



# PERA

## **Investments and Pensions Oversight Committee**

*Senator Roberto “Bobby” J. Gonzales, Chair*

*Representative Patricia Roybal Caballero, Vice Chair*

*August 29, 2024*

*Paula Fisher, Board Chair*

*Greg Trujillo, Executive Director*

*Michael Shackelford, Chief Investment Officer*

# Agenda

Section 1: Investment Governance

Section 2: Asset Allocation Process

Section 3: Investment History

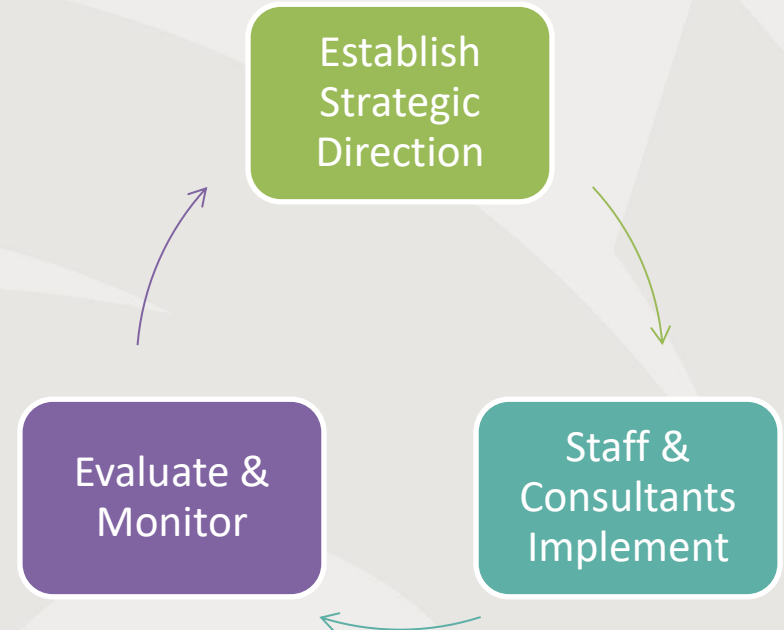
Section 4: Investment Principles

Section 5: Investment Results

# Section 1: Investment Governance

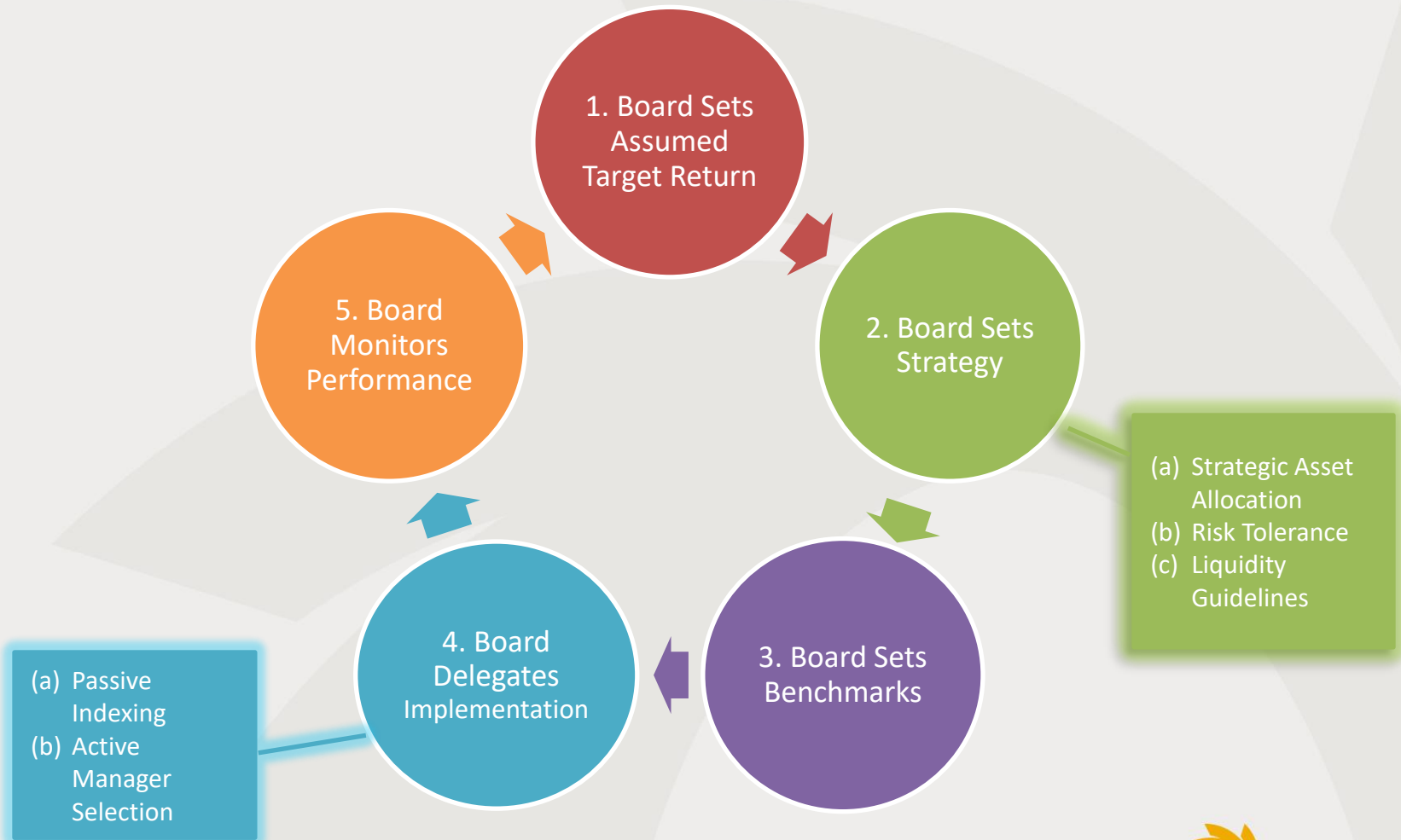
# Board Principal Functions

- Establish a strategic direction
- Hire necessary Staff and General Consultants to implement strategic direction
- Monitor Staff's implementation and evaluate performance



\*Source: Developed from AFSCME-Best Practice Policies for Trustees and Pension Systems

# Board Responsibilities



# Key Strategic Goals

1. Sustain the Trust Fund for current and future retirees
2. Set asset allocation to meet or exceed the 7.25% actuarial assumed return over the long-run while maintaining sufficient liquidity to meet PERA's obligations
3. Produce returns that meet or exceed policy benchmarks
4. Be cost-efficient and achieve a total investment cost at or below the benchmark cost relative to peers adjusted for fund size, allocations, and strategy

*NOTE: Objectives are set in PERA's 5-Year Strategic Plan*

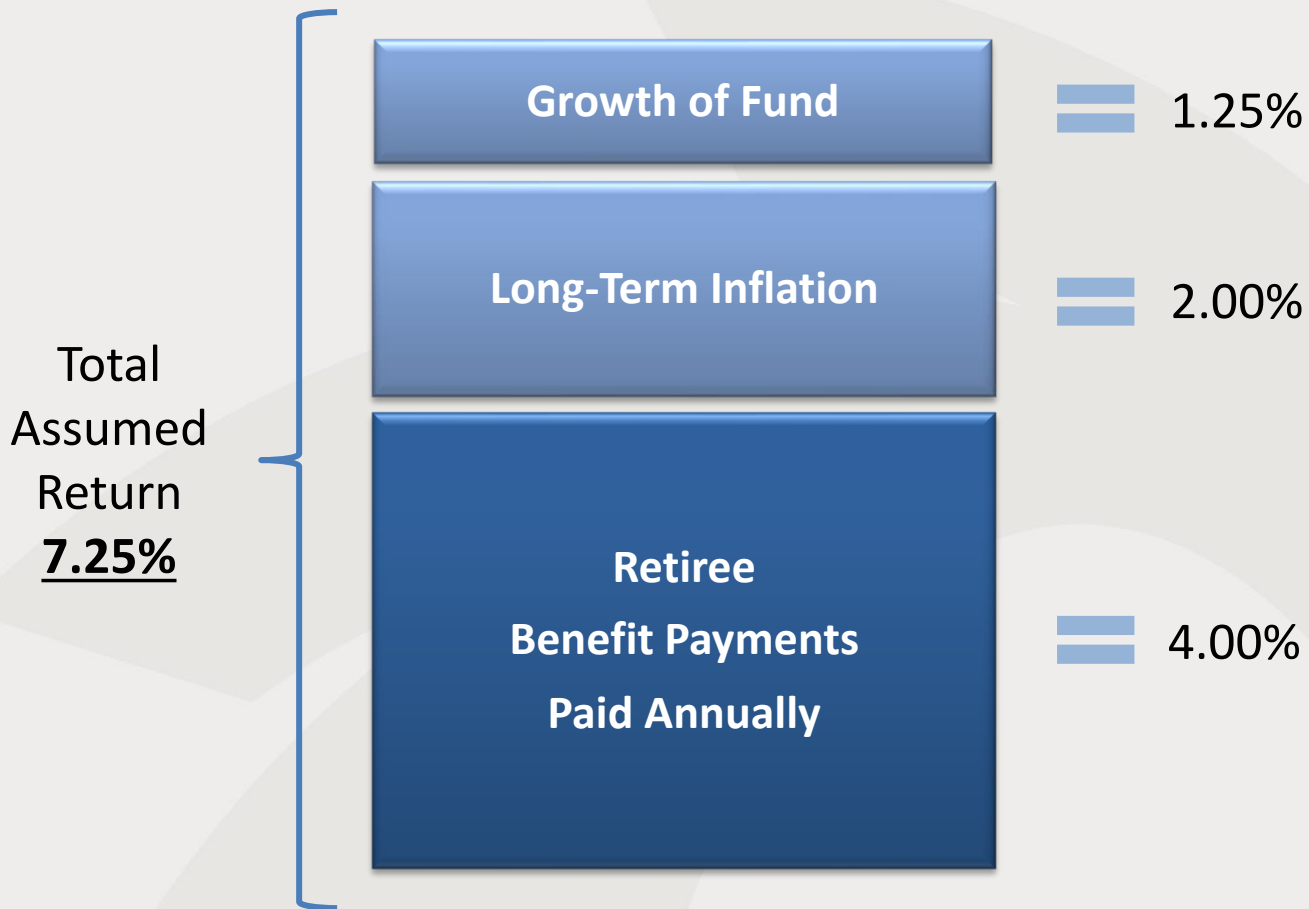
# Investment Staff Functions

- Assist the Board in establishing investment policies
- Portfolio construction – selecting and monitoring investment managers, including due diligence, evaluation, and contract and fee negotiation
- Conduct searches for custodian, consultants, and other third-party service providers
- Oversee the daily administration of investment activities, cash management, risk management, custodial operations, and compliance
- Report to Investment Committee and Board on performance, risk, asset allocations and rebalancing, cash flow projections, securities lending, and other significant investment matters

# Section 2: Asset Allocation Process



# Board Sets Assumed Target Return



# Board Sets Risk Tolerance

Board Decides: appropriate risk tolerance based on desired return and appetite for market volatility/movements

**Total Risk Tolerance = 11% - 13%**



# Board Sets Liquidity Targets

Board Decides: appropriate liquidity target based on cash flow needs and tolerance of the Fund

**At no time shall Tier 1 assets fall below 10% of the total fund market value.**

<b><u>Tier 1 Liquidity (1-5 Days)</u></b>	<b>14%</b>
<b><u>Tier 2 Liquidity (5-90 Days)</u></b>	<b>41%</b>
<b><u>Tier 3 Liquidity (90 days - 1 Year)</u></b>	<b>5%</b>
<b><u>Tier 4 Liquidity (1+ Years)</u></b>	<b>40%</b>

$$Liquidity\ Coverage\ Ratio\ (LCR) = \frac{\begin{matrix} \text{Starting Liquid Financial Assets} \\ \sum(\text{Distributions from Illiquid Assets}) \\ \sum(\text{Employer and Employee Contributions}) \\ \sum(\text{Liquid Investment Return}) \end{matrix}}{\begin{matrix} \sum(\text{Benefit Payment} + \text{Admin Expense}) \\ \sum(\text{Capital Calls for Illiquid Assets}) \end{matrix}}$$

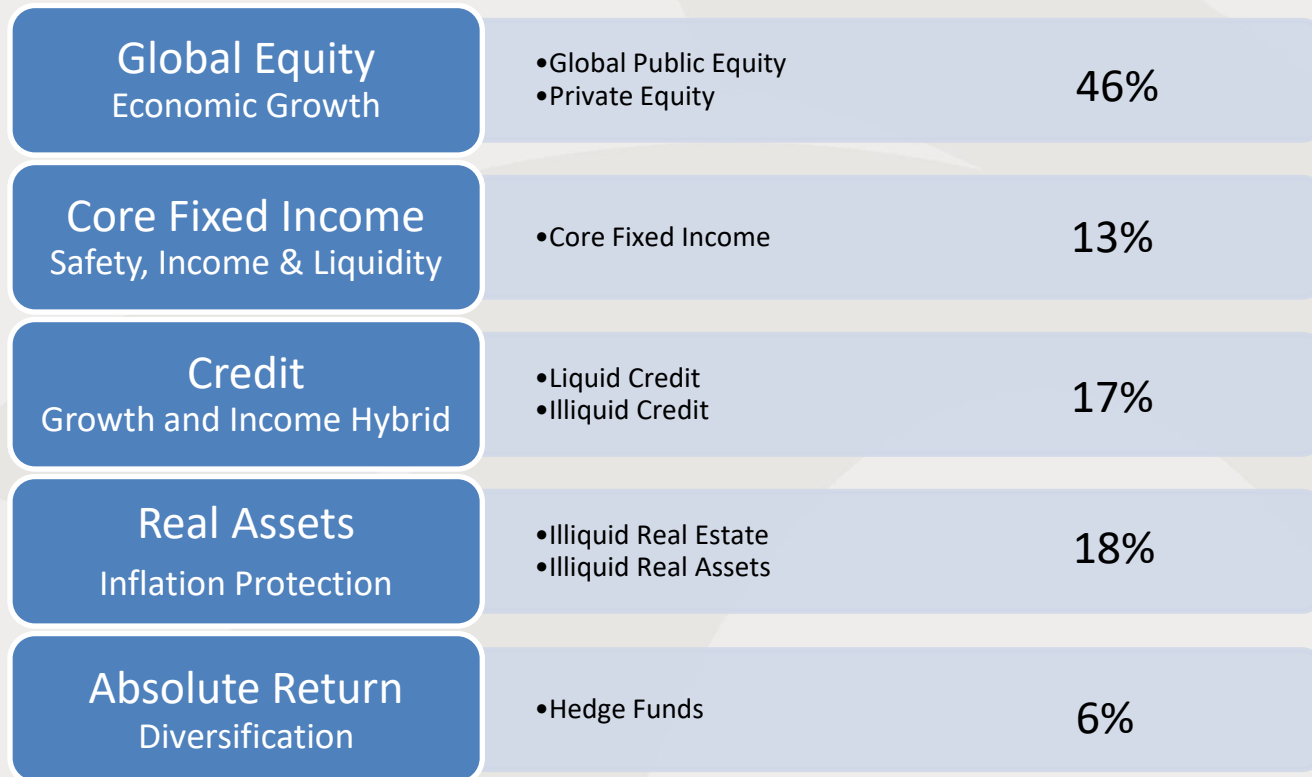
LCR Value	Implication
<1	Yes
>1	No

	Policy	Similar Illiquidity	Higher Illiquidity
<b>Percentile</b>			
95% Percentile	2.18	2.18	2.18
75% Percentile	1.94	1.94	1.94
50% Percentile	1.67	1.67	1.67
25% Percentile	1.47	1.47	1.47
5% Percentile	1.26	1.26	1.26
<b>Probability of Tier 2 Liquidation</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.3%</b>

# Board Sets Strategic Allocation Targets

Board Decides: appropriate asset class mix based on desired growth, diversification, and liquidity objectives

## Total Fund Strategic Asset Allocation



# Board Sets Benchmarks

## Policy Portfolio:

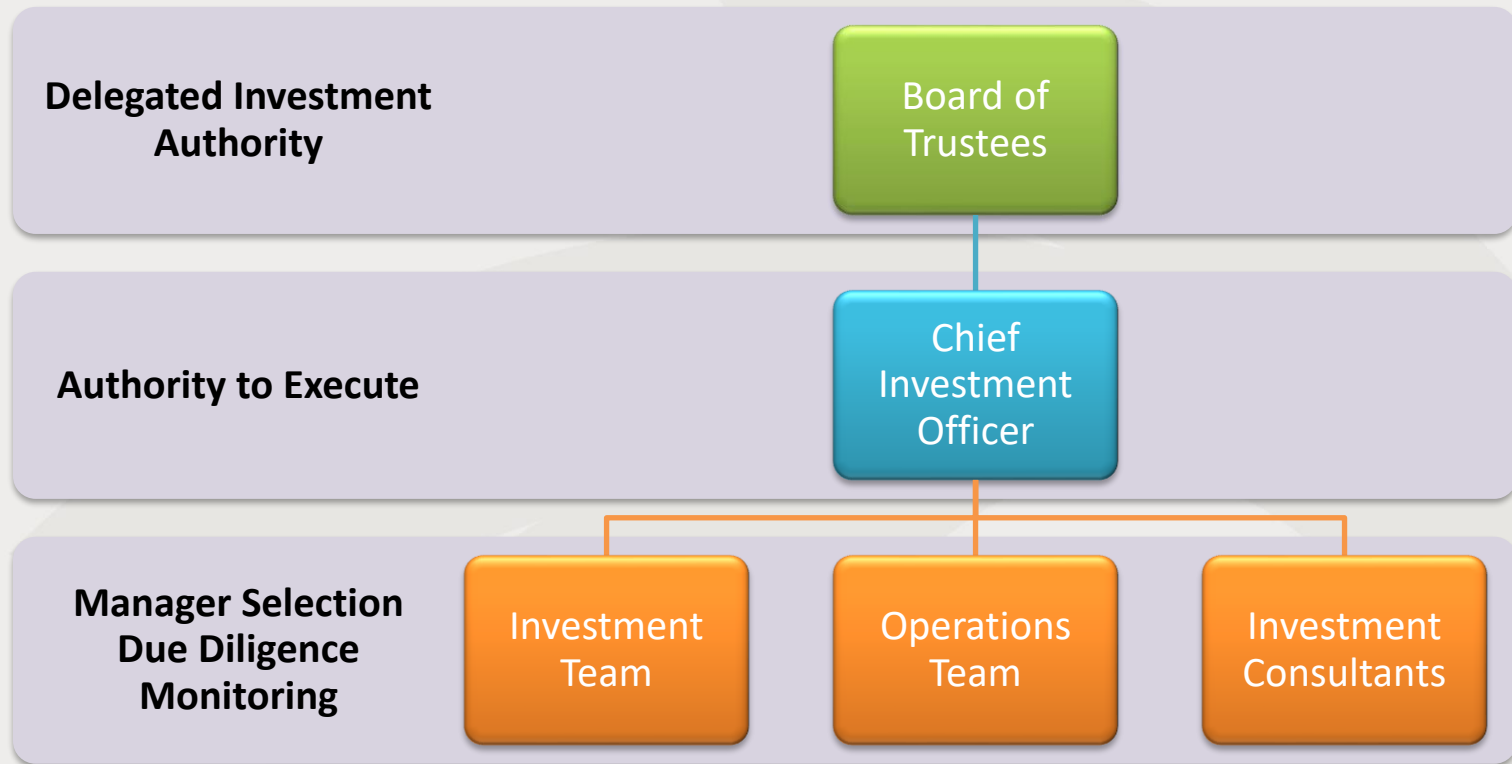
- Diversified, multi-asset, liquid portfolio
- Used as a benchmark to evaluate portfolio implementation effectiveness
- Modeled to reflect Strategic Asset Allocation targets

## APPENDIX B. BENCHMARKS

Effective: April 1, 2024

<b>Global Equity</b>	<b>Weighted Benchmark</b>
Global Public Stock	MSCI ACWI IMI (\$net)
Private Equity	MSCI ACWI IMI (\$net)
<b>Core Fixed Income</b>	<b>Bloomberg U.S. Aggregate Bond Index</b>
Core Fixed Income	Bloomberg U.S. Aggregate Bond Index
<b>Credit</b>	<b>Weighted Benchmark</b>
Liquid Credit	Bloomberg High Yield 2% Issuer Constrained
Illiquid Credit	Morningstar LSTA Leveraged Loan Index
<b>Absolute Return</b>	<b>SOFR + 2.5%</b>
Hedge Funds	SOFR + 2.5%
<b>Real Assets</b>	<b>Weighted Benchmark</b>
Illiquid Real Estate	FTSE EPRA Nareit Global Equity Index
Illiquid Real Assets	S&P / Dow Jones Brookfield Global Infrastructure Index

# Board Delegates Implementation



# Board Monitors Implementation

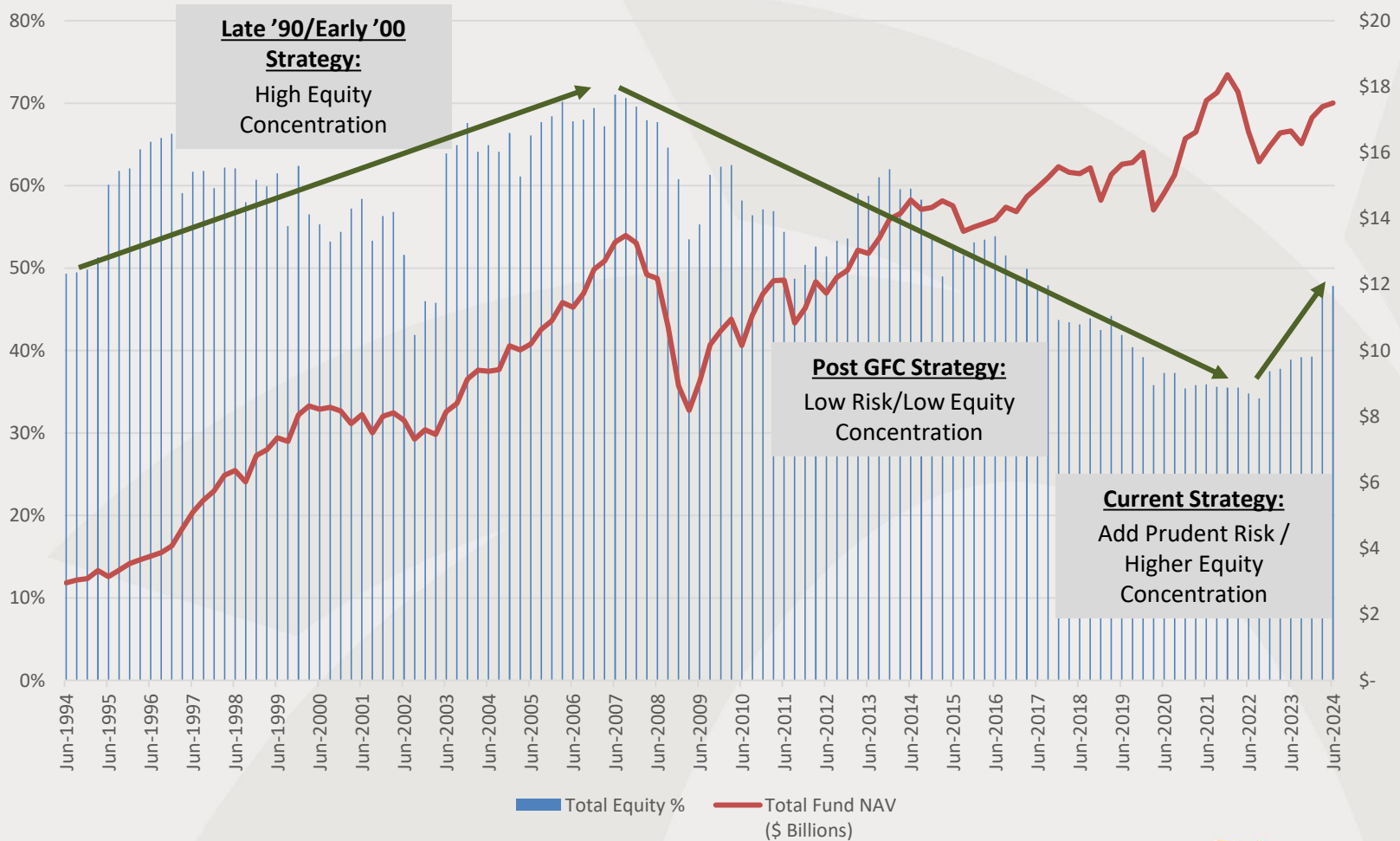
- Quarterly Investment Committee updates provided by CIO and Board Consultant, reviewing:
  - Strategic Goals
  - Asset Allocation
  - Total Fund Performance
  - Cash and Rebalance Activity
  - Manager Selection Activity
  - Market Summary/Review
- Monthly CIO updates Board of Trustees, reviewing:
  - Market and Portfolio Updates
  - Preliminary Monthly Performance
- Ad-hoc reporting and communication as requested

# Section 3: Investment History



# PERA Investment Fund Historical Evolution

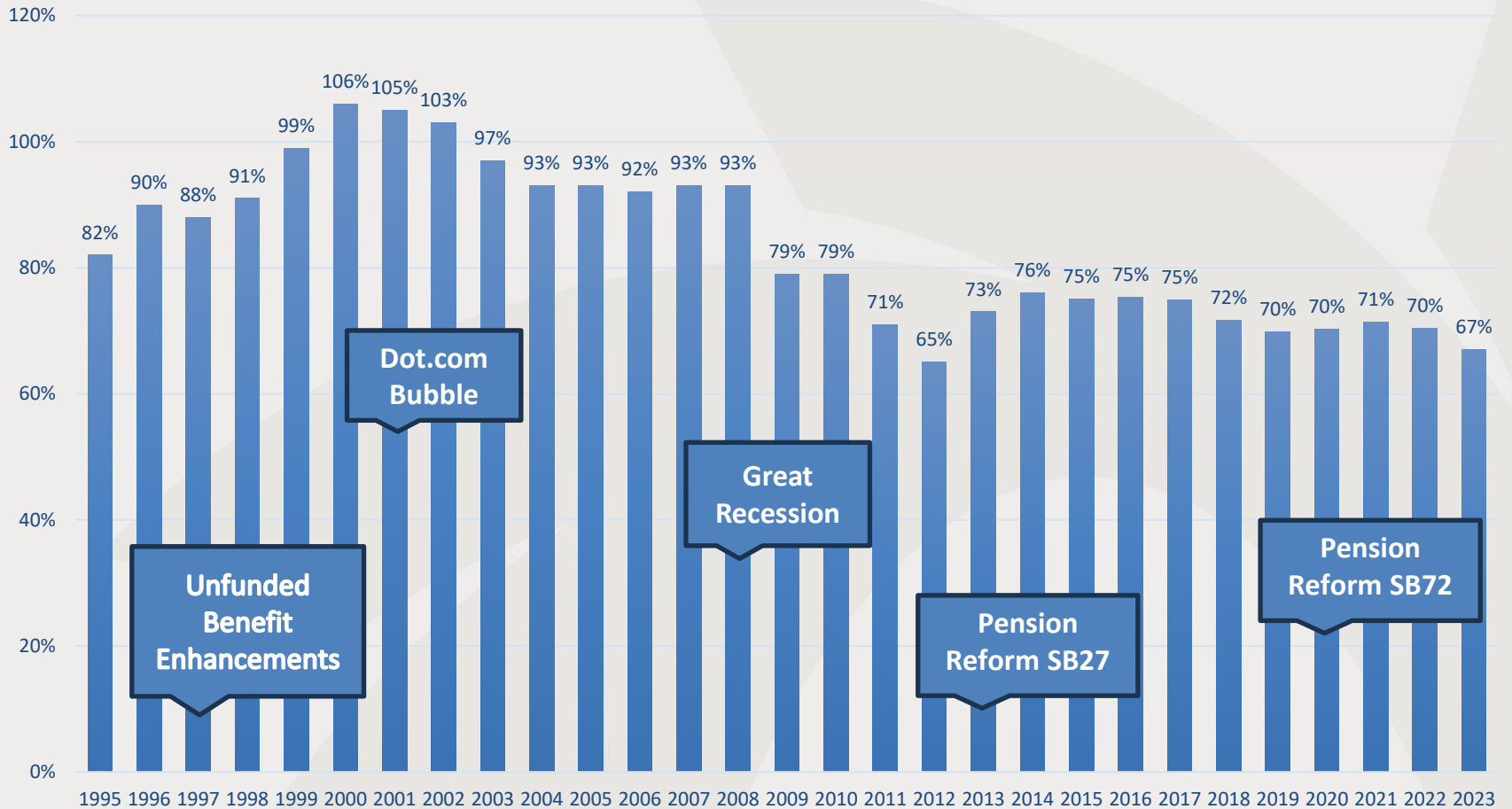
Growth of Fund vs Percent of Stocks



# PERA Investment Fund Historical Evolution

Strategic Asset Allocation Timeline				
2007-2009	2010-2013	2013-2017	2017 to 2021	2022-Current
Great Recession Experience	Recovery from Great Recession Drawdown	Streamlined SAA	Enhanced Governance	New SAA
Strategy: (1) High Equity Concentration (2) Cumbersome Governance	Strategy: (1) Lower Risk Tolerance - Begin to De-Risk Fund (2) Diversify away from Equities	Strategy: (1) Continued De-Risking Fund (2) Diversify Significantly into Private and Other Assets	Strategy: (1) Maintain Low Risk Tolerance (2) Diversify Across Assets & Risks (3) Implement New Governance (4) Increased complexity	Strategy: (1) Add Risk Prudently to Growth Assets (More Equities and Private Assets) (2) Maintain Diversity Across Assets & Risks (3) Simplification

# PERA Funded Status



# PERA Investment Asset Allocation Evolution

NM PERA Asset Class Targets					
Asset Class	FY 2008	FY 2014	FY 2020	FY 2024	Peer Median Public DB
<b>Growth</b>	<b>70</b>	<b>53</b>	<b>36</b>	<b>46</b>	<b>45</b>
Global Public Stock	65	46	24	27	
Private Equity	5	7	12	19	
<b>Fixed Income</b>	<b>25</b>	<b>31</b>	<b>35</b>	<b>30</b>	<b>26</b>
Core Bonds	23	26	20	13	
Liquid Credit	2	5	9	8	
Illiquid Credit	0	0	6	9	
<b>Alternative Assets</b>	<b>5</b>	<b>16</b>	<b>30</b>	<b>24</b>	<b>29</b>
Real Estate	0 - 2.5	5	7	7	
Hedge Funds	0 - 5	4	0	6	
Real Assets	0 - 2.5	7	13	11	
Risk Parity	0	0	10	0	
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

# Section 4: Investment Principles

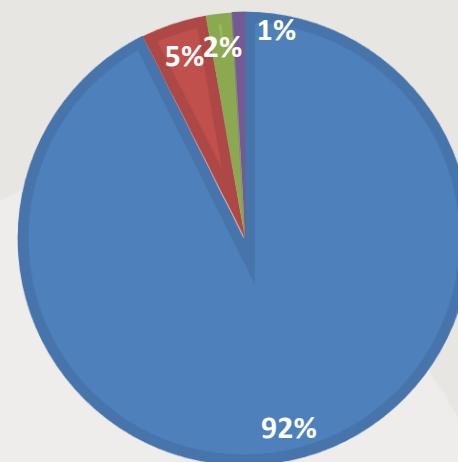
# Asset Allocation Drives the Bulk of Returns

## Academic Support:

- Gary P. Brinson, L. Randolph Hood, and Gilbert L. Beebower, "Determinants of Portfolio Performance". Financial Analysts Journal, July/August 1986
- Gary P. Brinson, Brian D. Singer, and Gilbert L. Beebower, "Determinants of Portfolio Performance II: An Update". Financial Analysts Journal, 47, 3, 1991
- Roger G. Ibbotson and Paul D. Kaplan, "Does Asset Allocation Policy Explain 40%, 90%, or 100% of Performance?" Financial Analysts Journal, January/February 2000

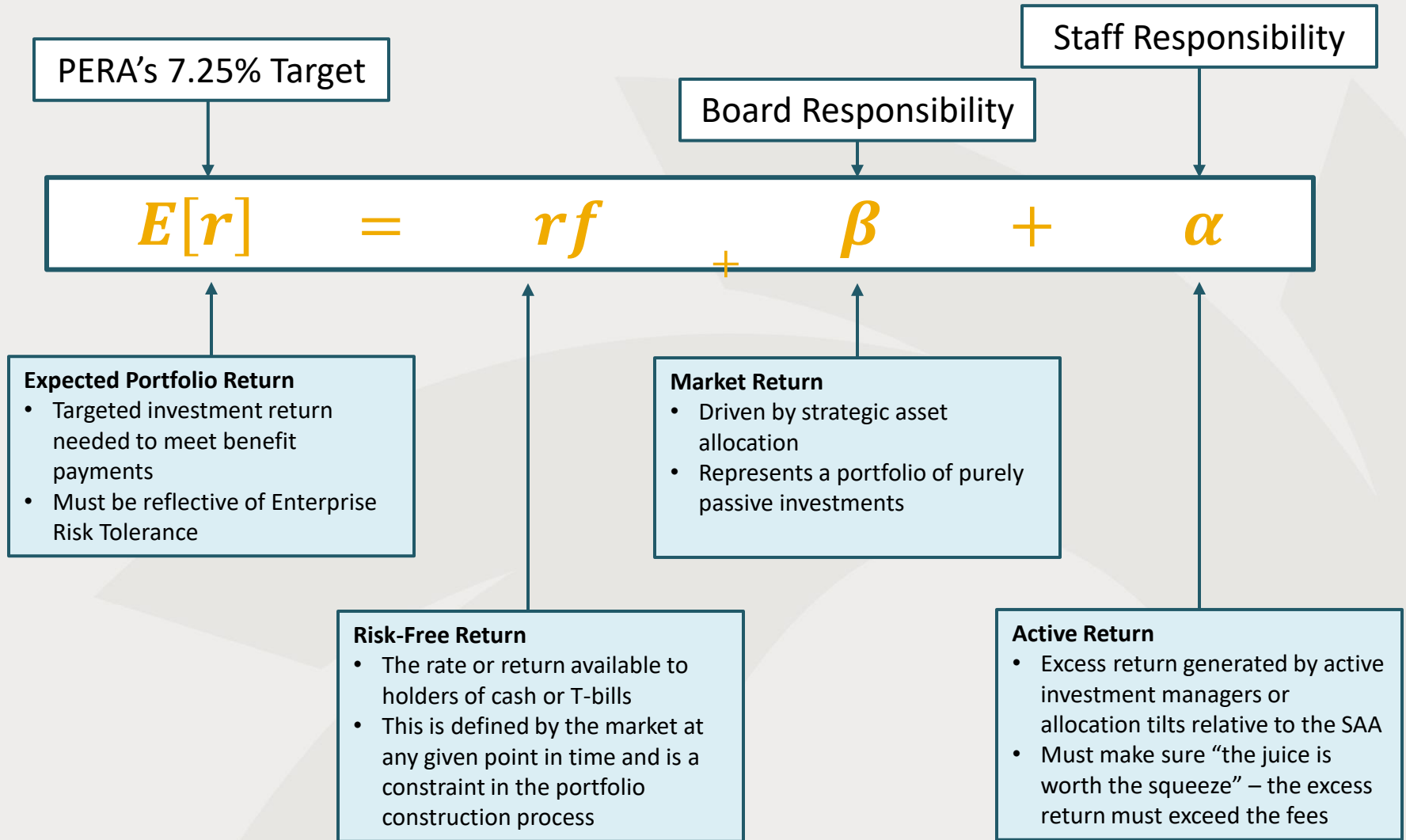
## ASSET ALLOCATION DRIVES PERFORMANCE

- Asset Allocation 92%
- Security Selection 5%
- Market Timing 2%
- Other <1%



Source: Brinson, Singer & Beebower, "Determinants of Portfolio Performance II: An Update"

# Sources of Investment Return



# Rationale for Diversification

	RETURN				DIVERSIFICATION & VOLATILITY		
	Benefit from GDP Growth	Earn Risk Premium	Produce Stable Income	Hedge Against Inflation	Low Absolute Volatility	Low Corr. To Other Assets	Reduce Portfolio Volatility
Public Equities	●	◐	◐	◑	○	◐	◐
Private Equities	●	●	○	○	◐	◑	◑
Fixed Income (Treasury)	○	○	●	◑	●	◑	●
Fixed Income (Credit)	◑	◐	●	◐	◐	◑	◐
Hedge Funds	○	◐	○	○	●	●	●
Real Estate	◐	◑	◐	●	◑	◐	◑

MAGNITUDE	●	◐	◑	◒	○
	High	Med-High	Medium	Low	None



# Returns by Asset Class (Diversification in Action)

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	10 Years
REITs 30.4%	REITs 2.4%	Small Cap 26.6%	EM 37.3%	Cash 1.7%	Large Cap 31.2%	Large Cap 18.3%	REITs 40.5%	Comdty 17.5%	Large Cap 26.2%	Large Cap 11.9%
Large Cap 13.5%	Large Cap 1.3%	Mid Cap 20.5%	Int'l Stocks 25.1%	Bonds 0.1%	REITs 28.9%	EM 17.0%	Comdty 31.1%	Cash 1.4%	Int'l Stocks 18.4%	Mid Cap 9.0%
Mid Cap 9.4%	Bonds 0.5%	Comdty 12.9%	Large Cap 21.7%	TIPS -1.4%	Mid Cap 25.8%	Mid Cap 13.5%	Large Cap 28.8%	EW -11.5%	Mid Cap 16.1%	Small Cap 8.6%
Bonds 6.0%	Cash -0.1%	Large Cap 12.0%	Mid Cap 15.9%	Large Cap -4.6%	Small Cap 22.6%	Small Cap 11.4%	Small Cap 26.8%	TIPS -12.2%	Small Cap 16.1%	REITs 7.4%
Small Cap 5.5%	Int'l Stocks -1.0%	EM 10.9%	Small Cap 13.1%	REITs -6.0%	Int'l Stocks 22.0%	TIPS 10.8%	Mid Cap 24.5%	Bonds -13.0%	REITs 11.8%	EW 5.0%
EW 4.0%	TIPS -1.8%	EW 10.0%	EW 12.6%	EW -7.2%	EM 18.2%	EW 7.8%	EW 16.3%	Mid Cap -13.3%	EW 10.2%	Int'l Stocks 4.2%
TIPS 3.6%	Small Cap -1.8%	REITs 8.6%	REITs 4.9%	Small Cap -8.6%	EW 17.5%	Int'l Stocks 7.6%	Int'l Stocks 11.5%	Int'l Stocks -14.4%	EM 9.0%	TIPS 2.3%
Cash -0.1%	Mid Cap -2.5%	TIPS 4.7%	Bonds 3.6%	Mid Cap -11.3%	Bonds 8.5%	Bonds 7.5%	TIPS 5.7%	Small Cap -16.1%	Bonds 5.7%	EM 1.8%
EM -3.9%	EW -4.7%	Bonds 2.4%	TIPS 2.9%	Comdty -13.1%	TIPS 8.4%	Cash 0.4%	Cash -0.1%	Large Cap -18.2%	Cash 4.9%	Bonds 1.8%
Int'l Stocks -6.2%	EM -16.2%	Int'l Stocks 1.4%	Comdty 0.7%	Int'l Stocks -13.8%	Comdty 7.6%	Comdty -4.1%	Bonds -1.8%	EM -20.6%	TIPS 3.8%	Cash 1.1%
Comdty -18.6%	Comdty -28.2%	Cash 0.1%	Cash 0.7%	EM -15.3%	Cash 2.0%	REITs -4.6%	EM -3.6%	REITs -26.2%	Comdty -9.9%	Comdty -1.9%

Funds: EEM, VNQ, MDY, SPSM, SPY, EFA, TIP, AGG, DJP, BIL

# Section 5: Investment Results

# Relative Fund Performance

## Total Fund Performance vs Policy Benchmark

	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	20 Yrs	30 Yrs	Inception	Inception Date
<b>NM PERA Total Fund</b>	<b>8.66</b>	<b>8.66</b>	<b>3.65</b>	<b>6.35</b>	<b>6.44</b>	<b>5.82</b>	<b>6.17</b>	<b>7.83</b>	<b>8.57</b>	<b>Jun-85</b>
<i>NM PERA Total Fund Policy</i>	<i>11.56</i>	<i>11.56</i>	<i>2.12</i>	<i>5.39</i>	<i>5.59</i>	<i>5.48</i>	<i>6.21</i>	<i>7.42</i>	<i>8.39</i>	
<i>Excess Return</i>	<i>-2.90</i>	<i>-2.90</i>	<i>1.53</i>	<i>0.96</i>	<i>0.85</i>	<i>0.34</i>	<i>-0.04</i>	<i>0.41</i>	<i>0.18</i>	
<i>Scorecard</i>	<i>R</i>	<i>R</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>R</i>	<i>✓</i>	<i>✓</i>	

- Consistent outperformance or excess return over the policy benchmark shows strong manager selection.

## Total Fund Performance vs Assumed Rate of Return (7.25%)

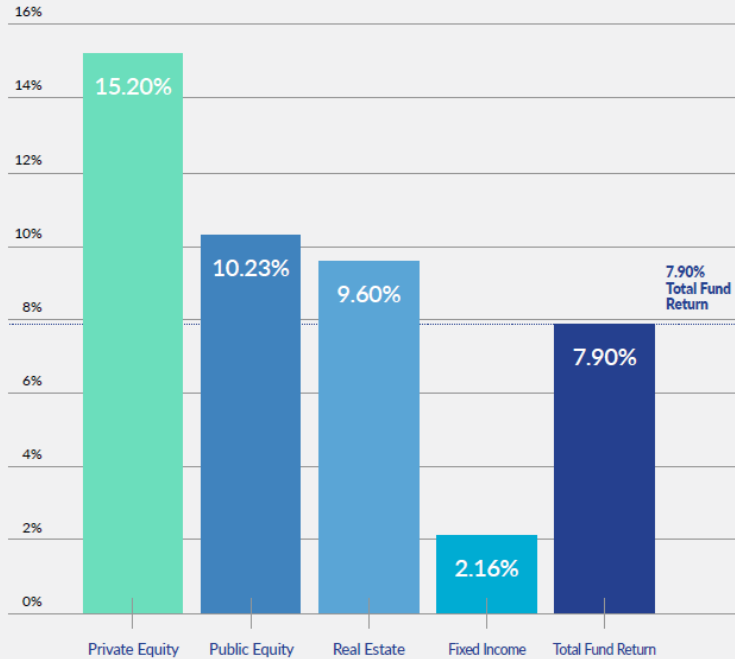
	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	20 Yrs	30 Yrs	Inception	Inception Date
<b>NM PERA Total Fund</b>	<b>8.66</b>	<b>8.66</b>	<b>3.65</b>	<b>6.35</b>	<b>6.44</b>	<b>5.82</b>	<b>6.17</b>	<b>7.83</b>	<b>8.57</b>	<b>Jun-85</b>
<i>Assumed Rate of Return - NMPERA</i>	<i>7.25</i>	<i>7.25</i>	<i>7.25</i>	<i>7.25</i>	<i>7.25</i>	<i>7.35</i>	<i>7.55</i>	<i>7.62</i>	<i>7.65</i>	
<i>Excess Return</i>	<i>1.41</i>	<i>1.41</i>	<i>-3.60</i>	<i>-0.90</i>	<i>-0.81</i>	<i>-1.53</i>	<i>-1.38</i>	<i>0.21</i>	<i>0.92</i>	
<i>Scorecard</i>	<i>✓</i>	<i>✓</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>✓</i>	<i>✓</i>	

- Consistent underperformance versus the target return shows an insufficient asset allocation selection.

# Illiquidity Premium and Manager Selection

## Private equity investments outperform other asset classes

BASED ON 10-YEAR MEDIAN ANNUALIZED RETURNS



## Top 10 public pension funds by private equity returns

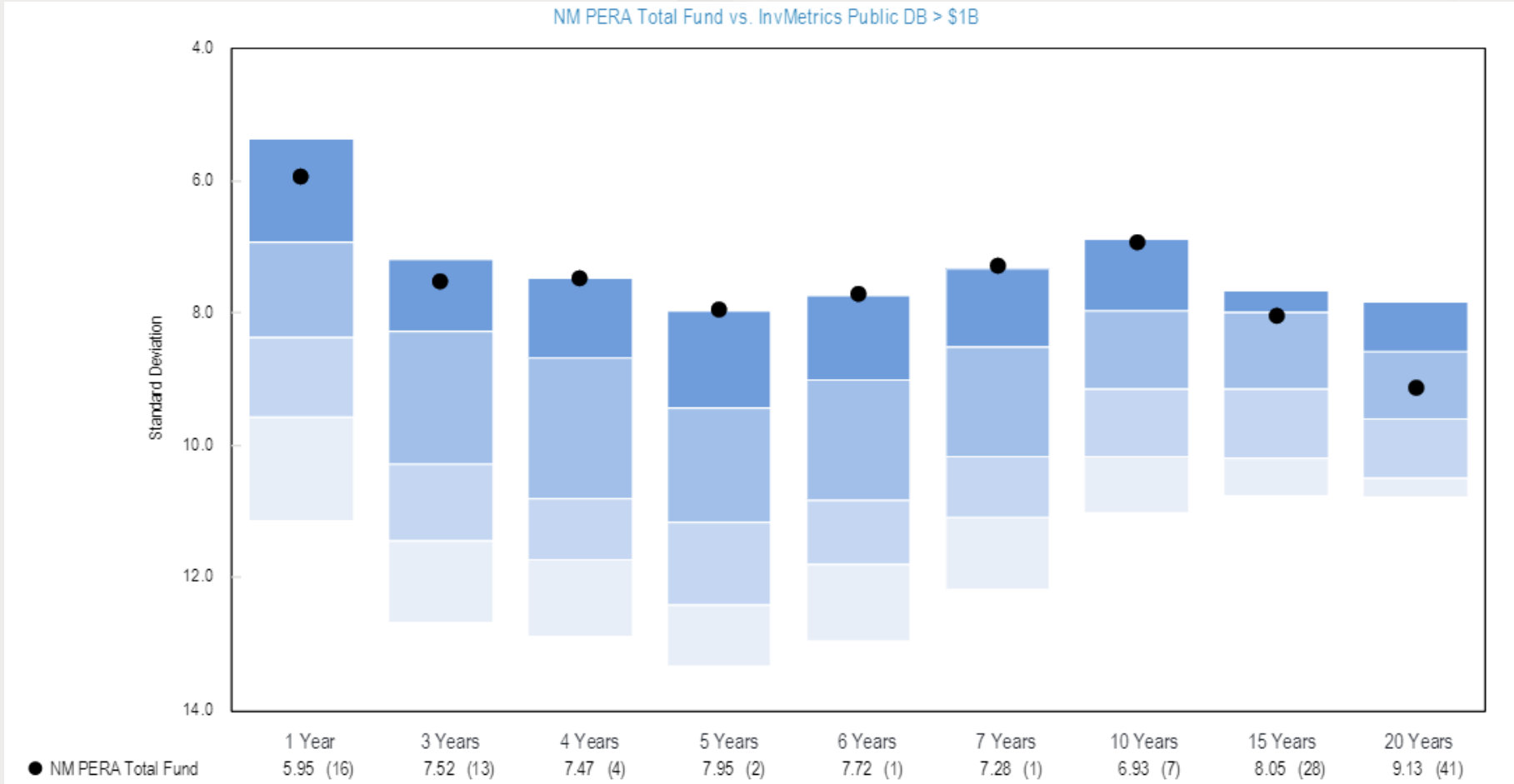
ANNUALIZED 10-YEAR PRIVATE EQUITY RETURNS

	Members	Return
1. Vermont Pension Investment Commission	63,477	20.48%
2. The Illinois State Board of Investment	175,794	18.83%
3. New York City Board of Education Retirement System	61,480	18.81%
4. Massachusetts Pension Reserve Investment Management	300,000	18.61%
5. West Virginia Investment Management Board	145,720	18.60%
6. School Employees Retirement System of Ohio	248,119	18.37%
7. City of Baltimore Employee's Retirement System	17,911	17.60%
8. Iowa Public Employees Retirement System	404,124	17.47%
9. Public Employees' Retirement Association of New Mexico	128,106	17.35%
10. Public Employees' Retirement System of Mississippi	145,985	17.32%

**\*\*\*PERA outperformed 191 other public pensions\*\*\***

Source: American Investment Council - The analysis of pension fund investment returns is based on available 10-year return data as of June 30, 2023.  
[https://www.investmentcouncil.org/wp-content/uploads/2024/07/2024-AIC-Pensions-Report\\_final.pdf](https://www.investmentcouncil.org/wp-content/uploads/2024/07/2024-AIC-Pensions-Report_final.pdf)

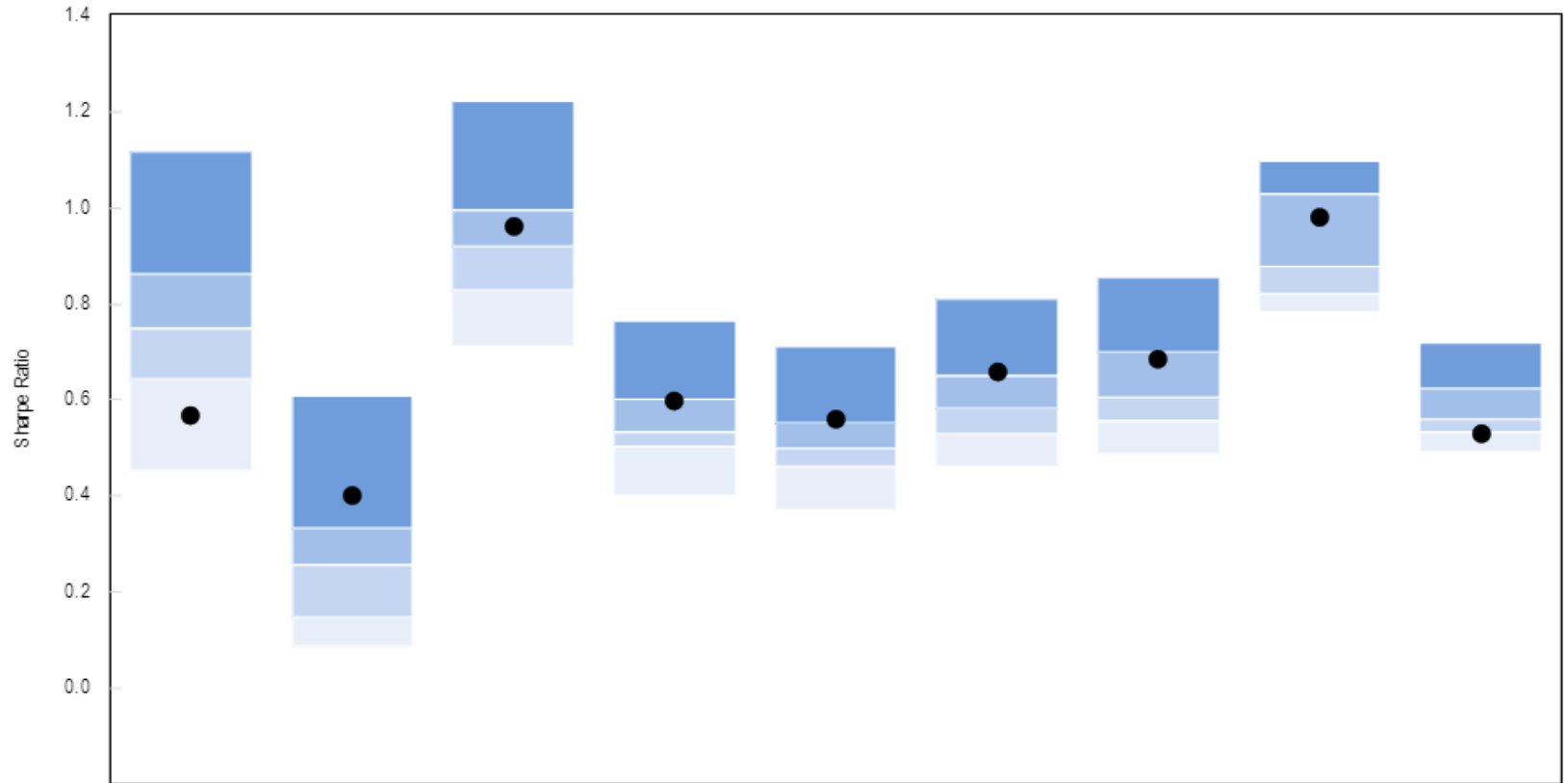
# PERA's Total Fund Risk vs Peers



The lower the standard deviation, the lower the risk.  
As of March 31, 2024. New Asset Allocation in effect April 1, 2024.

# PERA's Sharpe Ratio vs Peers

NM PERA Total Fund vs. InvMetrics Public DB > \$1B



Time Horizon	NM PERA Total Fund Sharpe Ratio	Peer Count
1 Year	0.57	(87)
3 Years	0.40	(15)
4 Years	0.96	(34)
5 Years	0.60	(26)
6 Years	0.56	(25)
7 Years	0.66	(23)
10 Years	0.68	(32)
15 Years	0.98	(33)
20 Years	0.53	(80)

The higher the Sharpe ratio, the more efficient the portfolio.  
As of March 31, 2024. New Asset Allocation in effect April 1, 2024.

# Asset Allocation, Risk, and Liquidity Compliance

## Capital Allocation

	Policy Allocation (%)	Current Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Global Equity	46.00	47.83	1.83	0.00 - 100.00	Yes
Credit	17.00	18.16	1.16	0.00 - 100.00	Yes
Core Fixed Income	13.00	13.83	0.83	0.00 - 100.00	Yes
Real Assets	18.00	15.83	-2.17	0.00 - 100.00	Yes
Absolute Return	6.00	4.35	-1.65	0.00 - 100.00	Yes
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>0.00</b>		

## 4-Year Risk Statistics

	Annualized Standard Deviation	Annualized Alpha	Annualized Beta	R-Squared	Up Capture	Down Capture	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
NM PERA Total Fund	7.5	3.7	0.6	0.9	74.6	54.1	0.2	4.7	0.8	1.3
<i>NM PERA Total Fund Policy</i>	<i>11.6</i>	<i>0.0</i>	<i>1.0</i>	<i>1.0</i>	<i>100.0</i>	<i>100.0</i>	<i>-</i>	<i>0.0</i>	<i>0.5</i>	<i>0.7</i>

PERA's liquidity allocations are in line with liquidity guidelines (Tier 1 Assets >= 10% of Fund NAV)

## Liquidity Allocation

	Market Value	Tier 1 (1-5 Days)	Tier 2 (5-90 Days)	Tier 3 (90-365 Days)	Tier 4 (1+ Years)
Global Equity	8,371,139,352	228,137,414	5,597,012,236	-	2,545,989,702
Credit	3,177,654,904	-	2,578,646,439	-	599,008,465
Core Fixed Income	2,420,682,529	2,414,656,171	-	-	6,026,358
Real Assets	2,769,908,909	-	-	-	2,769,908,909
Absolute Return	762,175,299	-	-	762,175,299	-
<b>NM PERA Total Fund</b>	<b>17,501,560,993</b>	<b>2,642,793,585</b>	<b>8,175,658,675</b>	<b>762,175,299</b>	<b>5,920,933,434</b>
<b>Total (%)</b>	<b>100.0</b>	<b>15.1</b>	<b>46.7</b>	<b>4.4</b>	<b>33.8</b>

These metrics are preliminary, subject to change, as of June 30, 2024.  
New Asset Allocation in effect April 1, 2024.



# Cost Effectiveness

Public Employees Retirement Association							
FY 23 Management Fees							
Asset Class	Management Fees FY2023	NAV <sup>(1)</sup> 6/30/2023	Unfunded 6/30/2023	NAV + Unfunded 6/30/2023	Annual Cost in BPS <sup>(12)</sup>	Carried Interest Profit Sharing	
<b>Global Equity</b>	<b>25,404,299</b>	<b>6,060,284,214</b>	<b>891,986,953</b>	<b>6,952,271,167</b>	<b>37</b>	<b>14,299,251</b>	
Liquid Global Equity <sup>(2)</sup>	3,370,588	3,752,395,004	-	3,752,395,004	9	2,052,982	
Illiquid Global Equity <sup>(3)</sup>	22,033,712	2,307,889,210	891,986,953	3,199,876,163	69	12,246,269	
<b>Risk Reduction &amp; Mitigation</b>	<b>12,337,016</b>	<b>2,862,426,110</b>	<b>-</b>	<b>2,862,426,110</b>	<b>43</b>	<b>11,148,415</b>	
Liquid Risk Reduction & Mitigation <sup>(4)</sup>	1,007,366	2,122,434,958	-	2,122,434,958	5	-	
Illiquid Risk Reduction & Mitigation <sup>(5)</sup>	11,329,650	739,991,152	-	739,991,152	153	11,148,415	
<b>Credit</b>	<b>16,230,707</b>	<b>2,864,001,130</b>	<b>202,956,651</b>	<b>3,066,957,781</b>	<b>53</b>	<b>6,265,900</b>	
Liquid Credit <sup>(6)</sup>	2,927,172	1,470,897,812	-	1,470,897,812	20	-	
Illiquid Credit <sup>(7)</sup>	13,303,535	1,393,103,318	202,956,651	1,596,059,969	83	6,265,900	
<b>Real Assets</b>	<b>31,961,040</b>	<b>3,079,426,106</b>	<b>710,547,088</b>	<b>3,789,973,194</b>	<b>84</b>	<b>30,549,345</b>	
Liquid Real Assets <sup>(8)</sup>	1,751,306	366,556,253	-	366,556,253	48	-	
Illiquid Real Assets <sup>(9)</sup>	30,209,735	2,712,869,853	710,547,088	3,423,416,941	88	30,549,345	
<b>Multi-Risk <sup>(10)</sup></b>	<b>1,634,690</b>	<b>1,382,057,493</b>	<b>-</b>	<b>1,382,057,493</b>	<b>12</b>	<b>-</b>	
<b>Total Fund FY23</b>	<b>87,567,752</b>	<b>16,248,195,053</b>	<b>1,805,490,693</b>	<b>18,053,685,745</b>	<b>49</b>	<b>62,262,911</b>	
<b>Total FY22</b>					<b>50</b>		
<b>Total FY21</b>					<b>45</b>		
<b>Total FY20</b>					<b>45</b>		
<b>Total FY19</b>					<b>44</b>		
<b>Total FY18</b>					<b>46</b>		
<b>Total FY17</b>					<b>39</b>		
<b>Total FY16</b>					<b>36</b>		
<b>Total FY15</b>					<b>42</b>		
<b>Total FY14</b>					<b>47</b>		

**Administration Fees bps <sup>(11)</sup>** **3.6**

## NOTES

- |  |   |
|--|---|
| 1.NAV                                    | Includes: June 30, 2023, inclusive of lagged private market values  |
| 2.Liquid Equity                          | Includes: Global Public Stock, Global Low Vol Equity and Global Equity Synthetic Overlays   |
| 3.Illiquid Equity                        | Includes: Buyout Private Equity, Venture Private Equity, Secondary Private Equity, and Equity Long Short Hedged Funds                           |
| 4.Liquid Risk Mitigation and Reduction   | Includes: Domestic and Global Core Fixed Income, Cash, Suspense, and Risk Reduction Synthetic Overlays  |
| 5.Illiquid Risk Mitigation and Reduction | Includes: Bonds Plus Alpha Engine   |
| 6.Liquid Credit                          | Includes: Global High Yield and Credit Synthetic Overlays   |
| 7.Illiquid Credit                        | Includes: Private Debt, Distressed Debt, Hedged Credit, Leveraged/Structured Credit, and Emerging Market Debt                                   |
| 8.Liquid Real Assets                     | Includes: REITs, MLPs, TIPs, Listed Infrastructure, Commodities and Real Assets Synthetic Overlay   |
| 9.Illiquid Real Assets                   | Includes: Illiquid Real Estate (core, value-add, opportunistic), Illiquid Real Assets (energy, infrastructure, agriculture), and Market Neutral |
| 10.Multi-Risk                            | Includes: Passive Risk Parity   |
| 11.Administrative Expenses               | Includes: Custody Bank Fees, Consultant Fees, Software & Subscriptions, Legal Fees, and Investment Staff Salaries                               |
| 12.Basis Point (bps)                     | Is 1/100 of a percentage  |





# Key Investment Choices

## Passive vs Active

- Passive Management offers market return (beta) for low cost (i.e., low fee index fund)
- Active Management offers the potential for excess return (alpha) over the market or index returns at a higher cost and potential for underperformance (negative alpha)

## Public vs Private

- Publicly traded securities offer liquidity and transparency in pricing, and higher perceived volatility
- Privately traded assets have low liquidity and low transparency in pricing however, they offer higher potential return due to their illiquidity (or illiquidity premium). They also have lower perceived volatility due to their quarterly pricing, but the actual volatility is the same or higher than similarly traded public securities

# Key Investment Terms

- Beta –
  1. Market or benchmark returns
  2. Measure of an asset's volatility in relation to the market or benchmark
- Alpha – Excess return to the benchmark
- Risk – Investment risk is measured in many ways, but the most common is volatility
  - Volatility is a statistical measure of the dispersion of returns for a given asset or index
  - Typically, the higher the volatility, the riskier the security
  - Volatility is often measured using standard deviation
- Liquidity – Refers to how easily assets can be converted into cash
- Benchmark – A standard against which an asset is compared. Investors use benchmarks to measure the performance of assets, usually in the form of a market index
- Sharpe Ratio – Measures risk-adjusted return on an investment or portfolio
  - The Sharpe Ratio indicates how well an investment performs in comparison to the rate of return on a risk-free investment, such as U.S. government treasury bonds
- Tracking Error – The difference in actual performance between an investment portfolio and its corresponding benchmark