



Q2 2023 INVESTMENT SUMMARY: BOARD REPORT

MODOT & PATROL EMPLOYEES'
RETIREMENT SYSTEM

SEPTEMBER 2023

Kevin Leonard, Partner

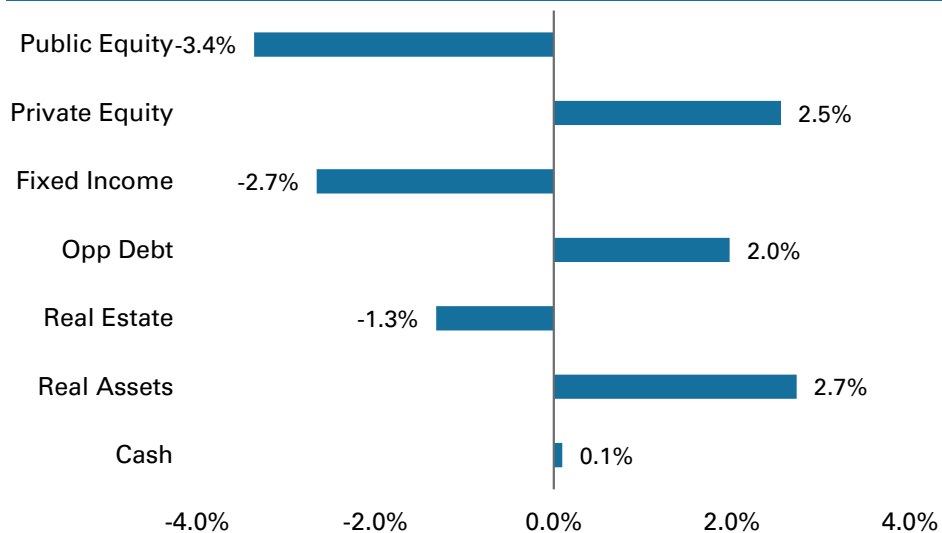
Keith Stronkowsky, Sr. Consultant

Kiley Fischer, Sr. Analyst

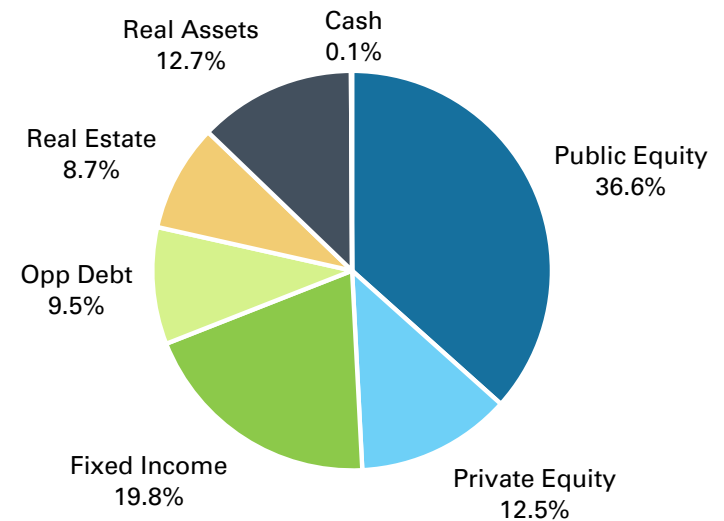


ASSET ALLOCATION – CURRENT vs. POLICY

Current Notional Allocation vs. Policy



Current Notional Allocation

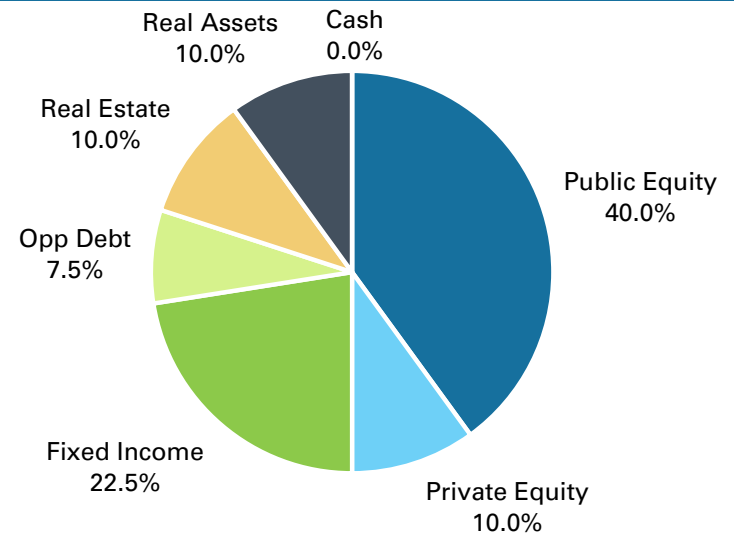


Current Notional Allocation vs. Policy

	Current (\$)	Current %	Policy %	Difference*
Public Equity	\$1,326,766,822	36.6%	40.0%	-3.4%
Private Equity	\$454,431,252	12.5%	10.0%	2.5%
Fixed Income	\$718,485,081	19.8%	22.5%	-2.7%
Opp Debt	\$343,070,440	9.5%	7.5%	2.0%
Real Estate	\$314,321,126	8.7%	10.0%	-1.3%
Real Assets	\$460,801,184	12.7%	10.0%	2.7%
Cash	\$3,456,652	0.1%	0.0%	0.1%
Total	\$3,621,332,559	100.0%	100.0%	

* Difference between the Policy (unlevered) and Current Notional Allocation

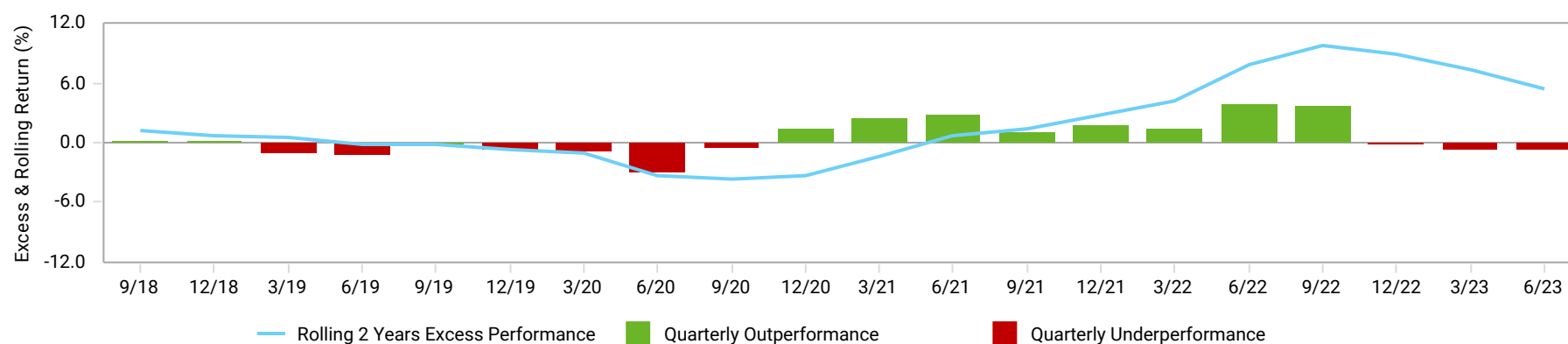
Policy Allocation - Unlevered



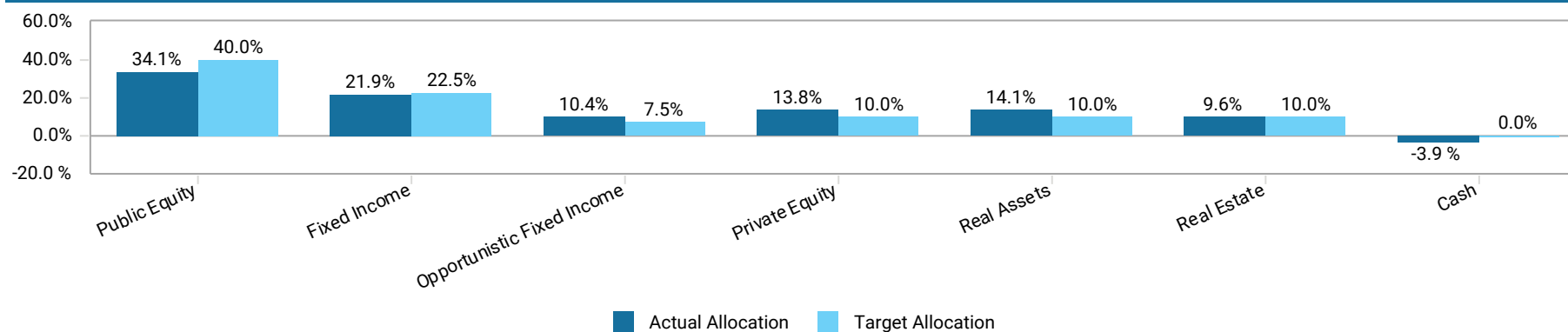
TOTAL FUND PERFORMANCE SUMMARY

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)
Total Composite	3,275,163,126	2.4 (85)	8.9 (55)	14.0 (1)	9.5 (1)	9.3 (1)	8.3 (1)
<i>Policy Index</i>		3.1 (61)	6.4 (90)	7.9 (35)	7.3 (14)	7.6 (25)	7.5 (15)
<i>All Public DB Plans Median</i>		3.3	9.1	7.4	6.4	7.1	6.7

Quarterly and Cumulative Excess Performance

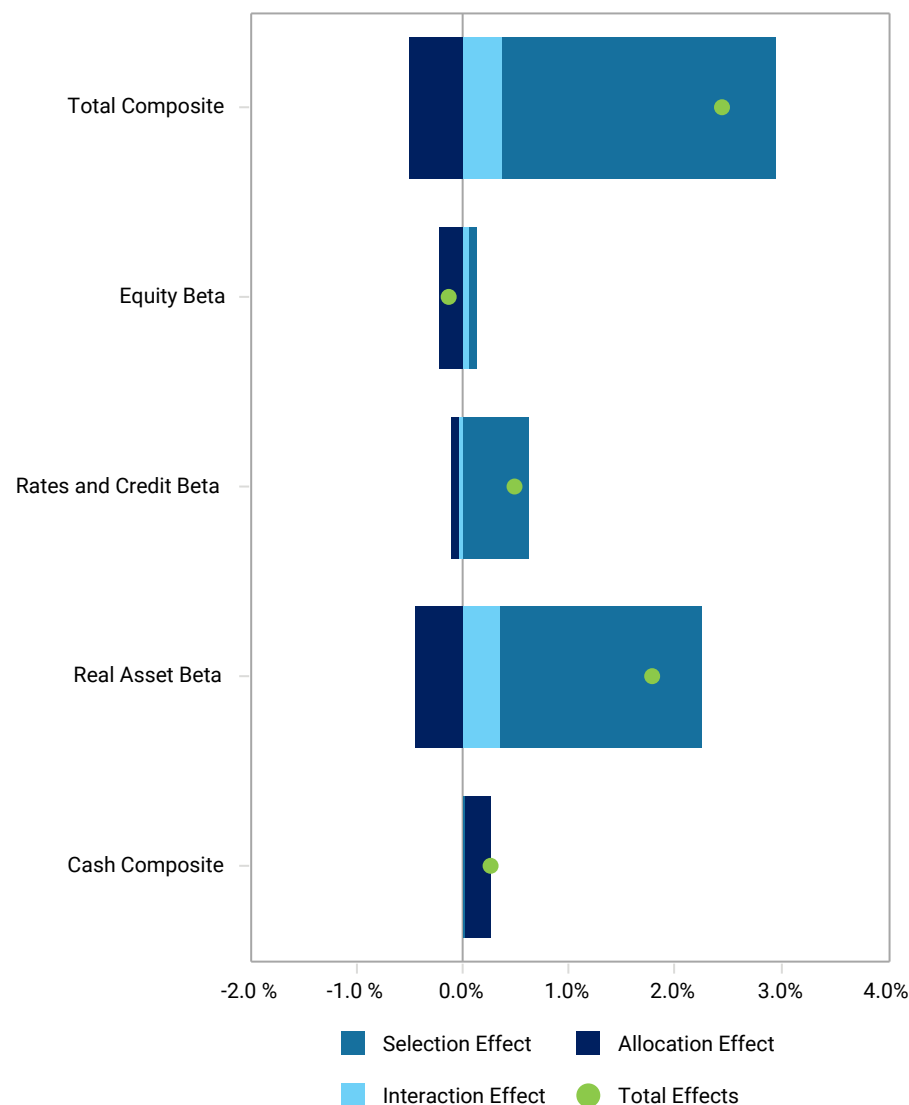


Asset Allocation vs. Target



TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects
1 Year Ending June 30, 2023



Attribution Summary
1 Year Ending June 30, 2023

	Wtd. Actual Return (%)	Wtd. Index Return (%)	Excess Return (%)	Selection Effect (%)	Allocation Effect (%)	Interaction Effects (%)	Total Effects (%)
Equity Beta	12.7	12.4	0.3	0.1	-0.2	0.1	-0.1
Rates and Credit Beta	3.5	1.7	1.8	0.6	-0.1	0.0	0.5
Real Asset Beta	7.1	-2.0	9.1	1.9	-0.5	0.4	1.8
Cash Composite	3.5	3.6	-0.1	0.0	0.3	0.0	0.3
Total Composite	8.9	6.4	2.4	2.6	-0.5	0.4	2.4

Note: Plan attribution calculations are returns based and the results shown reflect the composites shown. As a result, the total returns shown may vary from the calculated return shown on the performance summary.

The target return shown for each composite is a custom index, based on aggregated policy indices. This policy index asset weights the underlying policy indices of each option in the plan and the respective benchmark return.

The allocation, selection, and interaction effects are calculated using the custom index described above along with the policy or target weight of each composite.

May not add due to rounding

Allocation Effect - The return attributable to the asset allocation of the portfolio

Selection Effect - The return attributable to the managers' security selection

Interaction Effect - The return attributable to the interaction between the Allocation and Selection Effects

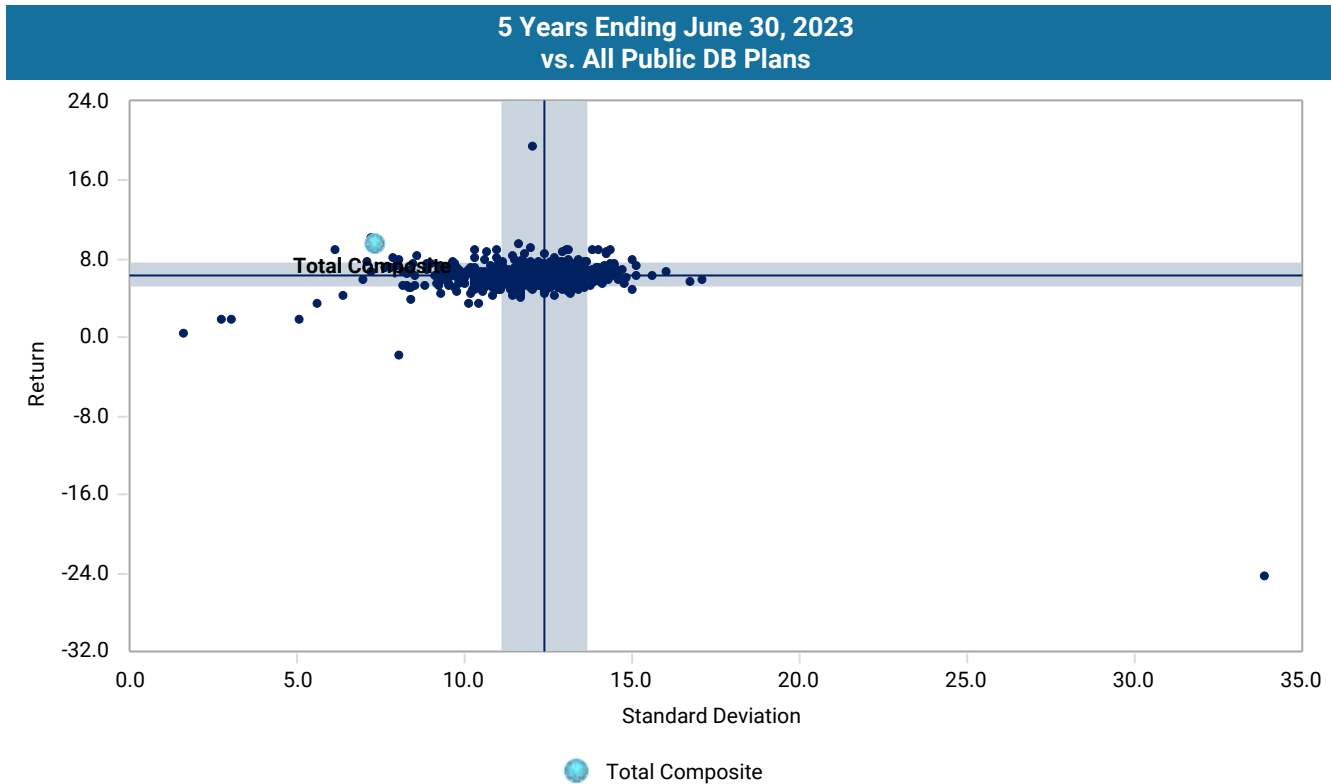
TOTAL FUND ALLOCATION AND RETURN SUMMARY

Asset Allocation					Returns (%)									
	Capital Allocation (\$)	Notional Allocation (\$)	Notional Allocation	Target Allocation	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	20 Yrs	Rank
Total Composite	\$3,275,163,126	\$3,621,332,559	100.0%	100.0%	8.88	55	13.97	1	9.50	1	9.27	1	8.32	1
<i>Policy Index</i>					6.44	90	7.93	35	7.30	14	7.62	25	7.48	15
Equity Beta	\$1,565,128,642	\$1,781,198,075	49.2%	50.0%	12.73		17.87							
Public Equities	\$1,110,697,389	\$1,326,766,822	36.6%	40.0%	18.08	36	15.64	10	8.35	43	8.76	46	8.60	44
<i>MSCI ACWI</i>					16.53	47	10.99	47	8.10	46	8.75	46	8.17	55
Private Equity	\$454,431,252	\$454,431,252	12.5%	10.0%	1.28		22.86		17.38		15.73			
<i>MO Hwy PE. Index - Lagged</i>					-4.94		22.12		14.50		15.58			
Rates and Credit Beta	\$1,061,555,521	\$1,061,555,521	29.3%	30.0%	3.49		5.19							
Traditional Fixed Income	\$718,485,081	\$718,485,081	19.8%	22.5%	2.28	54	-1.28	54	2.99	15	4.25	9	4.78	19
<i>Fixed Inc. Custom Benchmark</i>					-0.70	84	-4.11	81	1.03	54	1.79	53	3.31	54
Opportunistic Debt	\$343,070,440	\$343,070,440	9.5%	7.5%	5.45	94	15.27	1	9.35	1				
<i>Bloomberg US High Yield</i>					9.06	30	3.13	52	3.36	43				
Real Assets Beta	\$775,122,310	\$775,122,310	21.4%	20.0%	7.11		15.78							
Real Assets	\$460,801,184	\$460,801,184	12.7%	10.0%	9.83		17.79		9.07		7.48			
<i>CPI + 4% (Unadjusted)</i>					7.09		10.01		8.06		6.82			
Real Estate	\$314,321,126	\$314,321,126	8.7%	10.0%	2.81		12.74		10.45		11.01			
<i>MoDOT Real Estate Blend</i>					-10.51		7.59		6.07		8.12			
Cash Composite	\$3,456,652	\$3,456,652	0.1%	0.0%	3.53		1.24		1.47		0.93		1.35	
<i>90 Day T-Bills</i>					3.59		1.27		1.55		0.97		1.32	
Bank Line	\$130,100,000													

Leverage Metrics	
Fund Leverage (%)	10.6%
Fund Leverage (\$)	\$ 346,169,433
Leverage by Type	
Public Equities	\$ 216,069,433
Bank Line	\$ 130,100,000
	\$ 346,169,433

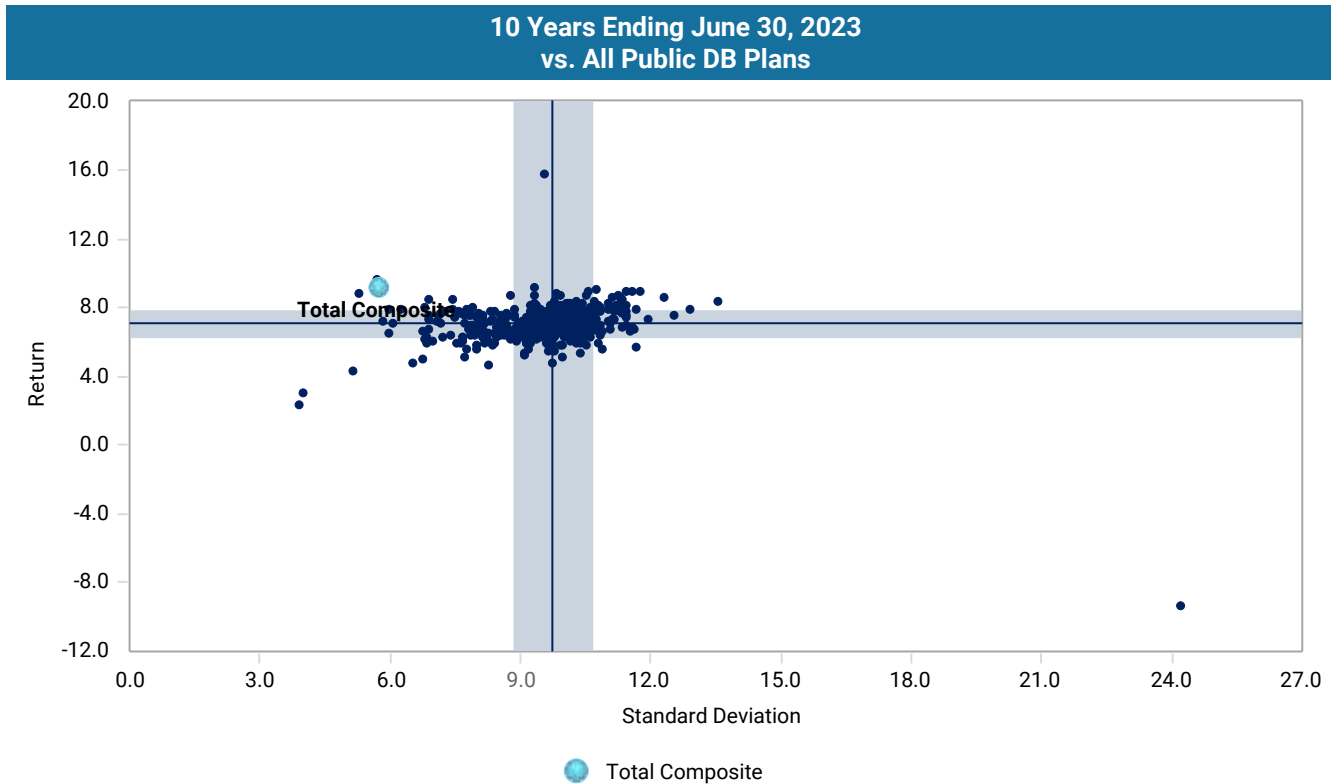


TOTAL FUND RISK/RETURN - 5 YEARS



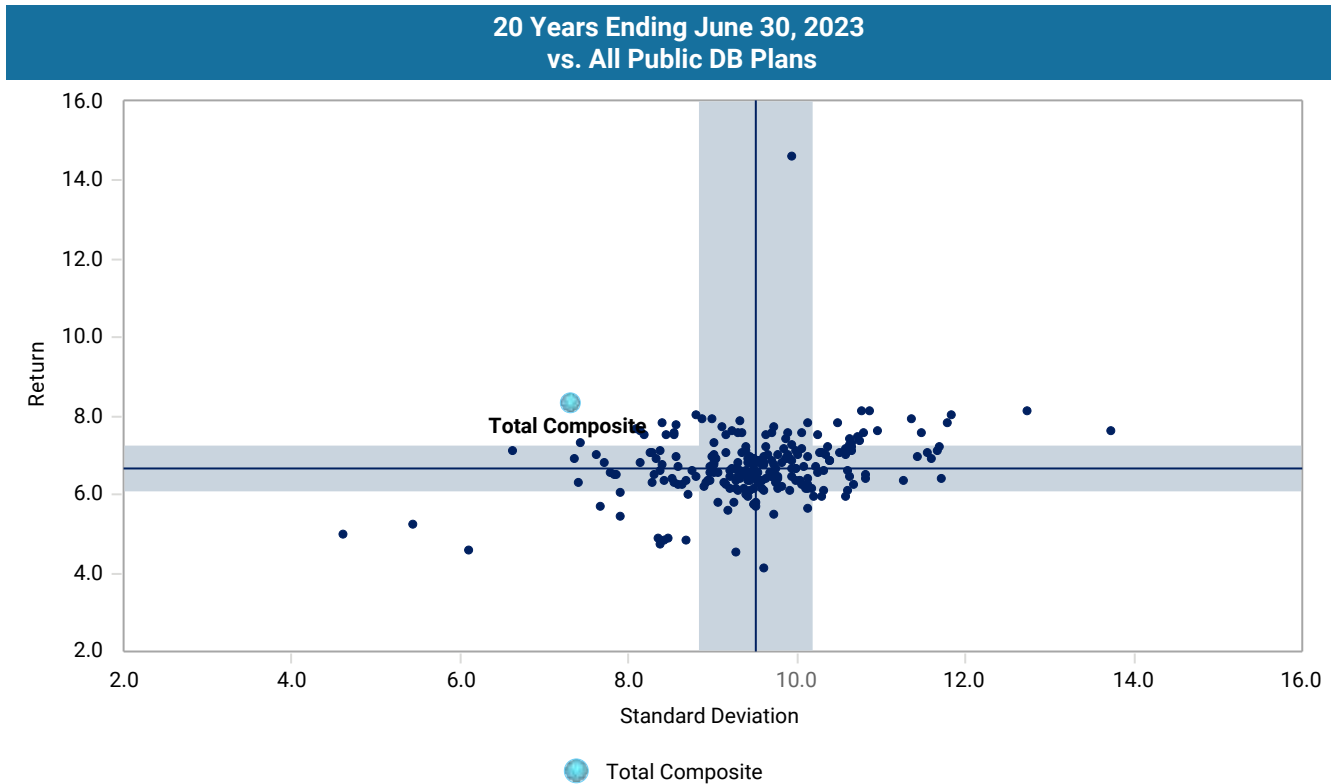
Statistics Summary 5 Years Ending June 30, 2023			
	5 Years Return	5 Years Standard Deviation	5 Years Sharpe Ratio
Total Composite	9.5 (1)	7.3 (1)	1.1 (1)
<i>Policy Index</i>	<i>7.3 (14)</i>	<i>8.5 (4)</i>	<i>0.7 (3)</i>

TOTAL FUND RISK/RETURN - 10 YEARS



Statistics Summary 10 Years Ending June 30, 2023			
	10 Years Return	10 Years Standard Deviation	10 Years Sharpe Ratio
Total Composite	9.3 (1)	5.7 (1)	1.4 (1)
<i>Policy Index</i>	<i>7.6 (25)</i>	<i>6.6 (2)</i>	<i>1.0 (2)</i>

TOTAL FUND RISK/RETURN - 20 YEARS



Statistics Summary 20 Years Ending June 30, 2023			
	20 Years Return	20 Years Standard Deviation	20 Years Sharpe Ratio
Total Composite	8.3 (1)	7.3 (1)	0.9 (1)
<i>Policy Index</i>	<i>7.5 (15)</i>	<i>7.3 (1)</i>	<i>0.8 (1)</i>

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Past performance is no guarantee of future results.

Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.

A “since inception” return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.

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Source of private fund performance benchmark data: Cambridge Associates, via Refinitiv