

PERS Investment Policy Statement

Approved by the PERS Board on June 16, 2016

Approved by the SIB on July 22, 2016

July 15, 2016

Board Action:

RIO recommends the SIB approve the revised investment policy statement for PERS, including a revised asset allocation in which Equity and Fixed Income are increased by 1% each and Real Assets and Cash are both reduced by 1%.

Dave Hunter, Executive Director/CIO

Darren Schulz, Deputy Chief Investment Officer

ND Retirement & Investment Office (RIO)

State Investment Board (SIB)

Summary of Callan's Asset Liability Study and RIO's Recommended Asset Allocation Targets

- PERS engaged Callan to conduct an asset liability study the preliminary results of which have been previously shared with the PERS Investment Sub-Committee and Board along with PERS and RIO investment staff.
- RIO and Callan are proposing relatively minor revisions to PERS's existing investment policy statement noting the vast majority of the changes are conforming in nature:
 1. Maintaining the actuarial rate of return on assets of 8.00%; and
 2. Adopting the asset class terminology used in Callan's "Asset Liability Study".

As example, Global Equity allocations are segmented into Public and Private, while Global Fixed Income allocations are segmented into Investment Grade and Non-Investment Grade. Infrastructure and Timber allocations are also referenced as "Other" Real Assets by Callan.

- The following pages highlight RIO's recommendation to the PERS Investment Sub-Committee based on the expert guidance and assistance of Callan's asset liability study team including Julia Moriarty, Alex Browning and Paul Erlendson.
- RIO's primary goal in developing this recommendation was to identify an efficient asset allocation framework to support PERS's 8.0% expected return target while minimizing overall portfolio risk as measured by standard deviation.

Comparison of “PERS Current” and “Proposed” Target Asset Allocations including “TFFR’s Current Target”

Asset Class	PERS Current Target	Callan Mix 2A	RIO Proposed Mix 2B	Callan Mix 3	TFFR Current Target
Global Equity	57%	58%	58%	60%	58%
Public	52%	51%	51%	53%	52%
Private	5%	7%	7%	7%	6%
Global Fixed Income	22%	23%	23%	20%	23%
Investment Grade	17%	20%	18%	17%	19%
Non-Investment Grade	5%	3%	5%	3%	4%
Global Real Assets	20%	18%	19%	19%	18%
Real Estate	10%	11%	11%	11%	10%
Infrastructure & Timber	10%	7%	8%	8%	8%
Cash Equivalents	1%	1%	0%	1%	1%
Totals	100%	100%	100%	100%	100%
Expected Return	6.8%	6.9%	7.0%	7.0%	7.1%
Standard Deviation	14.5%	14.5%	14.8%	15.1%	14.7%

- **RIO recommended Mix 2B with Equity at 58%, Fixed Income at 23% and Real Assets at 19% which Callan projects to generate an Expected Return of 7.0% with a Standard Deviation of 14.8%.**
- **Mix 2B represents a modest change and includes a 1% increase to Equity and Fixed Income and a 1% decrease to Real Assets and Cash versus “PERS Current Target”.**
- **Mix 2B is comparable to “TFFR’s Current Target” as both maintain a 58% allocation to Equity, although Mix 2B has a 1% higher target for Real Assets and 1% lower allocation to Cash.**

Callan's Expected Return is for 10-years and is based on lower expected inflation without active management in the public markets.

- While the Fund's expected return over the next 10 years falls short of the 8.0% actuarial return assumption, a few key items should be factored into this study's 6.8% return projection.
 - Callan's public market return projections do not incorporate active management premiums.
 - *Active management premiums accrue when investment firms selected by the State Investment Board outperform their passive benchmarks. It is important to note, though, that investment firms will at times underperform their passive benchmarks. The Plan's returns have benefitted from active management by 52 basis points (annualized) over the past five years. Based on history, 50 basis points would be a reasonable estimate of value-added from active management going forward.*
 - Callan's 10-year projections are below longer-term expectations due to the current economic environment and the forecast for the next several years.
 - *Callan's 10-year return projections are approximately 50 to 200 basis points below longer-term (30+ years) expectations. The difference between near-term and long-term return expectation depends on the asset class.*
 - The actuary assumes 3.50% price inflation versus Callan's 2.25% assumption. Within the context of this study, that means the comparable liability return is closer to 7.5% rather than 8.0%.
 - *The 8.0% return is not reduced by a full 125 basis points since retirees do not receive an automatic COLA (100% CPI) every year.*

Note: "PERS Current Target" asset allocation is estimated to generate an expected return of 6.8% with an expected standard deviation of 14.5%. RIO's recommended asset allocation ("Mix 2B") is estimated to generate a slightly higher expected return (7.0%) with a slightly higher expected standard deviation (14.8%). Both of these estimates are based on Callan's 2016 Capital Market Expectations (including inflation) for the next 10-years while excluding the positive (or negative) impact of active management in the public markets.

Callan's 10-Year Estimated Results Converted to Long-Term Returns plus a Higher Expected Inflation Rate in North Dakota

Asset Class	RIO Proposed Mix 2B
Global Equity	58%
Public	51%
Private	7%
Global Fixed Income	23%
Investment Grade	18%
Non-Investment Grade	5%
Global Real Assets	19%
Real Estate	11%
Infrastructure & Timber	8%
Cash Equivalents	0%
Totals	
Expected Return	7.0%
Standard Deviation	14.8%

Summary of PERS 8.0% Long-Term Return Expectation:

1. Callan's Expected Return is 7.0% for the next 10-years as shown in the table to the left and serves as the starting point.
2. The first adjustment (of 0.5%) is to convert Callan's 10-year Capital Market Expectations to Long-Term Returns (of 30+ years) which represents a 50 basis point increase.
3. The second adjustment (of 0.5%) is for PERS higher 3.50% inflation expectation (for North Dakota) whereas Callan's 2.25% assumption is based on national expectations.
4. PERS Long-Term Return Expectation is 8.0% as shown below.

1.) PERS Expected Return based on Callan's 2016 Capital Market Expectations	7.0%
2.) Adjustment to convert Callan's 10-Year Returns to Long-Term Expectations	0.5%
3.) Adjustment to incorporate PERS higher inflation assumption	0.5%
4.) PERS Long-Term Return Expectation with a higher inflation assumption	8.0%

Note: PERS returns have benefitted from active management by 50 basis points (or 0.50%) annualized during the past 5-years which is not incorporated in the above analysis.

2016 Capital Market Expectations

Return and Risk

- Public market expectations represent passive exposure (beta only).
- Return expectations for private market investments such as real estate and private equity reflect active management premiums.
- Return expectations are net of fees.

Summary of Callan's Long-Term Capital Market Projections (2016 - 2025)

Asset Class	Index	Projected Return*	Projected Risk
Equities			
Broad Domestic Equity	Russell 3000	7.35%	18.70%
Large Cap	S&P 500	7.25%	17.95%
Small/Mid Cap	Russell 2500	7.55%	22.75%
Global ex-US Equity	MSCI ACWI ex USA	7.55%	21.30%
International Equity	MSCI World ex USA	7.25%	20.05%
Emerging Markets Equity	MSCI Emerging Markets	7.60%	27.85%
Fixed Income			
Domestic Fixed	Barclays Aggregate	3.00%	3.75%
TIPS	Barclays TIPS	3.00%	5.30%
High Yield	Barclays High Yield	5.00%	10.50%
Non-US Fixed	Barclays Global Aggregate ex-USD	1.40%	9.20%
Emerging Market Debt	EMBI Global Diversified	4.60%	9.90%
Other			
Real Estate	Callan Real Estate Database	6.00%	16.45%
Timberland	NCREIF Timberland	6.20%	17.50%
Infrastructure	S&P Global Infr / JPM Infr	6.60%	19.00%
Private Equity	TR Post Venture Capital	8.15%	32.80%
Hedge Funds	Callan Hedge FoF Database	5.25%	9.30%
Commodities	Bloomberg Commodity	2.75%	18.50%
Cash Equivalents	90-Day T-Bill	2.25%	0.90%
Inflation	CPI-U	2.25%	1.50%

* Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).