-0.07%	-0.34%	0.35%	4.04%	3.16%	-
Lazard	1.42%	3.06%	0.77%	10.02%	4.46%	14.97%	-0.56%	-	-
MSCI EAFE		3.87%	4.54%	13.37%	7.07%	18.53%	3.06%	-	-
Excess Return		-0.81%	-3.77%	-3.35%	-2.61%	-3.56%	-3.62%	-	-
Emerging Markets	1.47%	1.61%	3.86%	8.57%	5.73%	15.21%	-6.90%	1.71%	1.74%
MSCI EM		0.56%	3.52%	8.28%	3.41%	12.39%	-6.23%	3.55%	2.66%
Excess Return		1.04%	0.35%	0.30%	2.32%	2.83%	-0.67%	-1.84%	-0.92%
Wellington Emerging Markets	1.47%	1.61%	3.86%	8.57%	5.73%	14.60%	-6.79%	1.46%	2.67%
MSCI EM		0.56%	3.52%	8.28%	3.41%	12.39%	-6.23%	3.55%	2.66%
Excess Return		1.04%	0.35%	0.30%	2.32%	2.21%	-0.56%	-2.09%	0.00%
Non US Small Cap	1.17%	4.45%	5.19%	12.91%	4.81%	17.25%	-4.66%	2.19%	-0.04%
MSCI EAFE Small Cap		4.33%	5.00%	11.16%	3.66%	14.38%	-2.89%	5.71%	4.77%
Excess Return		0.12%	0.19%	1.74%	1.15%	2.87%	-1.77%	-3.53%	-4.82%
Wellington Int'l Small Cap Research	1.17%	4.45%	5.19%	12.91%	4.81%	17.25%	-	-	-
MSCI EAFE Small Cap		4.33%	5.00%	11.16%	3.66%	14.38%	-	-	-
Excess Return		0.12%	0.19%	1.74%	1.15%	2.87%	-	-	-
Global Equity	4.81%	2.81%	-0.21%	10.72%	5.68%	17.54%	5.20%	11.71%	10.54%
MSCI ACWI net		4.06%	3.79%	16.78%	8.88%	23.56%	5.12%	11.68%	8.40%
Excess Return		-1.25%	-4.00%	-6.05%	-3.19%	-6.02%	0.08%	0.03%	2.14%
Walter Scott Global Equity	4.81%	2.81%	-0.21%	10.72%	5.68%	17.54%	5.20%	11.71%	10.54%
Walter Scott Blended Benchmark (3)		4.06%	3.79%	16.78%	8.88%	23.56%	5.12%	11.68%	8.40%
Excess Return		-1.25%	-4.00%	-6.05%	-3.19%	-6.02%	0.08%	0.03%	2.14%

(1) The Non US Equity Index is the MSCI ACWI ex US Index as of 7/1/2003. Prior to 7/1/2003 it was the MSCI EAFE Index.
 (2) The Core Non US Equity Index is the MSCI ACWI ex US as of 7/1/2007. Prior to 7/1/2007 it was the MSCI EAFE Index.
 (3) The Walter Scott Blended Benchmark is the MSCI ACWI Index as 5/1/2008. Prior to 5/1/2008 it was the MSCI EAFE Index.

The table below details the rates of return for the fund's investment managers over various time periods ended May 31, 2024. Negative manager excess returns are shown in red, positive excess returns in green. Returns for one year or greater are annualized.

Composite	Net of Fees Returns for Periods Ended May 31, 2024								
	Total Fund Weighting As of 5/31/2024	Last Month	Last 3 Months	FYTD	CYTD	LTM	3-YR	5-YR	10-YR
Total Fixed Income	19.14%	1.64%	0.09%	2.75%	-1.30%	2.99%	-2.28%	1.29%	1.88%
<i>Fixed Income Benchmark (1)</i>		1.66%	0.26%	2.54%	-1.18%	2.38%	-2.74%	0.21%	1.56%
<i>Excess Return</i>		-0.02%	-0.17%	0.22%	-0.11%	0.62%	0.47%	1.09%	0.33%
BlackRock SIO Bond Fund	2.21%	1.15%	0.75%	5.94%	0.55%	6.28%	0.65%	2.70%	-
<i>BlackRock Custom Benchmark (2)</i>		0.46%	1.37%	5.06%	2.30%	5.50%	3.06%	2.25%	-
<i>Excess Return</i>		0.69%	-0.62%	0.88%	-1.75%	0.78%	-2.40%	0.45%	-
Brandywine Asset Mgmt	1.84%	2.31%	-2.05%	-2.79%	-6.82%	-1.55%	-7.00%	-0.93%	0.08%
<i>Brandywine Custom Benchmark (3)</i>		1.14%	-1.25%	-0.96%	-4.29%	-0.89%	-7.36%	-2.82%	-1.16%
<i>Excess Return</i>		1.17%	-0.80%	-1.83%	-2.54%	-0.66%	0.37%	1.89%	1.23%
FIAM (Fidelity) Tactical Bond	3.07%	1.68%	0.19%	2.82%	-0.93%	3.29%	-1.18%	2.08%	-
<i>Bloomberg Aggregate</i>		1.70%	0.04%	1.67%	-1.64%	1.31%	-3.10%	-0.17%	-
<i>Excess Return</i>		-0.01%	0.15%	1.15%	0.71%	1.99%	1.92%	2.25%	-
Income Research & Management	6.42%	1.61%	0.13%	2.20%	-1.14%	1.99%	-2.92%	0.46%	1.74%
<i>Bloomberg Gov/Credit</i>		1.60%	0.05%	1.85%	-1.53%	1.53%	-3.07%	0.05%	1.42%
<i>Excess Return</i>		0.01%	0.08%	0.35%	0.40%	0.46%	0.15%	0.41%	0.33%
Loomis Sayles	2.37%	1.64%	0.75%	6.03%	0.32%	6.38%	-0.85%	3.15%	3.16%
<i>Loomis Sayles Custom Benchmark (4)</i>		1.49%	0.50%	4.32%	-0.50%	4.69%	-1.39%	1.40%	2.36%
<i>Excess Return</i>		0.16%	0.26%	1.70%	0.82%	1.69%	0.54%	1.75%	0.79%
Manulife Strategic Fixed Income	1.77%	1.51%	0.33%	3.53%	-0.51%	4.11%	-1.24%	1.90%	-
<i>Bloomberg Multiverse</i>		1.31%	-0.61%	1.15%	-3.10%	1.26%	-5.56%	-1.43%	-
<i>Excess Return</i>		0.20%	0.94%	2.39%	2.59%	2.85%	4.32%	3.33%	-
Mellon US Agg Bond Index	1.45%	1.70%	0.05%	1.67%	-1.64%	1.31%	-	-	-
<i>Bloomberg Aggregate Bond Index</i>		1.70%	0.04%	1.67%	-1.64%	1.31%	-	-	-
<i>Excess Return</i>		0.01%	0.01%	0.00%	0.00%	0.01%	-	-	-
Total Cash	1.82%	0.43%	1.31%	5.02%	2.20%	5.46%	2.99%	2.20%	1.55%
<i>3-month Treasury Bill</i>		0.48%	1.36%	4.97%	2.21%	5.45%	2.89%	2.12%	1.47%
<i>Excess Return</i>		-0.05%	-0.06%	0.05%	-0.01%	0.01%	0.10%	0.09%	0.08%
Total Marketable Assets	72.20%	3.54%	2.41%	11.54%	5.17%	16.51%	2.61%	8.03%	6.54%
<i>Total Marketable Index (5)</i>		3.22%	2.56%	11.65%	5.16%	15.98%	2.40%	7.89%	6.69%
<i>Excess Return</i>		0.32%	-0.14%	-0.11%	0.01%	0.54%	0.21%	0.14%	-0.15%

(1) The Fixed Income Benchmark is the Bloomberg Universal Bond Index as of 7/1/2007.

(2) The BlackRock Custom Benchmark is 3 Month SOFR compounded in arrears as of 1/1/2022.

(3) The Brandywine Blended Benchmark is the FTSE WGBI Ex-China Index as of 11/1/2021.

(4) The Loomis Sayles Custom Benchmark is 65% Bloomberg Aggregate and 35% Bloomberg High Yield.

(5) Marketable Assets Index is 40% Russell 3000, 26.7% MSCI ACWI ex US, and 33.3% Bloomberg Universal as of 7/1/2021.

The table below details the rates of return for the fund’s investment managers over various time periods ended May 31, 2024. Negative manager excess returns are shown in red, positive excess returns in green. Returns for one year or greater are annualized.

Net of Fees Returns for Periods Ended May 31, 2024									
Composite	Total Fund Weighting As of 5/31/2024	Last Month	Last 3 Months	FYTD	CYTD	LTM	3-YR	5-YR	10-YR
Total Real Estate (Q4)* (5)	9.41%	0.04%	-3.87%	-5.96%	-4.13%	-10.32%	7.49%	7.03%	9.34%
<i>Real Estate Benchmark (1)</i>		-0.87%	-3.39%	-11.24%	-6.64%	-12.25%	2.98%	2.82%	6.08%
<i>Excess Return</i>		0.91%	-0.48%	5.28%	2.51%	1.92%	4.51%	4.21%	3.26%
Strategic Core Real Estate (Q4)*	5.64%	0.00%	-5.11%	-7.03%	-5.38%	-14.34%	5.84%	5.18%	7.94%
<i>Real Estate Benchmark (1)</i>		-0.87%	-3.39%	-11.24%	-6.64%	-12.25%	2.98%	2.82%	6.08%
<i>Excess Return</i>		0.87%	-1.72%	4.21%	1.26%	-2.10%	2.85%	2.36%	1.86%
Tactical Non-Core Real Estate (Q4)*	3.77%	0.11%	-1.85%	-4.24%	-2.09%	-2.79%	10.35%	10.35%	11.81%
<i>Real Estate Benchmark (1)</i>		-0.87%	-3.39%	-11.24%	-6.64%	-12.25%	2.98%	2.82%	6.08%
<i>Excess Return</i>		0.98%	1.54%	7.00%	4.55%	9.46%	7.37%	7.53%	5.73%
Total Alternative Assets (Q4)*	18.39%	-0.37%	1.32%	2.73%	1.29%	6.42%	11.56%	11.39%	9.06%
<i>Alternative Assets Benchmark (2)</i>		3.94%	9.68%	21.98%	15.52%	24.49%	11.08%	13.08%	11.52%
<i>Excess Return</i>		-4.30%	-8.37%	-19.25%	-14.23%	-18.07%	0.48%	-1.69%	-2.46%
Total Private Equity (Q4)*	13.78%	-0.50%	1.31%	2.63%	1.28%	6.89%	13.07%	13.93%	11.54%
<i>Private Equity Benchmark (3)</i>		5.51%	12.60%	27.27%	20.17%	30.83%	14.19%	17.64%	16.02%
<i>Excess Return</i>		-6.00%	-11.28%	-24.64%	-18.89%	-23.93%	-1.13%	-3.71%	-4.48%
Total Private Debt (Q4)*	4.62%	0.01%	1.34%	3.02%	1.32%	5.11%	7.70%	5.79%	6.35%
<i>Private Debt Benchmark (4)</i>		0.78%	3.97%	11.66%	6.49%	12.29%	4.65%	4.58%	5.57%
<i>Excess Return</i>		-0.77%	-2.64%	-8.63%	-5.17%	-7.19%	3.06%	1.21%	0.77%

(1) The Real Estate Benchmark is the NCREIF NFI-ODCE Value Weight Net Index lagged 1 quarter as of 7/1/2015.

(2) The Alternative Assets Benchmark is 66.7% Russell 3000 Index + 2% lagged 1 quarter and 33.3% ((50% S&P LSTA Leveraged Loan 100 Index + 50% Bloomberg High Yield Index) + 1%) lagged 1 quarter as of 7/1/2022.

(3) The Private Equity Benchmark is the Russell 3000 Index + 2% lagged 1 quarter as of 7/1/2022.

(4) The Private Debt Benchmark is (50% MStar LSTA Leveraged Loan 100 Index / 50% Bloomberg High Yield Index) + 1% lagged 1 quarter as of 7/1/2022.

(5) Total Real Estate returns includes Townsend discretionary fee as of 7/1/2022.

*Real Estate and Alternatives market values reflect current custodian valuations, which are typically lagged approximately 1 quarter.

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of May 31, 2024, with the distribution as of April 30, 2024. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	May 31, 2024		Net New Inv.	Inv. Return	April 30, 2024	
	Market Value	Weight			Market Value	Weight
Total Domestic Equity	\$3,880,606,075	32.03%	\$(175,000,000)	\$180,852,495	\$3,874,753,580	32.71%
Large Cap Domestic Equity	\$2,225,594,288	18.37%	\$(175,000,000)	\$108,229,215	\$2,292,365,072	19.35%
Blackrock S&P 500	2,225,594,288	18.37%	(175,000,000)	108,229,215	2,292,365,072	19.35%
SMid Cap Domestic Equity	\$716,975,067	5.92%	\$0	\$27,589,396	\$689,385,671	5.82%
AllianceBernstein	452,178,028	3.73%	0	18,149,290	434,028,738	3.66%
TSW	264,797,039	2.19%	0	9,440,106	255,356,933	2.16%
Small Cap Domestic Equity	\$938,036,720	7.74%	\$0	\$45,033,884	\$893,002,837	7.54%
Boston Trust	239,629,160	1.98%	0	7,401,233	232,227,928	1.96%
Segall Bryant & Hamill	262,707,371	2.17%	0	11,841,385	250,865,987	2.12%
Wellington	435,700,189	3.60%	0	25,791,266	409,908,923	3.46%
Total Non US Equity	\$2,325,831,798	19.20%	\$(86)	\$77,597,642	\$2,248,234,242	18.98%
Core Non US Equity (1)	\$1,423,485,150	11.75%	\$(86)	\$52,367,687	\$1,371,117,548	11.57%
Aristotle	181,743,544	1.50%	0	7,351,564	174,391,980	1.47%
Artisan Partners	409,242,699	3.38%	0	13,613,564	395,629,135	3.34%
BlackRock Superfund	199,680,382	1.65%	0	5,738,432	193,941,950	1.64%
Causeway Capital	460,094,253	3.80%	(86)	20,473,490	439,620,849	3.71%
Lazard	172,063,175	1.42%	0	5,180,681	166,882,494	1.41%
Emerging Markets	\$178,271,324	1.47%	\$0	\$2,976,152	\$175,295,172	1.48%
Wellington Emerging Markets	178,271,324	1.47%	0	2,976,152	175,295,172	1.48%
Non US Small Cap	\$141,870,480	1.17%	\$0	\$6,128,465	\$135,742,014	1.15%
Wellington Int'l Small Cap Research	141,870,480	1.17%	0	6,128,465	135,742,014	1.15%
Global Equity	\$582,204,844	4.81%	\$0	\$16,125,337	\$566,079,507	4.78%
Walter Scott Global Equity	582,204,844	4.81%	0	16,125,337	566,079,507	4.78%
Total Fixed Income	\$2,318,771,064	19.14%	\$0	\$37,879,710	\$2,280,891,354	19.25%
BlackRock SIO Bond Fund	268,290,457	2.21%	0	3,164,212	265,126,246	2.24%
Brandywine Asset Mgmt	223,101,598	1.84%	0	5,103,173	217,998,425	1.84%
FIAM (Fidelity) Tactical Bond	372,400,349	3.07%	0	6,265,147	366,135,202	3.09%
Income Research & Management	777,592,847	6.42%	0	12,440,405	765,152,441	6.46%
Loomis Sayles	287,132,813	2.37%	0	4,722,009	282,410,804	2.38%
Manulife Strategic Fixed Income	214,062,461	1.77%	0	3,235,630	210,826,832	1.78%
Mellon US Agg Bond Index	176,190,539	1.45%	0	2,949,134	173,241,405	1.46%
Total Cash	\$220,950,669	1.82%	\$188,876,246	\$757,998	\$31,316,426	0.26%
Total Marketable Assets	\$8,746,159,607	72.20%	\$13,876,160	\$297,087,845	\$8,435,195,602	71.20%
Total Real Estate	\$1,139,332,665	9.41%	\$(20,516,928)	\$498,719	\$1,159,350,874	9.79%
Strategic Core Real Estate	682,641,113	5.64%	(24,230,890)	(2,291)	706,874,295	5.97%
Tactical Non-Core Real Estate	456,691,551	3.77%	3,713,963	501,010	452,476,578	3.82%
Total Alternative Assets	\$2,228,249,638	18.39%	\$(14,190,020)	\$(9,852,231)	\$2,252,291,888	19.01%
Private Equity	1,668,720,573	13.78%	(3,473,064)	(9,924,194)	1,682,117,831	14.20%
Private Debt	559,529,065	4.62%	(10,716,956)	71,963	570,174,057	4.81%
Total Fund Composite	\$12,113,741,910	100.0%	\$(20,830,788)	\$287,734,333	\$11,846,838,364	100.0%

-Alternatives market values reflect current custodian valuations, which may not be up to date.

(1) Includes \$661,096 in legacy assets that are not actively managed and in liquidation following the termination of Fisher Investments.

New Hampshire Retirement System Target History

30-Jun-2022 - 31-May-2024		
Domestic Broad		
Eq	Russell 3000 Index	30.00%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF NFI-ODCE Value Weight Net	10.00%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	Russell 3000 Index+2.00%	10.00%
Other Alternatives	Bloomberg HY Corporate+1.00%	2.50%
Other Alternatives	Morningstar LSTA Leveraged Loan 100+1.00%	2.50%
		100.00%

30-Jun-2021 - 30-Jun-2022		
Domestic Broad		
Eq	Russell 3000 Index	30.00%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF NFI-ODCE Value Weight Net	10.00%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+3.00%	10.00%
Other Alternatives	Morningstar LSTA Leveraged Loan 100	5.00%
		100.00%

30-Sep-2020 - 30-Jun-2021		
Domestic Broad		
Eq	S&P 500 Index	30.00%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF NFI-ODCE Value Weight Net	10.00%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+3.00%	10.00%
Other Alternatives	Morningstar LSTA Leveraged Loan 100	5.00%
		100.00%

30-Jun-2015 - 30-Sep-2020		
Domestic Broad		
Eq	S&P 500 Index	30.00%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF NFI-ODCE Value Weight Net	10.00%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	Alternative Asset Benchmark	15.00%
		100.00%

31-Mar-2015 - 30-Jun-2015		
Domestic Broad		
Eq	Russell 3000 Index	37.30%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.70%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	9.00%
		100.00%

31-Dec-2014 - 31-Mar-2015		
Domestic Broad		
Eq	Russell 3000 Index	37.70%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.80%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	8.50%
		100.00%

30-Sep-2014 - 31-Dec-2014		
Domestic Broad		
Eq	Russell 3000 Index	39.00%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.60%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	7.40%
		100.00%

30-Jun-2014 - 30-Sep-2014		
Domestic Broad		
Eq	Russell 3000 Index	39.60%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.90%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	6.50%
		100.00%

31-Mar-2014 - 30-Jun-2014		
Domestic Broad		
Eq	Russell 3000 Index	42.20%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.60%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	4.20%
		100.00%

31-Dec-2013 - 31-Mar-2014		
Domestic Broad		
Eq	Russell 3000 Index	41.80%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	9.10%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	4.10%
		100.00%

30-Sep-2013 - 31-Dec-2013		
Domestic Broad		
Eq	Russell 3000 Index	42.90%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.60%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	3.50%
		100.00%

30-Jun-2013 - 30-Sep-2013		
Domestic Broad		
Eq	Russell 3000 Index	42.50%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	9.00%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	S&P 500 Index+5.00%	3.50%
		100.00%

31-Mar-2013 - 30-Jun-2013		
Domestic Broad		
Eq	Russell 3000 Index	43.00%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.60%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	Alternative Asset Benchmark	3.40%
		100.00%

31-Dec-2012 - 31-Mar-2013		
Domestic Broad		
Eq	Russell 3000 Index	43.60%
Domestic Fixed	Bloomberg Universal	25.00%
Real Estate	NCREIF Property Index+0.50%	8.80%
Intl Equity	MSCI ACWI xUS (Net)	20.00%
Other Alternatives	Alternative Asset Benchmark	2.60%
		100.00%

Alternatives Benchmark represents from 7/1/2022 to present: 66.7% Russell 3000 Idx + 2% (1 qtr lag) and 33.3% ((50% S&P LSTA Leveraged Loan 100 Idx + 50% Bloomberg HY Idx) + 1%) (1 qtr lag).

From 7/1/2019 to 7/1/2022: 66.7% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Index (1 qtr lag). From 7/1/2016 to 7/1/2019: 33.3% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Index (1 qtr lag) + 33.3% of Cash (6-mo USD LIBOR) + 5%. From 7/1/2015 to 7/1/2016: 33.3% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Idx(1 qtr lag) + 33.3% of Cash (1 month USD LIBID) +5%. From 7/1/2013 to 7/1/2015: S&P 500 plus 5% (1 qtr lag). From 7/1/2011 to 7/1/2013: Qtr ending weight of Private Equity x S&P 500 plus 5% + Qtr ending weight Absolute Return x CPI + 5%. Prior to 7/1/2011: CPI + 5%.

New Hampshire Retirement System Target History

30-Sep-2012 - 31-Dec-2012			
Domestic Broad			
Eq	Russell 3000 Index	43.90%	
Domestic Fixed	Bloomberg Universal	25.00%	
Real Estate	NCREIF Property Index+0.50%	8.70%	
Intl Equity	MSCI ACWI xUS (Net)	20.00%	
Other Alternatives	Alternative Asset Benchmark	2.40%	
		100.00%	

30-Jun-2012 - 30-Sep-2012			
Domestic Broad			
Eq	Russell 3000 Index	43.50%	
Domestic Fixed	Bloomberg Universal	25.00%	
Real Estate	NCREIF Property Index+0.50%	9.00%	
Intl Equity	MSCI ACWI xUS (Net)	20.00%	
Other Alternatives	Alternative Asset Benchmark	2.50%	
		100.00%	

31-Mar-2012 - 30-Jun-2012			
Domestic Broad			
Eq	Russell 3000 Index	40.10%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	7.60%	
Intl Equity	MSCI ACWI xUS (Net)	20.00%	
Other Alternatives	Alternative Asset Benchmark	2.30%	
		100.00%	

31-Dec-2011 - 31-Mar-2012			
Domestic Broad			
Eq	Russell 3000 Index	39.70%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	8.00%	
Intl Equity	MSCI ACWI xUS (Net)	20.00%	
Other Alternatives	Alternative Asset Benchmark	2.30%	
		100.00%	

30-Sep-2011 - 31-Dec-2011			
Domestic Broad			
Eq	Russell 3000 Index	40.20%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	7.40%	
Intl Equity	MSCI ACWI xUS (Net)	20.00%	
Other Alternatives	Alternative Asset Benchmark	2.40%	
		100.00%	

30-Jun-2011 - 30-Sep-2011			
Domestic Broad			
Eq	Russell 3000 Index	42.50%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	5.40%	
Intl Equity	MSCI ACWI xUS (Net)	20.00%	
Other Alternatives	Alternative Asset Benchmark	2.10%	
		100.00%	

31-Mar-2011 - 30-Jun-2011			
Domestic Broad			
Eq	Russell 3000 Index	43.00%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	5.30%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	1.70%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

31-Dec-2010 - 31-Mar-2011			
Domestic Broad			
Eq	Russell 3000 Index	43.00%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	5.20%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	1.80%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

30-Sep-2010 - 31-Dec-2010			
Domestic Broad			
Eq	Russell 3000 Index	42.80%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	5.40%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	1.80%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

30-Jun-2010 - 30-Sep-2010			
Domestic Broad			
Eq	Russell 3000 Index	42.90%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	5.00%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	2.10%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

31-Dec-2009 - 30-Jun-2010			
Domestic Broad			
Eq	Russell 3000 Index	43.30%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	4.70%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	2.00%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

30-Sep-2009 - 31-Dec-2009			
Domestic Broad			
Eq	Russell 3000 Index	42.30%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	5.50%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	2.20%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

30-Jun-2009 - 30-Sep-2009			
Domestic Broad			
Eq	Russell 3000 Index	41.50%	
Domestic Fixed	Bloomberg Universal	30.00%	
Real Estate	NCREIF Property Index+0.50%	6.20%	
Intl Equity	MSCI ACWI xUS (Net)	15.00%	
Other Alternatives	Alternative Asset Benchmark	2.30%	
Global Equity			
Broad	MSCI ACWI (Net)	5.00%	
		100.00%	

Alternatives Benchmark represents from 7/1/2022 to present: 66.7% Russell 3000 Idx + 2% (1 qtr lag) and 33.3% ((50% S&P LSTA Leveraged Loan 100 Idx + 50% Bloomberg HY Idx) + 1%) (1 qtr lag).

From 7/1/2019 to 7/1/2022: 66.7% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Index (1 qtr lag). From 7/1/2016 to 7/1/2019: 33.3% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Index (1 qtr lag) + 33.3% of Cash (6-mo USD LIBOR) + 5%. From 7/1/2015 to 7/1/2016: 33.3% S&P 500 +3% (1qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Idx(1 qtr lag) + 33.3% of Cash (1 month USD LIBID) +5%. From 7/1/2013 to 7/1/2015: S&P 500 plus 5% (1 qtr lag). From 7/1/2011 to 7/1/2013: Qtr ending weight of Private Equity x S&P 500 plus 5% + Qtr ending weight Absolute Return x CPI + 5%. Prior to 7/1/2011: CPI + 5%.

New Hampshire Retirement System Target History

31-Mar-2009 - 30-Jun-2009		
Domestic Broad		
Eq	Russell 3000 Index	38.00%
Domestic Fixed	Bloomberg Universal	30.00%
Real Estate	NCREIF Property Index+0.50%	9.30%
Intl Equity	MSCI ACWI xUS (Net)	15.00%
Other Alternatives	Alternative Asset Benchmark	2.70%
Global Equity		
Broad	MSCI ACWI (Net)	5.00%
		100.00%

31-Dec-2008 - 31-Mar-2009		
Domestic Broad		
Eq	Russell 3000 Index	37.20%
Domestic Fixed	Bloomberg Universal	30.00%
Real Estate	NCREIF Property Index+0.50%	9.70%
Intl Equity	MSCI ACWI xUS (Net)	15.00%
Other Alternatives	Alternative Asset Benchmark	3.10%
Global Equity		
Broad	MSCI ACWI (Net)	5.00%
		100.00%

30-Sep-2008 - 31-Dec-2008		
Domestic Broad		
Eq	Russell 3000 Index	38.90%
Domestic Fixed	Bloomberg Universal	30.00%
Real Estate	NCREIF Property Index	8.20%
Intl Equity	MSCI ACWI xUS (Net)	15.00%
Other Alternatives	Consumer Price Index (W) + 5%	2.90%
Global Equity		
Broad	MSCI ACWI (Net)	5.00%
		100.00%

30-Jun-2008 - 30-Sep-2008		
Domestic Broad		
Eq	Russell 3000 Index	40.00%
Domestic Fixed	Bloomberg Universal	30.00%
Real Estate	NCREIF Property Index	7.30%
Intl Equity	MSCI ACWI xUS (Net)	15.00%
Other Alternatives	Consumer Price Index (W) + 5%	2.70%
Global Equity		
Broad	MSCI ACWI (Net)	5.00%
		100.00%

30-Jun-2007 - 30-Jun-2008		
Domestic Broad		
Eq	Russell 3000 Index	44.00%
Domestic Fixed	Bloomberg Universal	30.00%
Real Estate	NCREIF Property Index	5.00%
Intl Equity	MSCI ACWI xUS (Net)	16.00%
Other Alternatives	Consumer Price Index (W) + 5%	5.00%
		100.00%

30-Nov-2006 - 30-Jun-2007		
Domestic Broad		
Eq	Russell 3000 Index	44.00%
Domestic Fixed	Bloomberg Universal	26.00%
Real Estate	NCREIF Property Index	5.00%
Intl Equity	MSCI ACWI xUS (Net)	16.00%
Other Alternatives	Consumer Price Index (W) + 5%	5.00%
Global Fixed-Inc	Brandywine Blended Benchmark	4.00%
		100.00%

30-Jun-2003 - 30-Nov-2006		
Domestic Broad		
Eq	Russell 3000 Index	47.00%
Domestic Fixed	Bloomberg Universal	18.00%
Real Estate	NCREIF Property Index	10.00%
Intl Equity	MSCI ACWI xUS (Net)	12.00%
Other Alternatives	Consumer Price Index (W) + 5%	10.00%
Global Fixed-Inc	Brandywine Blended Benchmark	3.00%
		100.00%

31-Oct-1997 - 30-Jun-2003		
Domestic Broad		
Eq	S&P 500 Index	50.00%
Domestic Fixed	Bloomberg Universal	18.00%
Real Estate	NCREIF Property Index	10.00%
Intl Equity	MSCI EAFE (Net)	9.00%
Other Alternatives	Consumer Price Index (W) + 5%	10.00%
Global Fixed-Inc	Brandywine Blended Benchmark	3.00%
		100.00%

31-Mar-1990 - 31-Oct-1997		
Domestic Broad		
Eq	S&P 500 Index	50.00%
Domestic Fixed	Bloomberg Universal	18.00%
Real Estate	NCREIF Property Index	10.00%
Intl Equity	MSCI EAFE (Net)	9.00%
Other Alternatives	Consumer Price Index (W) + 5%	10.00%
Global Fixed-Inc	JPM GBI Global Unhedged USD	3.00%
		100.00%

30-Jun-1975 - 31-Mar-1990		
Domestic Broad		
Eq	S&P 500 Index	50.00%
Real Estate	NCREIF Property Index	10.00%
Intl Equity	MSCI EAFE (Net)	9.00%
Other Alternatives	Consumer Price Index (W) + 5%	10.00%
Global Fixed-Inc	JPM GBI Global Unhedged USD	3.00%
		82.00%

Alternatives Benchmark represents from 7/1/2022 to present: 66.7% Russell 3000 Idx + 2% (1 qtr lag) and 33.3% ((50% S&P LSTA Leveraged Loan 100 Idx + 50% Bloomberg HY Idx) + 1%) (1 qtr lag).

From 7/1/2019 to 7/1/2022: 66.7% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Index (1 qtr lag). From 7/1/2016 to 7/1/2019: 33.3% S&P 500 +3% (1 qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Index (1 qtr lag) + 33.3% of Cash (6-mo USD LIBOR) + 5%. From 7/1/2015 to 7/1/2016: 33.3% S&P 500 +3% (1qtr lag) + 33.3% S&P LSTA Leverage Loan 100 Idx(1 qtr lag) + 33.3% of Cash (1 month USD LIBID) +5%. From 7/1/2013 to 7/1/2015: S&P 500 plus 5% (1 qtr lag). From 7/1/2011 to 7/1/2013: Qtr ending weight of Private Equity x S&P 500 plus 5% + Qtr ending weight Absolute Return x CPI + 5%. Prior to 7/1/2011: CPI + 5%.

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Past performance is no guarantee of future results.

NHRS Asset Allocation Update

NHRS Investment Team
Independent Investment Committee Meeting

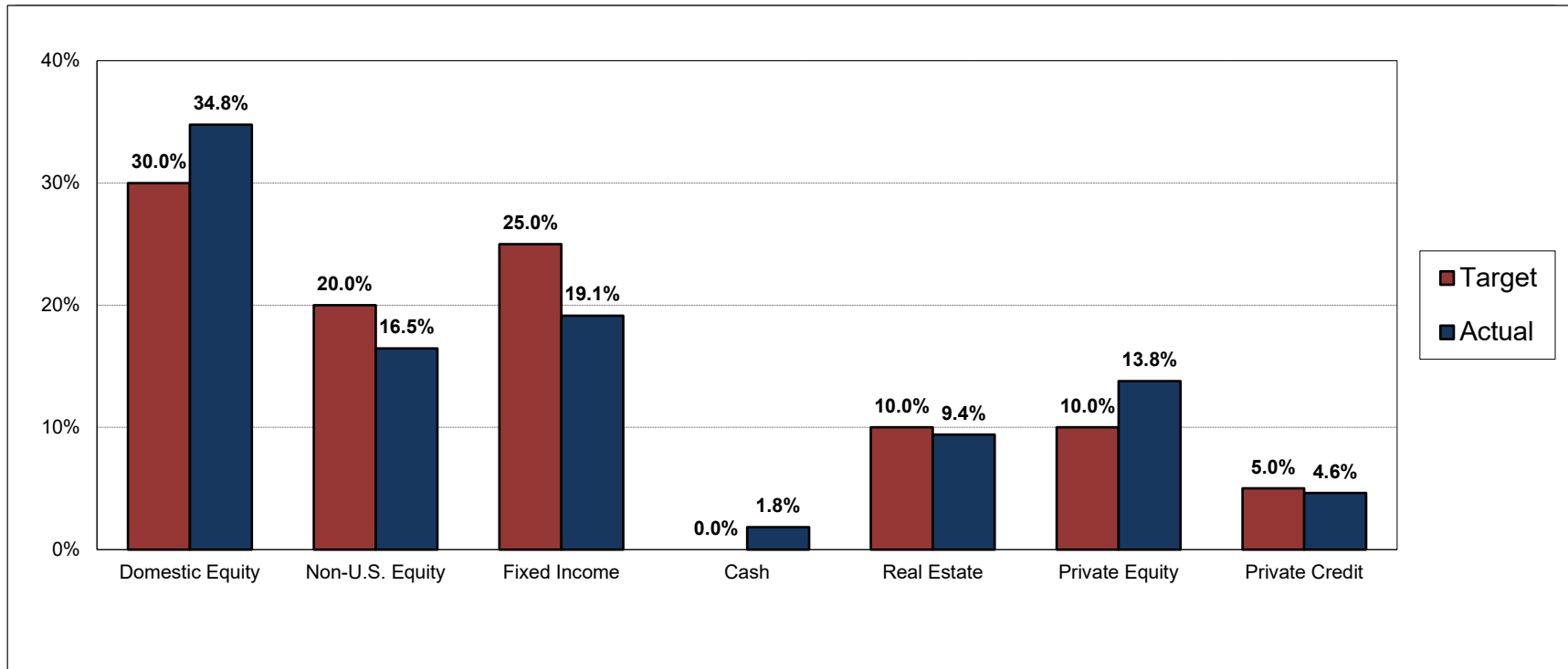
July 9, 2024

Summary



- On May 31, 2024, the preliminary Total Fund value was approximately \$12.1 billion.
- Current asset allocation targets and ranges were approved by the Board of Trustees on September 11, 2012 (targets) and May 14, 2019 (ranges), respectively.
 - The new Target Asset Allocation approved by the Board in December 2023 will be effective beginning in the new fiscal year as of July 1, 2024.
- Allocations are managed within approved allocation ranges. All asset classes are continually monitored and Staff takes action to prudently rebalance as a range limit is approached.
- Current status of Targets vs. Actual is illustrated on page 2.
- All asset classes are within approved allocation ranges (page 3) as of May 31, 2024.
 - The investment team will adjust the allocation within the target ranges at the conclusion of the ongoing implementation plan for the total plan.
- Total Fund allocation is above and below the target of 70% Equity-like and 30% Fixed Income investments, respectively as of May 31st(page 4).

Class Targets vs. Actual Allocation as of May 31, 2024 (Preliminary)



Source: NHRS

Asset Class Allocations Relative to Policy Targets and Ranges



As of May 31, 2024 (preliminary)

Asset Class	Range	Allocation			Objective	Comments
		Target	Actual	Variance		
Domestic Equity	20 - 40%	30.0%	34.8%	4.8%	Monitor	No immediate action needed.
Non-U.S. Equity	15 - 25%	20.0%	16.5%	-3.5%	Monitor	Below target allocation but within approved allocation range. Continue to Monitor.
Fixed Income ²	20 - 30%	25.0%	19.1%	-5.9%	Monitor	Below target allocation but within approved allocation range when cash is included.
Cash ²	NA	0.0%	1.8%	1.8%	No Action	Minimal cash balance to provide liquidity, as needed, for annuities, capital calls, and other plan needs.
Real Estate (RE) ¹	5 - 20%	10.0%	9.4%	-0.6%	Monitor	No immediate action needed.
Private Equity ¹	5 - 15%	10.0%	13.8%	3.8%	Monitor	No immediate action needed.
Private Credit ¹	0 - 10%	5.0%	4.6%	-0.4%	Monitor	No immediate action needed.
		100.0%	100.0%	0.0%		

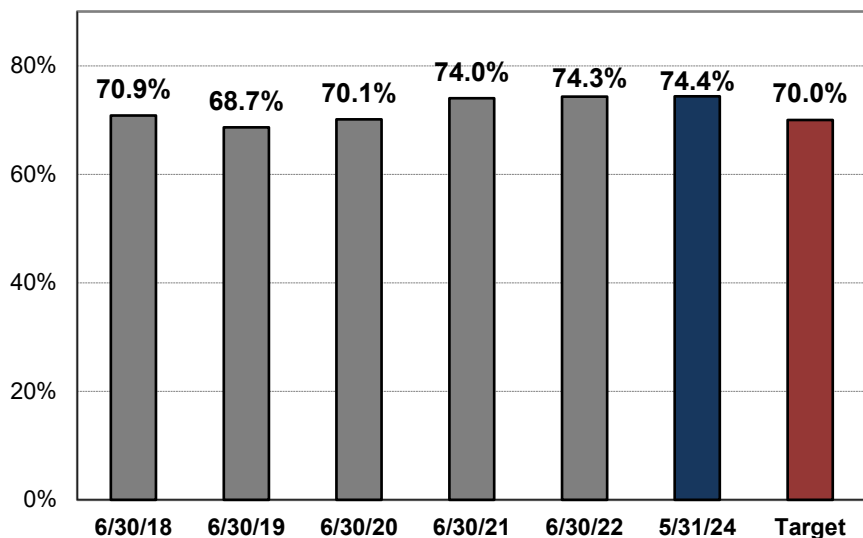
¹ As reported on the May 31, 2024 Callan Monthly Review.

² The Fixed Income allocation will be adjusted and rebalanced within target ranges upon completion of the ongoing implementation plan for the entire portfolio.

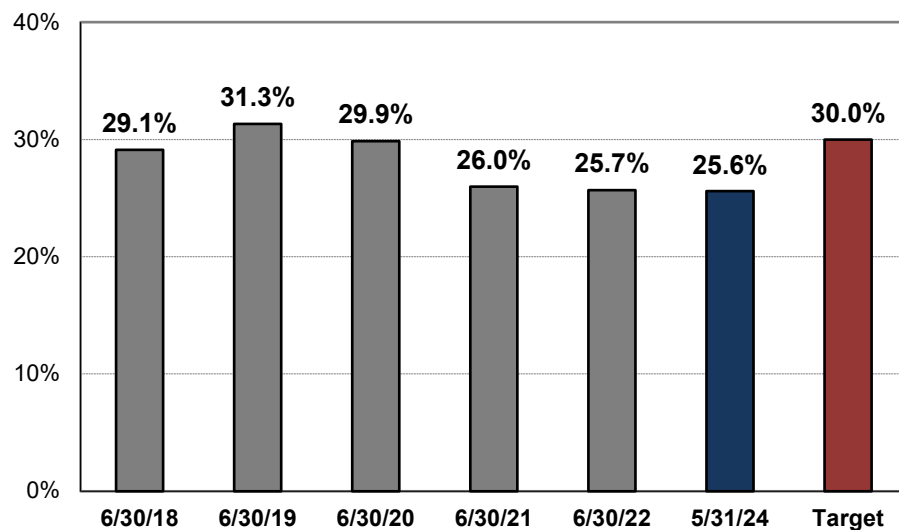
Source: NHRS

- The Total Fund allocation is above and below the target of 70% Equity-like and 30% Fixed Income investments, respectively.

Equity-like Investments



Fixed Income



Source: NHRS

Private Debt & Equity Summary: As of June 30, 2024

<u>IIC Approval</u>	<u>Investment Name</u>	<u>Amount</u>	<u>Strategy</u>
June 2009	Lexington Capital Partners VII	\$ 20,000,000	Secondaries
March 2011	Siguler Guff Distressed Opportunities IV *	\$ 20,000,000	Distressed
April 2011	Avenue Special Situations Fund VI	\$ 20,000,000	Distressed
April 2011	Lexington Capital Partners VII	\$ 20,000,000	Secondaries
May 2011	Industry Ventures Fund VI *	\$ 20,000,000	Secondaries
August 2011	RFE Investment Partners VIII *	\$ 20,000,000	Buyout
August 2011	Tennenbaum Opportunities Fund VI	\$ 20,000,000	Distressed
September 2011	Edgewater Growth Capital Partners Fund III *	\$ 20,000,000	Buyout
November 2011	SL Capital European Smaller Funds I *	\$ 20,000,000 **	Buyout
July 2012	Ironwood Mezzanine Fund III *	\$ 20,000,000	Mezzanine
July 2012	Coller International Partners VI	\$ 20,000,000	Secondaries
December 2012	Paul Capital Partners X *	\$ 12,500,000	Secondaries
February 2013	HarbourVest Dover Street VIII *	\$ 50,000,000	Secondaries
May 2013	Gramercy Distressed Opportunity Fund II *	\$ 50,000,000	Distressed
July 2013	Monroe Capital Senior Secured Direct Loan Fund *	\$ 50,000,000	Direct Lending
September 2013	Industry Ventures Fund VII *	\$ 20,000,000	Secondaries
September 2013	Industry Ventures Partnership Holdings Fund III *	\$ 20,000,000	Venture Capital
October 2013	Pine Brook Capital Partners II	\$ 50,000,000	Growth
February 2014	CCMP Capital Investors III	\$ 50,000,000	Buyout
February 2014	Carlyle Group *	\$ 150,000,000	Growth
March 2014	Crescent Direct Lending Levered Fund *	\$ 50,000,000	Direct Lending
April 2014	Lexington Capital Partners VIII *	\$ 50,000,000	Secondaries
August 2014	Alcentra European Direct Lending Fund	\$ 50,000,000	Direct Lending
August 2014	HarbourVest HIPEP VII *	\$ 50,000,000	Buyout
September 2014	Top Tier Venture Velocity Fund *	\$ 20,000,000	Secondaries
October 2014	BlackRock Private Opportunities Fund - 2014 Series	\$ 150,000,000	Co-Investments
November 2014	NGP Natural Resources XI *	\$ 75,000,000	Energy
January 2015	Comvest Capital III *	\$ 40,000,000	Direct Lending
January 2015	CarVal Investors Credit Value Fund III *	\$ 50,000,000	Multi-sector
April 2015	Coller International Partners VII	\$ 50,000,000	Secondaries
August 2015	Gramercy Distressed Opportunity Fund III *	\$ 50,000,000	Distressed
August 2015	Monroe Capital Private Credit Fund II *	\$ 50,000,000	Direct Lending
August 2015	BlueBay Direct Lending Fund II *	\$ 50,000,000 **	Direct Lending
September 2015	Industry Ventures Partnership Holdings Fund IV *	\$ 20,000,000	Venture Capital
September 2015	Warburg Pincus XII	\$ 64,000,000 ***	Growth
November 2015	HarbourVest Dover Street IX *	\$ 50,000,000	Secondaries
November 2015	Kayne Anderson Energy Fund VII *	\$ 50,000,000	Energy
February 2016	Alcentra European Direct Lending Fund II *	\$ 50,000,000	Direct Lending
February 2016	Riverstone Credit Partners *	\$ 50,000,000	Energy
March 2016	Thoma Bravo Fund XII	\$ 46,000,000 ***	Buyout
October 2016	Comvest Capital IV *	\$ 50,000,000	Direct Lending
December 2016	HarbourVest HIPEP VIII *	\$ 50,000,000	Buyout
January 2017	Actis Energy 4	\$ 50,000,000	Energy
February 2017	Edgewater Growth Capital Partners Fund IV *	\$ 50,000,000	Buyout
February 2017	Top Tier Venture Velocity Fund 2 *	\$ 25,000,000	Secondaries
April 2017	Apollo Investment Fund IX	\$ 40,000,000 ***	Buyout
June 2017	Crescent Direct Lending Levered Fund II *	\$ 50,000,000	Direct Lending
September 2017	Carlyle Asia V *	\$ 50,000,000	Growth
September 2017	CarVal Investors Credit Value Fund IV *	\$ 50,000,000	Multi-sector
October 2017	BlackRock Private Opportunities Fund - 2018 Series	\$ 150,000,000	Co-Investments
November 2017	Riverstone Credit Partners II *	\$ 50,000,000	Energy
February 2018	Industry Ventures Partnership Holdings Fund V *	\$ 25,000,000	Venture Capital
March 2018	BlueBay Direct Lending Fund III *	\$ 50,000,000	Direct Lending
April 2018	Monroe Capital Private Credit Fund III *	\$ 50,000,000	Direct Lending
September 2018	Alcentra European Direct Lending Fund III *	\$ 50,000,000	Direct Lending
September 2018	Thoma Bravo Fund XIII	\$ 50,000,000	Buyout
September 2018	Warburg Pincus Global Growth	\$ 50,000,000	Growth
April 2019	HarbourVest Dover Street X *	\$ 50,000,000	Secondaries
April 2019	Top Tier Venture Velocity Fund 3 *	\$ 25,000,000	Secondaries

Private Debt & Equity Summary: As of June 30, 2024

<u>IIC Approval</u>	<u>Investment Name</u>	<u>Amount</u>	<u>Strategy</u>
March 2020	Coller International Partners VIII	\$ 75,000,000	Secondaries
March 2020	HarbourVest HIPEP IX *	\$ 75,000,000	Buyout
April 2020	Comvest Capital V *	\$ 50,000,000	Direct Lending
September 2020	Thoma Bravo Fund XIV	\$ 50,000,000 ***	Buyout
October 2020	CarVal Investors Credit Value Fund V *	\$ 50,000,000	Multi-sector
October 2020	Industry Ventures Fund IX *	\$ 50,000,000	Secondaries
November 2020	BlackRock Private Opportunities Fund - 2021 Series	\$ 150,000,000	Co-Investments
December 2020	Monroe Capital Private Credit Fund IV *	\$ 50,000,000	Direct Lending
February 2021	Crescent Direct Lending Levered Fund III *	\$ 50,000,000	Direct Lending
June 2021	Industry Ventures Partnership Holdings Fund VI *	\$ 25,000,000	Venture Capital
September 2021	Top Tier Venture Velocity Fund 4 *	\$ 25,000,000	Secondaries
November 2021	Atalaya Special Opportunities Fund VIII	\$ 50,000,000	Specialty Finance
February 2022	Clearlake Capital Partners VII	\$ 50,000,000	Buyout
February 2022	Thoma Bravo Fund XV	\$ 50,000,000	Buyout
March 2022	Comvest Capital VI *	\$ 50,000,000	Direct Lending
March 2022	Warburg Pincus 14	\$ 50,000,000	Growth
May 2022	HarbourVest Dover Street XI *	\$ 50,000,000	Secondaries
May 2023	American Industrial Partners VIII	\$ 50,000,000	Buyout
May 2023	Apollo X	\$ 40,000,000	Buyout
May 2023	Apollo X Co-Investment	\$ 40,000,000	Buyout
Aug / Sept 2023	Ares Pathfinder II	\$ 75,000,000	Specialty Finance
October 2023	Strategic Value Partners Capital Solutions II	\$ 50,000,000	Multi-sector
December 2023	Sixth Street Partners TAO Global	\$ 75,000,000	Multi-sector
February 2024	H.I.G. Capital Advantage Buyout Fund II	\$ 50,000,000	Buyout
February 2024	H.I.G. Capital Advantage Buyout Fund II Co-Investment	\$ 50,000,000	Buyout
June 2024	Ares Senior Direct Lending Fund III	\$ 100,000,000	Direct Lending
		\$ 4,182,500,000	

Red indicates Private Equity (\$2,612.5m or 62% of commitments)

Green indicates Private Debt (\$1,570.0m or 38% of commitments)

Investments that are bolded and shaded represent re-ups

* Advisory Board Member (includes observer seats)

** Commitment made in Euros

*** Amount reduced due to oversubscription