



# NCRS Asset Allocation Overview

October 22, 2015



North Carolina Department of State Treasurer  
*Investment Management*

*Learn. Invest. Grow. Prosper.*

# NCRS Strategic Asset Allocation Background

- NCRS Strategic Asset Allocation was last set in July 2014
  - Asset allocation is the most important investment decision impacting the long-term success and risk of the NCRS
  - Strategic Asset Allocation was developed through an asset liability study with Buck Consulting conducted in late 2013 and early 2014
  - The Strategic Asset Allocation is the core of the NCRS Investment Policy Statement, reflecting the conclusions of the Asset Liability Study
- An Asset Liability Study is essential to setting investment policy
  - Set investment objectives and analyze risks and trade-offs that reflect the mission of the NCRS and other macro considerations
  - Incorporate a holistic view on the “Role in the Portfolio” of asset classes/strategies in light of an economic and financial market outlook and NCRS circumstances
  - Facilitate stress testing and scenario testing



# NCRS Investment Objectives (Excerpts)

- Over the long-term, provide investment returns sufficient:
  - For the NCRS to make timely benefit payments
  - To keep long-term contribution rates at a reasonable level
- Over the intermediate-term, avoid excessive volatility in the contribution rate:
  - It is acceptable to limit the use of return-seeking strategies in order to avoid excessive contribution rate volatility
  - Diversify with respect to economic and financial risk factors that impact assets and liabilities
- Ensure sufficient liquidity to cost-effectively meet the Fund's obligations over all time periods



# 2013-14 NCRS Asset Liability Study

- Baseline focus on 10-, 20-, and 30-year economic and financial environment
  - Initially very low interest rates moderately rising over intermediate term
  - Moderately rising inflation
  - Modest public equity market returns by long-term historical standards for intermediate term
- In this environment, there are some benefits to diversification, but all investment approaches are impacted by low return environment
- Risk Scenarios:
  - U.S. economy has less momentum than expected; emerging market economic issues and delayed European normalization; systemic shock
  - Inflation rises more than expected; global growth surprises on upside; supply shocks
- Overall, fragility due to continued high reliance on global policy makers in face of unprecedented interventions, cyclical headwinds, and structural imbalances



# “Role in the Portfolio” Perspective: Investment Categories

The four Investment Categories in the NCRS Investment Policy Statement:

- Return-Seeking/Growth
  - Global public equity (long-only and hedged equity)
  - Private equity
  - Public/Private non investment grade credit
  - Non-core real estate
- Risk-Reducing/Rates and Liquidity
  - Treasury bonds, mortgage agency bonds, and investment grade credit
  - Cash/short duration
- Inflation Sensitive and Diversifiers
  - Short duration U.S. Treasury Inflation Protected Securities
  - Core real estate (public and private)
  - Public/Private natural resources (commodities, energy, timberland, agriculture, etc.)
- Multi-Strategy



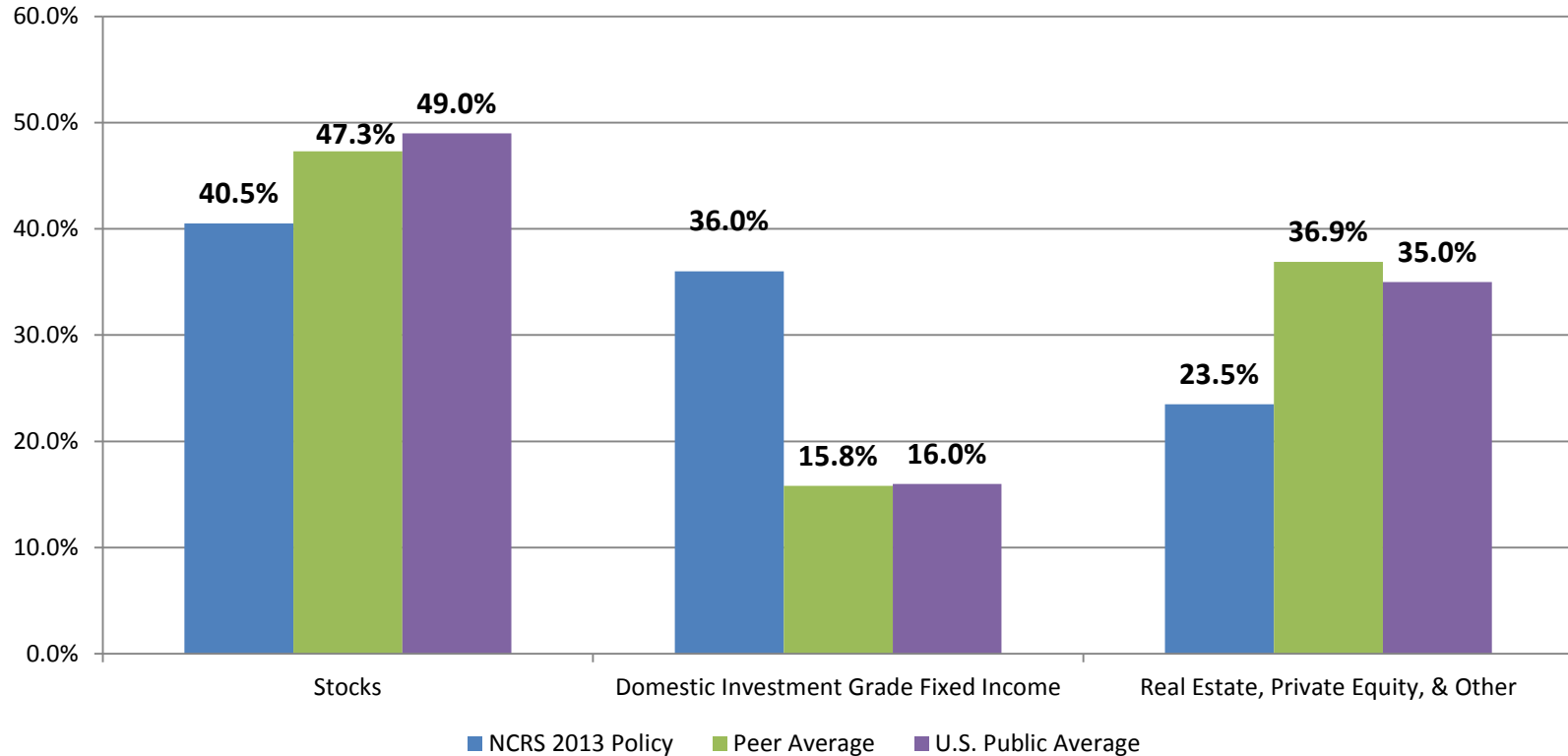
# Liability Risks and Investment Policy

Liability Risks	Implications for Investment Policy
Inflation <ul style="list-style-type: none"><li>• Wage Growth</li><li>• Retiree COLA</li></ul>	Stress test: <ul style="list-style-type: none"><li>• Inflation sensitive assets</li><li>• Stagflation dilemma</li></ul>
Mortality	<ul style="list-style-type: none"><li>• Growth assets</li><li>• Diversifying cash flowing assets</li></ul>
Funding Policy	<ul style="list-style-type: none"><li>• Scenario test: partial funding of ARC</li><li>• Stress test:<ul style="list-style-type: none"><li>• Diversifying assets/strategies</li><li>• Alternative funding policies</li></ul></li></ul>
Plan Design Changes <ul style="list-style-type: none"><li>• Close/Freeze</li><li>• Optional DC or Hybrid</li></ul>	<ul style="list-style-type: none"><li>• Risk-reducing assets</li><li>• Liquidity</li></ul>



# Peer Comparisons **Prior** to 2014 IPS Changes

## Asset Allocation Policy Comparison (CEM: U.S. Public Funds) As of 12/31/2012



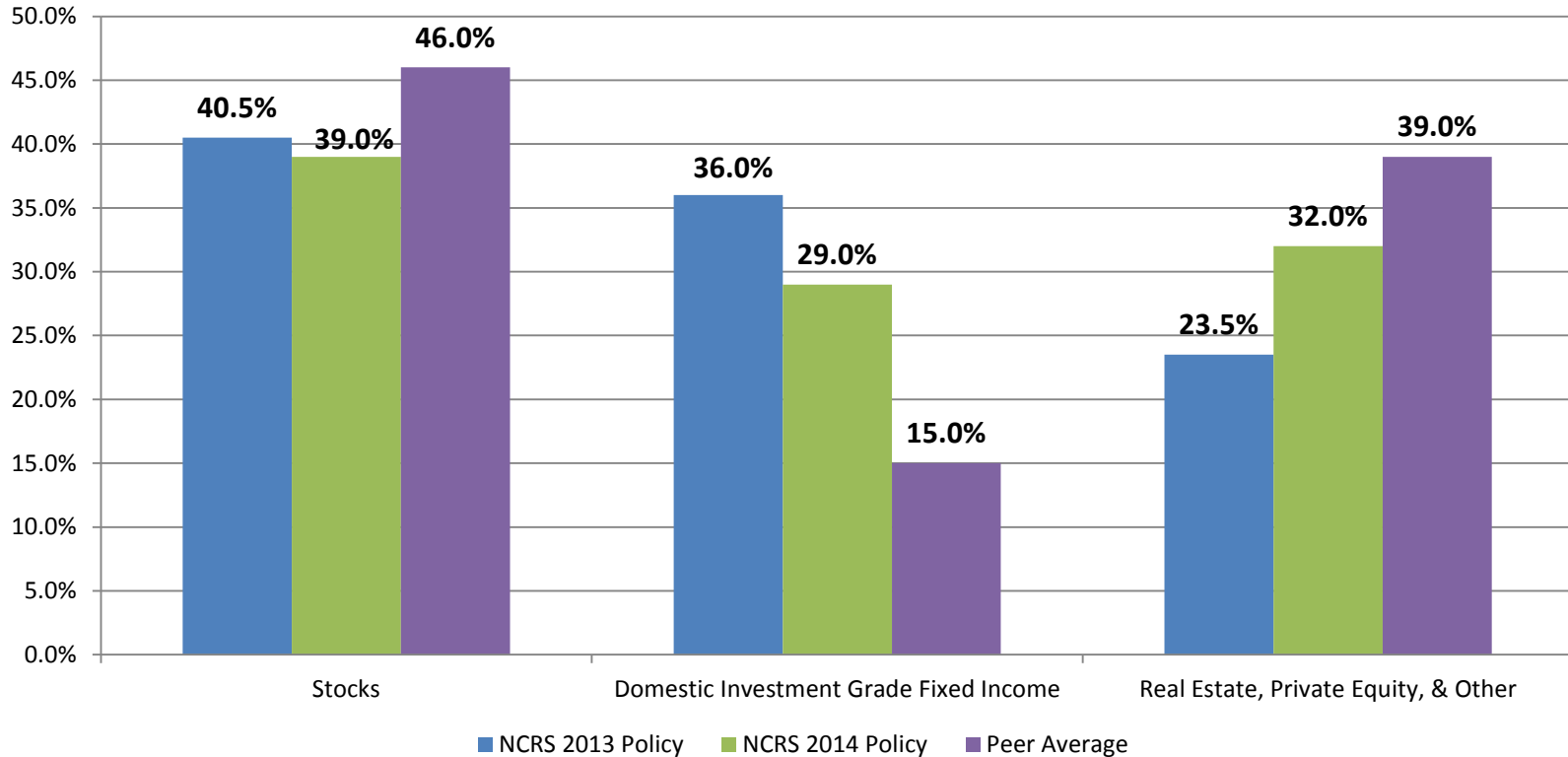
### CEM Peer Group for NCRS:

- 15 U.S. public sponsors
- Fund sizes range from \$42 billion to \$158 billion
- Median size of \$74 billion



# Peer Comparisons **After** 2014 IPS Changes

## Asset Allocation Policy Comparison (CEM: U.S. Public Funds) As of 12/31/2014



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# Ongoing Capital Allocation Exercise

- Bottom-up: Review of individual asset classes
  - Market environment, including valuation, intermediate-term drivers of risks and returns, and identification of attractive/unattractive subsectors
  - Current pipeline vs. potential capacity, timelines, resources, etc. to effect prudent and efficient investments
  - Types of investment vehicles available to achieve/reduce exposure
- Top-Down: Review across asset classes
  - General economic and monetary policy outlook
  - Assess relative attractiveness/unattractiveness of overweights/underweights over intermediate-term
  - Assess potential trade-offs across broad categories e.g., Rates and Liquidity vs. Inflation Sensitive and Diversifiers vs. Multi-Strategy
  - Assess potential trade-offs within broad categories e.g., Public Equity vs. Private Equity vs. Non-Core Real Estate vs. Opportunistic Fixed Income
- Investment Committee Process
  - Discussed “Street” and manager research on market environment
  - Director presentations on individual asset classes
  - Discussion of total fund positioning and need for capacity and balancing various risks and opportunities relative to new Strategic Asset Allocation

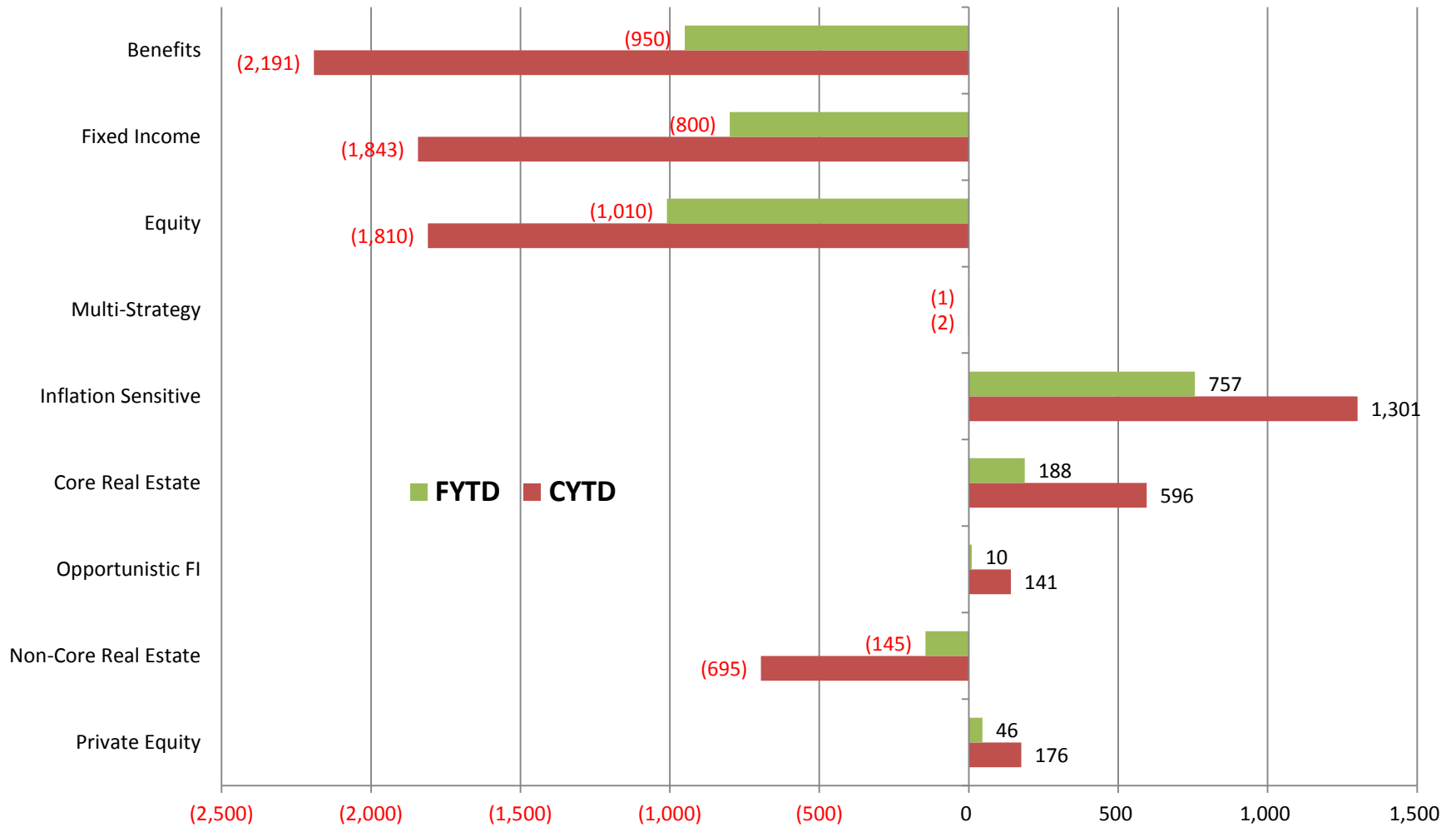


# 2014 Top-Down Capital Allocation Approach

- Economic and Macro Views
  - Modest economic growth brings improved U.S. labor and housing markets and supports late-cycle profit growth albeit with narrowing corporate margins
  - Inflationary pressures remain muted into 2015 and gradual Federal Reserve rate increases occur in 2015, but yield curve steepening will lead Fed policy
  - Public equity valuations span neutral to modestly stretched, with U.S. markets subject to more volatility due to higher valuations and Fed policy changes
- Recommended trade-offs **across** broad categories
  - Maintaining a 1.2% overweight to Growth is acceptable
  - Reducing a 3.2% overweight to Rates and Liquidity should be a priority along with reducing the 4.0% underweight to Inflation Sensitive and Diversifiers
- Recommended trade-offs **within** broad categories
  - Prioritize reducing underweight to Opportunistic Fixed Income vs. reducing overweight to Non-Core Real Estate vs. reducing underweight to Private Equity
  - Prioritize reducing underweight to Inflation Sensitive vs. reducing underweight to Core Real Estate



# NCRS Net Cash Flows through 10/8/15



Note: October 8 figures are unaudited numbers based on currently available information.



# 2014 Asset Allocation Study: Projected Returns

## Projected Ranges of Annualized Compound Passive Investment Returns

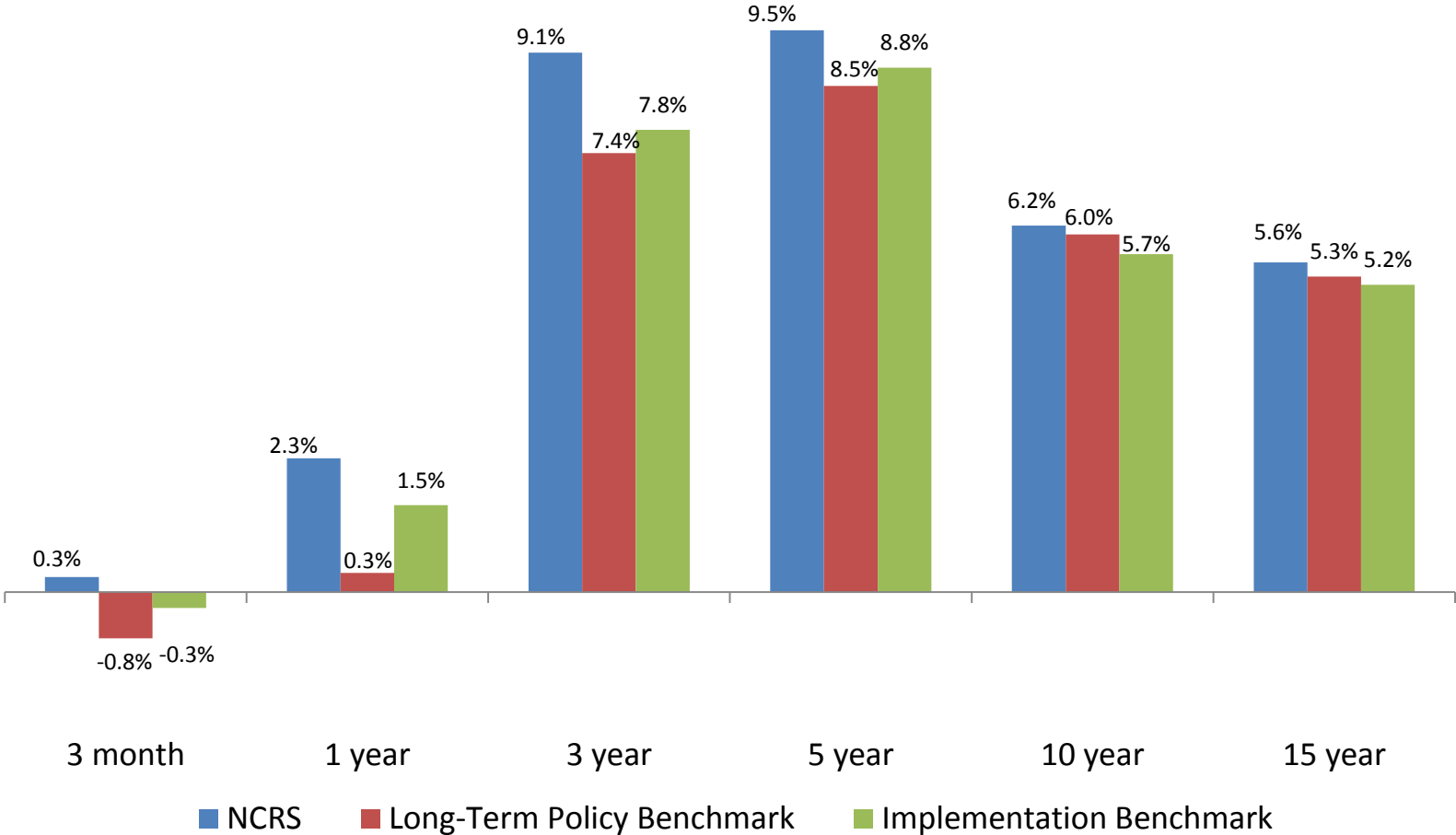
Horizon	5 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	Expected (Average)	75 <sup>th</sup> Percentile	95 <sup>th</sup> Percentile
10 Years	0.0%	3.6%	6.1%	8.3%	11.9%
20 Years	2.6%	5.4%	7.3%	9.1%	11.7%
30 Years	3.8%	6.2%	7.8%	9.3%	11.8%

Source: North Carolina Department of State Treasurer and Buck Consulting



# NCRS Total Net Portfolio Return vs. Benchmarks

As of June 30, 2015



Note: End of fiscal year figures are based on information then available and are subject to audit and finalization.



NCRS Gross of Fees Return and Risk  
 BNY Mellon Universe: Public Funds > \$1B  
 As of June 30, 2015

<u>Returns</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>15 Year</u>
25th percentile	11.61	11.48	7.12	6.20
<b>Median</b>	<b>10.50</b>	<b>10.80</b>	<b>6.88</b>	<b>5.90</b>
75th percentile	9.45	9.95	6.30	5.45
<b>NCRS</b>	<b>9.67</b>	<b>10.00</b>	<b>6.60</b>	<b>5.85</b>
Percentile Rank	69	75	67	55
<u>Risk</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>15 Year</u>
25th percentile	5.77	8.13	10.28	10.04
<b>Median</b>	<b>5.12</b>	<b>7.42</b>	<b>9.67</b>	<b>9.53</b>
75th percentile	4.56	6.73	8.94	8.68
<b>NCRS</b>	<b>4.45</b>	<b>6.26</b>	<b>8.07</b>	<b>8.06</b>
Percentile Rank	80	85	90	91

Note: End of fiscal year figures are based on information then available and are subject to audit and finalization.



# Appendix: Additional Exhibits (on following pages)

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# Sample Financial Metrics

- Primary: Employer/Employee contribution cost of pension obligations
  - Inflation-adjusted long-term cost
  - Uncertainty of contribution rates
  - Generational cost incidence
- Primary: Funded ratio
- Secondary: Economic/financial risk metrics
  - Absolute return and risk
  - Sensitivity to global stock market
  - Sensitivity to interest rates
  - Sensitivity to inflation
  - Investment costs
  - Peer asset allocations





# Other Potential Risk Sensitivities

- Funding ratio declining below [\_\_\_\_] for intermediate periods of time?
- Performance lags the actuarial return assumption for intermediate-term?
- Negative short-term performance?
- Lagging peers' performance?
- Individual asset classes or strategies providing weak intermediate-term returns?
- Increasing fees and complexity of investment program?
- Less transparency of investment program?
- Missing high risk-adjusted return opportunities when markets dislocate?



# 2014-15 vs. 2013 Strategic Asset Allocations

	2013 Strategy	2014-15 Strategy	Change
<b>Rates and Liquidity</b>	<b>36.0%</b>	<b>29%</b>	<b>-7.0%</b>
<i>Investment Grade Fixed Income</i>	36.0%	28%	-8.0%
<i>Cash</i>	0%	1%	+1.0%
<b>Growth</b>	<b>55.8%</b>	<b>58%</b>	<b>+2.2%</b>
<i>Global Public Equity</i>	40.5%	42%	+1.5%
<i>Private Equity</i>	6.5%	6%	-0.5%
<i>Non-Core Real Estate</i>	4.3%	3%	-1.3%
<i>Opportunistic Fixed Income</i>	4.5%	7%	+3.5%
<b>Inflation Sensitive and Diversifiers</b>	<b>8.2%</b>	<b>11%</b>	<b>+2.8%</b>
<i>Inflation Sensitive</i>	4.5%	6%	+1.5%
<i>Core Real Estate</i>	3.7%	5%	+1.3%
<b>Multi-Strategy</b>	<b>0.0%</b>	<b>2%</b>	<b>+2%</b>



# Statutory Compliance as of October 8, 2015

Statutory Citation	Minimum or Maximum	Current %	Compliant?
NCGS §§ 147-69.1(c) and 147-69.2(b)(1)-(6b) for fixed income and cash	At least 20%	30.2%	Y
NCGS § 147-69.2(b)(8) for public equity	No more than 65%	42.3%	Y
NCGS § 147-69.2(b)(8)(b.) for public equity limited liability investment vehicles	No more than 8.5%	2.2%	Y
NCGS § 147-69.2(b)(6c) for other fixed income	No more than 7.5%	6.1%	Y
NCGS § 147-69.2(b)(7) for real estate	No more than 10%	8.6%	Y
NCGS § 147-69.2(b)(9) for private equity and other alternatives	No more than 8.75%	6.8%	Y
NCGS § 147-69.2(b)(9a) for inflation protection	No more than 7.5%	6.1%	Y
NCGS § 147-69.2(b)(10a) for the 35% aggregate portfolio limit	The sum of rows 3 to 7; No more than 35%	29.8%	Y

Note: October 8 figures are unaudited numbers based on currently available information.



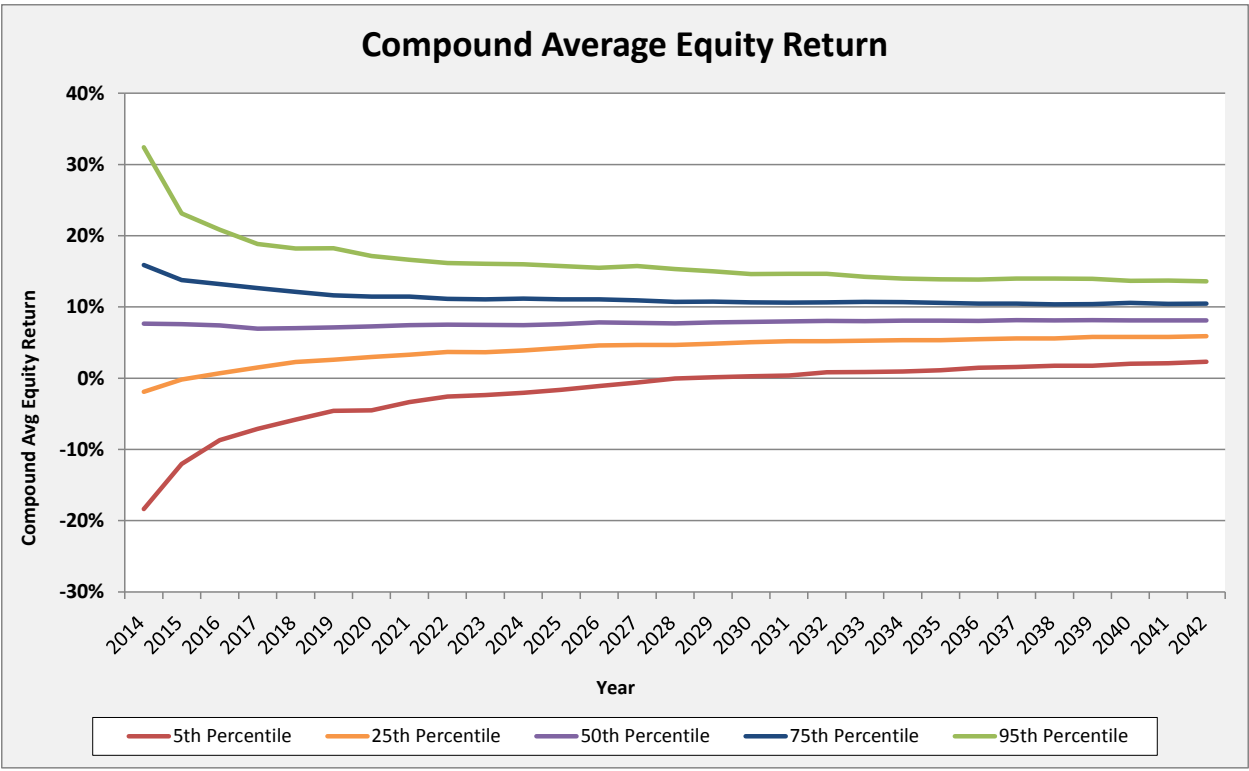
# Performance Metrics Summary

	Strategic	Actual	Sample A	Sample B	Sample C	Sample D
Expected Return - 10 yr	6.0%	6.1%	6.0%	6.1%	6.0%	6.7%
Expected Volatility - 10 yr	10.5%	10.8%	10.5%	10.5%	10.0%	12.0%
Expected Return - 20 yr	7.2%	7.3%	7.1%	7.3%	7.2%	7.8%
Expected Volatility - 20 yr	10.7%	11.0%	10.7%	10.7%	10.2%	12.2%
Expected Return - 30 yr	7.8%	7.8%	7.6%	7.8%	7.7%	8.2%
Expected Volatility - 30 yr	10.8%	11.1%	10.8%	10.8%	10.3%	12.3%
Equity Beta	0.578	0.607	0.601	0.593	0.557	0.681
Inflation Beta	0.194	0.170	0.314	0.266	0.230	0.309
Interest Rate Beta	0.347	0.303	0.173	0.238	0.277	0.226
Average PV of Contributions at time 30	41.2	40.7	42.0	41.1	41.5	38.1
CTE 25th Percentile at time 30	72.4	72.6	74.3	73.0	72.1	72.9
Frequency of Contribution Rate Increase > 3%	0.054	0.056	0.057	0.055	0.051	0.057
Probability Rolling 3 year CAGR < 0.00%	0.110	0.115	0.115	0.112	0.104	0.125
Probability 30 year CAGR ≥ 7.25%	0.594	0.599	0.566	0.601	0.582	0.654
AVA Funded Ratio 50th Percentile at time 30	110.2%	110.5%	107.6%	109.8%	108.9%	120.2%
AVA Funded Ratio 5th Percentile at time 5	72.7%	72.7%	72.8%	72.5%	73.6%	70.3%

Source: Department of State Treasurer and Buck Consulting; as of 12-16-2013



# Key Assumptions – Compound Average Equity Returns



Portfolio Geometric Average Return															
	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042
95th percentile	32.4%	20.8%	18.2%	17.1%	16.2%	16.0%	15.5%	15.3%	14.6%	14.7%	14.0%	13.8%	14.0%	13.7%	13.6%
75th percentile	15.9%	13.2%	12.1%	11.4%	11.1%	11.2%	11.1%	10.7%	10.6%	10.6%	10.7%	10.5%	10.4%	10.6%	10.5%
50th percentile	7.6%	7.4%	7.0%	7.3%	7.5%	7.4%	7.8%	7.7%	7.9%	8.1%	8.1%	8.0%	8.1%	8.1%	8.1%
25th percentile	-1.9%	0.7%	2.3%	3.0%	3.7%	3.9%	4.6%	4.7%	5.1%	5.2%	5.3%	5.5%	5.6%	5.8%	5.9%
5th percentile	-18.4%	-8.7%	-5.8%	-4.5%	-2.6%	-2.1%	-1.1%	0.0%	0.3%	0.8%	0.9%	1.5%	1.7%	2.0%	2.3%

Source: Department of State Treasurer and Buck Consulting; as of 12-16-2013

# Capital Market Assumptions – Returns and Risk

Asset Class	10 year		20 year		30 year	
	Expected Return	Standard Deviation	Expected Return	Standard Deviation	Expected Return	Standard Deviation
US Large Cap	7.30%	17.64%	8.65%	18.01%	9.23%	18.23%
US Mid Cap	9.50%	18.50%	10.89%	18.87%	11.49%	19.10%
US Small Cap	9.57%	18.94%	10.96%	19.29%	11.58%	19.52%
MSCI EAFE	9.03%	17.14%	9.22%	17.23%	9.16%	17.26%
MSCI Emerging Markets	9.98%	20.64%	10.57%	20.71%	10.89%	20.81%
Global Equity	8.40%	16.68%	9.16%	16.88%	9.44%	17.00%
Hedged Equity	5.85%	6.87%	6.16%	6.96%	6.28%	7.00%
Private Equity	11.35%	29.05%	13.60%	29.62%	14.58%	29.99%
Non IG Credit	6.56%	14.52%	8.93%	14.93%	10.20%	15.00%
Non-Core Real Estate	7.99%	22.41%	9.40%	22.80%	10.00%	23.00%
Government – Shorter Duration FI	2.74%	3.26%	4.10%	3.73%	4.83%	3.90%
Government – Long Term	3.19%	7.84%	4.69%	8.37%	5.49%	8.57%
Mortgage Backed Securities	2.82%	5.28%	4.39%	5.88%	5.16%	5.90%
IG Credit – Shorter Duration FI	3.58%	3.15%	4.95%	3.63%	5.68%	3.79%
IG Credit – Long Term	4.09%	8.04%	5.73%	8.40%	6.58%	8.52%
Cash	1.97%	1.90%	3.04%	2.41%	3.63%	2.58%
Short-Term TIPS	1.79%	2.34%	3.00%	2.77%	3.65%	2.90%
Publicly Traded Commodities	4.44%	27.80%	4.58%	27.78%	4.64%	27.58%
Private Natural Resources (incl Timber)	9.28%	20.17%	9.39%	20.15%	9.43%	20.00%
Core Real Estate	5.15%	14.41%	6.78%	14.76%	7.76%	15.00%
REITS	5.78%	19.51%	7.01%	19.85%	7.53%	20.03%
Multi-Strategy	6.48%	13.57%	8.59%	13.85%	9.65%	14.00%
Inflation	2.78%	2.94%	3.05%	3.03%	3.19%	2.99%

Source: Department of State Treasurer and Buck Consulting; as of 12-16-2013



# Key Assumptions – Treasury Key Rates

Forecast Year	Average Key Treasury Rates											Average Return During the Year			
	Key Rate	0.25	1.00	2.00	3.00	5.00	7.00	10.00	15.00	20.00	25.00	30.00	Treasury 1-5 year	Treasury 5-10 year	Treasury 10+ year
0		0.06%	0.10%	0.31%	0.58%	1.41%	2.10%	2.72%	3.26%	3.50%	3.72%	3.81%			
1		0.09%	0.52%	0.99%	1.37%	2.00%	2.49%	3.05%	3.64%	3.97%	4.14%	4.19%	0.63%	1.18%	2.08%
2		0.68%	1.11%	1.56%	1.93%	2.52%	2.98%	3.50%	4.05%	4.35%	4.48%	4.51%	0.97%	0.91%	1.20%
3		1.19%	1.61%	2.05%	2.40%	2.97%	3.40%	3.89%	4.40%	4.67%	4.78%	4.79%	1.67%	1.76%	2.08%
4		1.68%	2.07%	2.49%	2.82%	3.35%	3.76%	4.22%	4.70%	4.94%	5.03%	5.02%	2.24%	2.48%	2.86%
5		2.00%	2.40%	2.80%	3.13%	3.64%	4.03%	4.47%	4.92%	5.14%	5.21%	5.18%	2.86%	3.31%	3.80%
6		2.43%	2.80%	3.18%	3.49%	3.98%	4.35%	4.76%	5.18%	5.37%	5.43%	5.39%	3.03%	3.29%	3.53%
7		2.72%	3.09%	3.47%	3.77%	4.24%	4.60%	4.99%	5.39%	5.57%	5.61%	5.56%	3.56%	3.96%	4.22%
8		2.96%	3.33%	3.70%	3.99%	4.45%	4.80%	5.18%	5.55%	5.72%	5.75%	5.68%	3.94%	4.48%	4.83%
9		3.27%	3.62%	3.98%	4.27%	4.71%	5.04%	5.41%	5.77%	5.92%	5.93%	5.86%	4.07%	4.38%	4.36%
10		3.54%	3.87%	4.21%	4.48%	4.90%	5.22%	5.57%	5.92%	6.05%	6.06%	5.97%	4.45%	4.98%	5.16%
11		3.71%	4.04%	4.38%	4.65%	5.07%	5.38%	5.73%	6.06%	6.18%	6.18%	6.09%	4.74%	5.27%	5.41%
12		3.85%	4.19%	4.53%	4.80%	5.21%	5.52%	5.85%	6.17%	6.29%	6.28%	6.18%	4.97%	5.61%	5.90%
13		4.01%	4.33%	4.66%	4.91%	5.31%	5.61%	5.94%	6.24%	6.36%	6.34%	6.23%	5.18%	5.95%	6.41%
14		4.16%	4.48%	4.80%	5.06%	5.45%	5.74%	6.06%	6.36%	6.46%	6.44%	6.33%	5.23%	5.79%	5.85%
15		4.28%	4.60%	4.92%	5.17%	5.55%	5.84%	6.15%	6.44%	6.54%	6.51%	6.39%	5.45%	6.12%	6.33%
16		4.37%	4.70%	5.02%	5.28%	5.66%	5.95%	6.26%	6.55%	6.64%	6.60%	6.48%	5.55%	6.12%	6.04%
17		4.52%	4.84%	5.16%	5.41%	5.79%	6.07%	6.37%	6.65%	6.74%	6.69%	6.57%	5.64%	6.20%	6.13%
18		4.53%	4.86%	5.18%	5.43%	5.80%	6.08%	6.38%	6.66%	6.74%	6.70%	6.57%	6.00%	6.90%	7.37%
19		4.64%	4.95%	5.25%	5.49%	5.86%	6.14%	6.43%	6.70%	6.77%	6.73%	6.60%	5.89%	6.65%	6.86%
20		4.67%	4.99%	5.30%	5.54%	5.91%	6.19%	6.48%	6.75%	6.82%	6.77%	6.64%	5.98%	6.70%	6.73%
21		4.79%	5.10%	5.40%	5.64%	6.00%	6.27%	6.56%	6.82%	6.89%	6.84%	6.71%	5.97%	6.62%	6.54%
22		4.82%	5.13%	5.43%	5.67%	6.03%	6.30%	6.59%	6.84%	6.91%	6.86%	6.72%	6.18%	7.00%	7.29%
23		4.90%	5.19%	5.49%	5.72%	6.08%	6.34%	6.63%	6.88%	6.95%	6.89%	6.75%	6.16%	6.94%	7.08%
24		4.91%	5.21%	5.51%	5.74%	6.10%	6.36%	6.64%	6.90%	6.96%	6.90%	6.76%	6.30%	7.14%	7.40%
25		4.96%	5.27%	5.56%	5.80%	6.15%	6.42%	6.70%	6.94%	7.01%	6.95%	6.80%	6.25%	6.95%	7.03%
26		4.99%	5.29%	5.59%	5.82%	6.18%	6.44%	6.72%	6.96%	7.02%	6.96%	6.82%	6.35%	7.16%	7.29%
27		4.98%	5.28%	5.58%	5.82%	6.18%	6.44%	6.72%	6.97%	7.03%	6.97%	6.82%	6.43%	7.32%	7.54%
28		4.98%	5.30%	5.61%	5.85%	6.21%	6.47%	6.75%	7.00%	7.06%	6.99%	6.85%	6.37%	7.12%	7.13%
29		5.04%	5.35%	5.65%	5.88%	6.24%	6.50%	6.78%	7.02%	7.08%	7.01%	6.87%	6.39%	7.19%	7.37%
30		5.10%	5.41%	5.71%	5.95%	6.30%	6.56%	6.84%	7.08%	7.14%	7.07%	6.92%	6.37%	7.02%	6.94%

Source: Department of State Treasurer and Buck Consulting; as of 12-16-2013



# NCRS Asset Allocation as of 10/8/15

	Market Value (\$MM)	Actual	Target	Range		Relative %	Relative \$ (MM)
				Minimum	Maximum		
<b>Growth</b>	<b>\$50,324</b>	<b>57.44%</b>	<b>58.0%</b>	<b>37.0%</b>	<b>71.0%</b>	<b>-0.56%</b>	<b>(\$488)</b>
Public Equity	37,031	42.27%	42.0%	37.0%	47.0%	0.27%	236
Non Core Real Estate	3,623	4.14%	3.0%	0.0%	8.0%	1.14%	995
Opportunistic Fixed Income	5,322	6.08%	7.0%	0.0%	7.5%	-0.92%	(\$810)
Private Equity	4,347	4.96%	6.0%	0.0%	8.75%	-1.04%	(\$909)
<b>Inflation Sensitive &amp; Diversifiers</b>	<b>9,261</b>	<b>10.57%</b>	<b>11.0%</b>	<b>4.0%</b>	<b>16.0%</b>	<b>-0.43%</b>	<b>(\$376)</b>
Core Real Estate	3,883	4.43%	5.0%	2.0%	10.0%	-0.57%	(\$497)
Inflation Sensitive	5,378	6.14%	6.0%	2.0%	7.5%	0.14%	121
<b>Multi-Strategy</b>	<b>1,593</b>	<b>1.82%</b>	<b>2.0%</b>	<b>0.0%</b>	<b>4.0%</b>	<b>-0.18%</b>	<b>(\$159)</b>
<b>Rates &amp; Liquidity</b>	<b>26,429</b>	<b>30.17%</b>	<b>29.0%</b>	<b>24.0%</b>	<b>42.0%</b>	<b>1.17%</b>	<b>1,023</b>
Cash	1,077	1.23%	1.0%	0.0%	10.0%	0.23%	201
Investment Grade Fixed Income	25,351	28.94%	28.0%	24.0%	32.0%	0.94%	822
<b>Grand Total</b>	<b>\$87,607</b>	<b>100.00%</b>					

Note: October 8 figures are unaudited numbers based on currently available information.





**DEPARTMENT OF STATE TREASURER  
INVESTMENT MANAGEMENT DIVISION**

**INVESTMENT POLICY STATEMENT  
FOR NORTH CAROLINA RETIREMENT SYSTEMS**

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DST Reference:	IMD-POL-1000-ALL
Title:	Investment Policy Statement for North Carolina Retirement Systems
Current Effective Date:	July 1, 2014
Version/Revision:	2.0
Revision History:	Second version
Original Effective Date:	November 26, 2012

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## **PROVISIONS FOR THE OVERALL PENSION FUND INVESTMENT PROGRAM**

### **I. INTRODUCTION AND PURPOSE**

#### **A. Program Overview**

Pursuant to North Carolina General Statute (“NCGS”) §147-69.2(b)(8), the North Carolina Retirement Systems include the Teachers’ and State Employees’ Retirement System, the Consolidated Judicial Retirement System, the Firemen’s and Rescue Workers’ Pension Fund, the Local Governmental Employees’ Retirement System, the Legislative Retirement System, the North Carolina National Guard Pension Fund and the Retiree Health Benefit Fund (collectively, the “Retirement Systems” or the “NCRS”). The Treasurer of the State of North Carolina (“Treasurer”) maintains the investment program for assets of the Retirement Systems (the “Fund” or “Pension Fund Program”). The Investment Management Division (the “IMD”) of the North Carolina Department of State Treasurer (the “DST”) serves as the investment arm of the Treasurer. Under the direction of the Treasurer, IMD manages the Fund and ancillary programs.

#### **B. Purpose of This Policy**

The Treasurer sets forth this Statement of Investment Policy (the “Policy” or the “Investment Policy”), which states the long-term objectives and guidelines for the IMD with respect to investing the Fund. The Policy’s purpose is to capture strategic considerations for the total Fund and individual asset classes. The IMD staff shall recommend revisions to this Policy to the Treasurer on an as needed basis, and will review the Policy no less frequently than annually.

#### **C. Related Laws and Policies**

Article 5, Section 6.(2) of the North Carolina Constitution reflects the establishment of the pension funds. NCGS §147-69.2 prescribes eligible investments for the Fund and sets maximum percentages certain types of investments can comprise of total invested assets of the Fund. NCGS §147-69.3 contains certain provisions regarding administration of the investment programs of the Treasurer, including the Pension Fund Program.

The Treasurer is the sole statutory fiduciary with respect to investment of the Fund, and the Treasurer is obligated to discharge his or her duties solely in the interest of the participants and beneficiaries of the Retirement Systems and in accordance with NCGS §147-69.7. The Treasurer has adopted a Signatory Authority Policy (as amended from time to time, the “Signatory Authority Policy”) that sets forth the authorizations for IMD staff to act on behalf of the State Treasurer with regard to investment-related matters. The Signatory Authority Policy defines what authority the Treasurer has delegated and what authority the Treasurer has retained. Notwithstanding anything in this Policy to the contrary, any action by IMD staff under this Policy shall be subject to compliance with the Signatory Authority Policy, including execution of documents by the Treasurer and/or such person designated under the Signatory Authority Policy.

This Policy and the Signatory Authority Policy, taken together, are intended to cover all general matters concerning investment of the Fund. This Policy replaces all the prior general investment policy statements for NCRS investments. Additional policies, procedures, or desktop guides document certain

matters which are highly specialized or routine in nature.<sup>1</sup> If a conflict appears to exist between this Policy and any other policy, rule, procedure, or desktop guide, staff must contact the Chief Investment Officer and the Department's in-house legal counsel.

## **II. ROLES AND RESPONSIBILITIES**

The statutory fiduciary responsibility to manage the Fund in a prudent manner rests with the Treasurer. The Treasurer may authorize IMD to perform certain activities with respect to the administration, management, and operation of the Pension Fund Program as outlined in the roles and responsibilities below.

### **A. State Treasurer**

1. The Treasurer is a named fiduciary of the Fund under statute
2. Select, monitor, evaluate, and terminate the Chief Investment Officer
3. Appoint an Investment Advisory Committee ("IAC"), establish its written charter, and chair the IAC
4. Recommend statutory revisions to the General Assembly
5. Approve all investment policies and any revisions thereto
6. Monitor compliance with all policies
7. Approve asset allocation targets and benchmarks as recommended by the IMD or IAC
8. Approve and terminate investment managers as recommended by the IMD
9. Approve recommendations that improve the cost effectiveness of the Fund
10. Review the risk analytics of the Fund over various time periods
11. Approve selection and retention of custodial bank
12. Approve selection and retention of consultants and third party service providers as recommended by the IMD
13. Review performance, portfolio positioning, and risk reports
14. Consult with legal counsel regarding documents, securities litigation, and other legal matters

### **B. Investment Advisory Committee**

1. Act in accordance with NCGS §147-69.2(b1) which, in part, states that the IAC "shall have advisory powers only"
2. Assist in selection and evaluation of the Chief Investment Officer
3. Review and recommend investment policies
4. Review asset allocations
5. Review and comment on investment management structure
6. Review and evaluate the selection and monitoring of investment managers
7. Review performance
8. Review and evaluate the custodian arrangement
9. Evaluate the selection of investment consultants
10. Review statutory revisions being recommended to the General Assembly
11. Annually perform a self-assessment of the IAC's function and compliance with its charter
12. Provide advice on other investment matters as requested by the Treasurer

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<sup>1</sup> This Policy does not displace DST's provisions in the North Carolina Administrative Code. However, staff should take care when interpreting Administrative Code provisions to ensure that those Code provisions have not been repealed or made obsolete due to changes in the applicable statutes.

### **C. Investment Management Division**

1. Act as a fiduciary in the responsibilities assigned to it
2. Have clearly defined responsibilities for the Chief Investment Officer and other team members
3. Recommend statutory revisions to the Treasurer
4. Draft and make recommendations to the Investment Policy
5. Monitor compliance with policies and guidelines for all investment related activities and third party service providers
6. Research and recommend asset allocation targets and benchmarks
7. Source and conduct due diligence on attractive investment opportunities; Make investment manager hire and termination recommendations to the Treasurer
8. Give recommendations that improve the cost-effectiveness of the Fund
9. Generate and review the risk analytics of the Fund at various time periods
10. Manage and monitor the custodial bank relationship
11. Review resources and make recommendations for the retention of investment consultants and third party service providers
12. Prepare performance, portfolio positioning summary, and risk reports for Treasurer and IAC
13. Consult with legal counsel regarding documents, policy, securities litigation, and other legal matters
14. Prepare data and presentations for the IAC
15. Assist the Treasurer with respect to all matters related to the Pension Fund Program, including: requests from the Retirement Board of Trustees and considerations of the Financial Operations Division
16. Provide advice on other investment matters as requested by the Treasurer

### **III. INVESTMENT OBJECTIVES**

It is the policy of the Treasurer to invest consistent with the following objectives:

- A. Provide investment returns sufficient for the Fund to make timely payment of statutory benefits to current and future members and keep contribution rates at a reasonable level over the long-term. To achieve this, long-term projected investment returns should be generally consistent with the actuarial assumed rate of return, unless otherwise determined by the Treasurer.<sup>2</sup>
- B. Avoid excessive volatility in contribution rates over the intermediate-term by maintaining a moderate risk profile and diversifying with respect to economic and financial risk factors. It is acceptable to limit the use of return-seeking strategies in order to avoid excessive volatility.
- C. Additionally:
  1. Achieve cost-efficiency in the overall investment program
  2. Exceed composite benchmark returns for the Fund and broad categories of investments within reasonable risk limits and over market cycles
  3. Ensure sufficient liquidity to meet the Fund's obligations over all time periods
  4. Comply with all governing statutes as consistent with fiduciary obligations

### **IV. STRATEGIC ASSET ALLOCATION AND PORTFOLIO CONSTRUCTION**

In order to meet the investment objectives, a "Strategic Asset Allocation" is established through consideration of the Fund's projected actuarial liabilities, liquidity needs, risk tolerance, and the role that

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<sup>2</sup> The Retirement Systems' actuary advises the applicable Retirement Boards of Trustees with respect to setting the actuarial assumed rate of return and annual required contributions. The Retirement Boards of Trustees have been granted the authority by the legislature to set the actuarial assumed rate of return for the Fund, which is currently 7.25%.

different asset categories and strategies are expected to play in the overall portfolio construction. The Strategic Asset Allocation will be reviewed no less than annually and a detailed asset-liability study will be conducted no less than triennially, assuming that benefit design and funding policy is unchanged. The current Strategic Asset Allocation, consisting of targets and authorized ranges, is detailed in Table 1.

**Table 1: Strategic Asset Allocation Targets and Policy Ranges**

	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
<b>Rates and Liquidity</b>	<b>24%</b>	<b>29%</b>	<b>42%</b>
<i>Investment Grade Fixed Income</i>	24%	28%	32%
<i>Cash</i>	0%	1%	10%
<b>Growth</b>	<b>37%</b>	<b>58%</b>	<b>71%</b>
<i>Public Equity</i>	37%	42%	47%
<i>Private Equity</i>	0%	6%	8.75%
<i>Non-Core Real Estate</i>	0%	3%	8%
<i>Opportunistic Fixed Income</i>	0%	7%	7.5%
<b>Inflation Sensitive and Diversifiers</b>	<b>4%</b>	<b>11%</b>	<b>16%</b>
<i>Inflation Sensitive</i>	2%	6%	7.5%
<i>Core Real Estate</i>	2%	5%	10%
<b>Multi-Strategy</b>	<b>0%</b>	<b>2%</b>	<b>4%</b>

Note: Rebalancing procedures are in Section V, Paragraph B. Statutory compliance limitations and considerations are described below in Section V, Paragraph E and Appendix 3.

The foundations of the Strategic Asset Allocation are the broad categories labeled: Rates and Liquidity, Growth, Inflation Sensitive and Diversifiers, and Multi-Strategy. Appendix 1 describes the “Role-in-the-Portfolio” each are expected to play given the intermediate- and long-term economic and financial market outlook. The “Portfolios” are key groupings one level lower comprised of distinct assets and strategies with specific risk characteristics. Table 2 contains qualitative expectations of the Portfolios’ risk characteristics.

**Table 2: Long-Term Qualitative Portfolio Risk Expectations**

<b>Portfolios</b>	<b>Volatility</b>	<b>Equity Beta</b>	<b>Inflation Beta</b>	<b>Bond Beta</b>	<b>Liquidity</b>	<b>Active Risk</b>
<b>Rates and Liquidity</b>						
Cash	Low	Low	Moderate	High	High	Low
Investment Grade Fixed Income	Low	Low	Negative	High	High	Low
<b>Growth</b>						
Public Equity	High	High	Low	Low	High	Low
Private Equity	High	High	Low	Low	Low	High
Non-Core Real Estate	High	Moderate	Moderate	Low	Low	High
Opportunistic Fixed Income	Moderate	Moderate	Low	Moderate	Moderate	High
<b>Inflation Sensitive and Diversifiers</b>						
Inflation Sensitive	Moderate	Low	High	Moderate	Moderate	High
Core Real Estate	Moderate	Low	Moderate	Low	Moderate	Low
<b>Multi-Strategy</b>	Moderate	Moderate	Low	Low	Moderate	High

Note: Volatility, the annualized standard deviation of returns, is a basic summary measure of investment risk. Beta measures systematic risk relative to a market or risk factor. Active Risk or Tracking Error is the volatility of the difference between managed and benchmark returns and reflects the potential for market beating or lagging returns.

Table 3 shows the projected outcomes of the Fund’s annualized returns over various horizons given a passive implementation of the targets in the Strategic Asset Allocation. The projections are based on year-by-year economic and financial simulations. They illustrate the broad range of possible outcomes, but support the long-term consistency of the Strategic Asset Allocation and the 7.25% actuarial assumed rate of return. However, over the next 10-years, the Fund is unlikely to achieve the 7.25% return. Some of these projected lower returns are expected to be offset by low inflation and active investment management strategies. Moreover, targeting a 7.25% return over the next ten years would require increasing the Fund’s volatility by more than 30% and risk large contribution rate increases.

**Table 3: Projected Ranges of Annualized Compound Passive Investment Returns**

Horizon	5 <sup>th</sup> Percentile	25 <sup>th</sup> Percentile	Expected (Average)	75 <sup>th</sup> Percentile	95 <sup>th</sup> Percentile
10 Years	0.0%	3.6%	6.1%	8.3%	11.9%
20 Years	2.6%	5.4%	7.3%	9.1%	11.7%
30 Years	3.8%	6.2%	7.8%	9.3%	11.8%

Source: IMD and Buck Consultants as of December 2013

## V. RISK MANAGEMENT AND CONTROLS

Risk management of the Fund is intended to promote the likelihood of achieving the investment objectives over the long-term. To do so, IMD will identify, monitor, and control/mitigate key investment and operational risks through regular compliance activities. The following describes primary aspects of the investment risk management program:

- A. Risk Standards and Metrics. To help achieve the investment objectives, IMD will monitor risk measurements against certain standards over various time horizons. Monitoring will occur with ex post and ex ante measurements utilizing various risk systems and vendors. It is understood that there will be periods during which the Fund’s risk profile will deviate from the standards due to market events and/or active positioning. An IMD Risk Budget Policy will be adopted by the Treasurer to further define monitoring standards, escalation standards, and escalation processes, including, but not limited to the following:
  1. Annual volatility of Fund returns of 10%
  2. Sensitivity of annual Fund returns to global stock market returns; i.e., equity beta of 0.60
  3. Sensitivity of annual Fund returns to inflation; i.e., inflation beta of 0.30
  4. Sensitivity of annual Fund returns to intermediate-term bond returns; i.e., intermediate U.S. Treasury bond return beta of 0.30
  5. Net of fees risk-adjusted returns; i.e., sharpe ratio of 0.40 and information ratio of 0.30
  6. Net employer and employee contributions as a ratio of Fund assets of -3%
  7. Level 1 liquidity; i.e., investments that take 3 days or less to exit have value equal to 70% of Fund
  8. Fund tracking error or active risk (TBD in Risk Budget Policy)
  
- B. Fund Rebalancing. A disciplined rebalancing policy is an important investment risk management tool that can occur through the ongoing natural cash flows of the Fund, relative valuation changes, and asset liquidations and transfers.
  1. Interim Rebalancing. Should the Portfolio allocation for either Investment Grade Fixed Income or Public Equity fall below or exceed a boundary of +/- 2% relative to its Target Allocation in Table 1 for a period exceeding five (5) business days, IMD shall produce and provide to the Treasurer a written memorandum describing a proposed rebalancing action. Outside Policy Range.

Investment strategies or market conditions which result in a Portfolio allocation beneath the minimum or above the maximum listed in Table 1 for a period exceeding five (5) consecutive business days shall be reported to the Treasurer, together with a review of conditions causing the persistent deviation and a recommendation for subsequent investment action. In such a case, the Treasurer shall approve a transition plan for an orderly rebalancing.

2. Suspensions of Rebalancing. On occasion, it may not be prudent to immediately initiate rebalancing; for example, due to concerns about losses resulting from liquidation of investments or concerns that exceptional market volatility might require reversal of the action. Therefore, notwithstanding any other provision of this Policy, the Treasurer may authorize in writing a suspension of rebalancing. Any such written authorization shall cover a time period no more than 6 months long. At the end of that period, the Treasurer may authorize another 6 month suspension period if circumstances warrant.
  3. IMD may utilize physical securities and derivatives, including options, to accomplish rebalancing to the extent otherwise consistent with applicable statutes and this Policy.
- C. Cost-effectiveness. Cost-effectiveness will be proactively managed. IMD will regularly monitor the cost-effectiveness of the Fund's internal and external costs and expenses. Cost-effectiveness will be assessed relative to investment objectives, peers, industry benchmarks, and realized investment performance.
- D. Liquidity. The liquidity of the Fund, including, but not limited to marketability of investments, cash flow from investments, net employer and employee contributions, capital commitments, and potential commitments will be regularly monitored. The holding periods and cash flows for the various investment vehicles may range widely. It is recognized that non-public market strategies are typically highly illiquid, in general only offering liquidity upon the realization or partial realization of an investment. The Fund will be diversified among investments with different degrees of liquidity.
- E. Portfolio Allocations and Guidelines. Each Portfolio comprising the Fund has authorized allocations and guidelines to govern their operation and help manage risk and these are set out in Appendix 2.
1. IMD shall periodically review the Portfolio allocations and guidelines. Adjustments can be based on various factors including changing investment objectives, peer practice, market conditions, policy benchmarks, statutory revisions, expected returns/risks, and liquidity.
  2. Due to market movements, active positioning, or exogenous factors, a Portfolio may deviate from authorized allocation ranges and will be rebalanced to the extent practicable and warranted by market conditions and/or active positioning. Compliance with ranges will be monitored by IMD.
- F. Compliance. IMD will implement regular and independent compliance procedures to ensure ongoing adherence with the requirements of NCGS §147-69.2, this Policy, other IMD policies, procedures, and guidelines and contractual guidelines. Statutory compliance requirements are detailed in Appendix 3.

## **VI. ASSET VALUATION**

The custodian will value securities held in accounts subject to investment management agreements each trading day using market prices from a nationally recognized third-party vendor. Short-term cash investments will be carried at amortized cost as established by the custodian, but differences from market value will be periodically reviewed. Generally, IMD will rely on the valuation of investments as reported by the investment managers for commingled and non-public market vehicles. IMD shall seek to comply with industry best practices with respect to monitoring the asset valuation policy and practices used by investment managers. Investment managers shall be contractually obligated to provide annual financial statements audited to be compliant with United States generally accepted accounting principles ("GAAP"), or similar principles if there are vehicles with significant foreign assets, preferably by a nationally recognized audit firm. Investment managers will also be obligated to provide unaudited quarterly financial statements. If the investment manager is not fulfilling its obligation to provide compliant statements in a

timely manner, the IMD staff may engage special service providers in assessment of current fair market value.

## **VII. BENCHMARKING AND REPORTING REQUIREMENTS**

IMD's custodian shall independently calculate rates of return, in compliance with industry standards, and maintain various performance benchmarks and historical data to reasonably assess Fund performance. Custodian, staff, and consultant reports shall regularly compare net of fees managed rates of return to performance benchmarks and returns of peers, as applicable. Such reports shall be designed to facilitate monitoring risk factors and to evaluate compliance with asset allocation targets, asset valuation, portfolio guidelines, statutory requirements, and performance for the Fund and subcomponents.

Two total plan performance benchmarks will be used to measure the relative performance of the Fund and its risk-adjusted returns. They are:

- A. The Long-Term Policy Benchmark has roughly equivalent projected volatility as the Strategic Asset Allocation according to the 2013 Asset Liability Study. It will be comprised of:
  1. 57% MSCI All Country World Investable Market Index, in dollar terms, net of withholding taxes on non-resident institutional investors
  2. 33% Bank of America Merrill Lynch 5+ Years U.S. Treasury Index
  3. 6% Dow Jones-UBS Commodities Index
  4. 4% Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index.
- B. The Implementation Benchmark will measure how well the Portfolios are being invested in aggregate relative to their structure and guidelines. It will be a weighted performance of the Portfolios' individual benchmarks, as described below, using the Target Allocations from Table 1.
  1. Cash. iMoneyNet First Tier Institutional Money Market Funds Net Index.
  2. Investment Grade Fixed Income. A custom index comprised 10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index. The custom BOAML core index comprised of the following weightings: 30% BOAML 5+ Years Governments, 35% BOAML 5+ Years Investment Grade Corporates, and 35% BOAML Mortgage Master. BOAML signifies: Bank of America Merrill Lynch indices.
  3. Public Equity. A custom index comprised of a dynamically weighted combination of two components including MSCI All Country World Investable Market Index (MSCI ACWI IMI), in dollar terms, net of withholding taxes on non-resident institutional investors and a beta adjusted MSCI ACWI IMI Index. MSCI signifies: Morgan Stanley Capital International
  4. Private Equity. A custom index, net of all fees and expenses, comprised of the following Burgiss Group Private iQ indices: 50% Buyout, 20% Venture Capital, and 30% Special Situations and Distressed Securities.
  5. Non-Core Real Estate. A custom index, net of all fees and expenses, comprised of the following Burgiss Group Private iQ indices: 80% U.S. Non-Core Real Estate (Opportunistic and Value-Added) and 20% Non-U.S. Non-Core Real Estate (Opportunistic and Value-Added).
  6. Opportunistic Fixed Income. A custom index, net of all fees and expenses, comprised of 50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% BOAML High Yield Index.
  7. Inflation Sensitive. A custom index, net of all fees and expenses, comprised of 33.0% Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index, 17% Dow Jones-UBS Commodities Index, and 50% of the dynamically weighted combination of the benchmarks of investments classified within Private Natural Resources or Other Real Assets and Diversifiers. For that 50% portion of the Portfolio's benchmark, industry standard benchmarks will be utilized for each specific strategies (e.g., Burgiss Group Private iQ Private Energy Index, NCREIF Timberland



Index, etc.), but if such benchmarks do not exist for a specific strategy the benchmark shall be the BOAML 5-10 Year US Inflation Linked Treasury Index.

8. Core Real Estate. A custom index comprised of 80% weighting of the National Council of Real Estate Investment Fiduciaries Open-End Diversified Core Equity Fund Index (“NCREIF ODCE Index”), net of all fees and expenses, and 20% weighting of the Financial Times and London Stock Exchange (“FTSE”) European Public Real Estate Association (“EPRA”) and the National Association of Real Estate Investment Trusts (“NAREIT”) Global Index (“FTSA/EPRA/NAREIT Global Index”).
9. Multi-Strategy. A custom index comprised of a dynamically weighted combination of the HFRX Multi-Strategy Hedge Fund Index, net of fees, and the market value weighted benchmarks for any other total fund strategies within the Portfolio.

During the transition of assets to the new Strategic Asset Allocation Target Weights authorized in this Policy, the benchmark weights for accounts, Portfolios, and the total plan may reflect actual transitory exposures. The Director of Risk Management shall recommend for the Investment Committee’s review and the Chief Investment Officer’s approval any such interim benchmarks and related methodologies. The Director of Risk Management is responsible for creating and maintaining documentation sufficient to provide transparency for third-party reviews.

## **VIII. OTHER PROGRAMMATIC INITIATIVES**

- A. Small and Emerging Investment Managers. Small and Emerging Managers (SEMS) are typically characterized by entrepreneurial general partners that are earlier in their fund-raising lifecycle, have highly focused organizational resources, and/or smaller assets under management (e.g., between \$100 million and \$2 billion). IMD believes such firms have a strong probability of achieving enhanced results if they can demonstrate differentiated deal-flow, unique insights, strong financial, operational, and investment expertise and resources, a high performing culture, a transparent and repeatable investment process, and alignment with investors. SEMS are also characterized by elevated business risk and greater dispersion of returns than larger more established investment managers. IMD will endeavor to invest with SEMS for actively managed mandates in each Portfolio so long as all fiduciary requirements are met. The long-term goal will be to achieve superior performance and preferential fees and terms as successful organizations grow and mature over time, while maintaining the discipline to eliminate poor performing relationships.<sup>3</sup> Aggregate Fund assets invested with SEMS will vary over time, but will be monitored against a \$1.5 billion standard for actively managed investment strategies.
- B. Corporate Governance. The Treasurer will approve a separate policy addressing proxy voting, shareholders resolutions, engagement with corporate leaders and regulatory agencies, and collaboration with other institutional investors to create long term value for portfolio companies. IMD will annually review such policy. Corporate Governance strategic objectives include:
  1. Financial regulatory reform
  2. Sustainability
  3. Company engagement
  4. Board Diversity

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<sup>3</sup> Under NCGS§147-69.7 the Treasurer is to invest and manage the entrusted funds in a manner consistent with statutes, regulations, policies, and is required to manage the program solely in the interest of the participants and beneficiaries of the NCRS. This statute also provides that, in discharging the Treasurer’s fiduciary duties in managing the assets of the NCRS, the Treasurer may consider benefits created by the investment in addition to investment return only if the Treasurer determines that the investment providing these collateral benefits would be prudent even without collateral benefits. A potential collateral benefit of the SEMS Program is supporting the guiding principles of the State of North Carolina to increase efforts to develop Historically Underutilized Businesses as defined in NCGS §143-128.2(g)(1)(2)(3) without compromising performance.

- C. Innovation Fund. The Treasurer will adopt a separate policy to guide the implementation of an Economically Targeted Investment fund that is authorized to commit from time to time up to \$250 million in investment opportunities with significant operations in, or significant connections with North Carolina (“Innovation Fund”). The primary objective of the Innovation Fund is to achieve a competitive risk-adjusted rate of return for the Private Equity Portfolio. The collateral objective of the Innovation Fund is to support the economic well-being of the state of North Carolina.

## **IX. IMPLEMENTATION GUIDELINES**

- A. Interim Capital Allocation. Over time, IMD will allocate Fund assets within and between Rates and Liquidity, Growth, Inflation Sensitive and Diversifiers, and Multi-Strategy to reflect the prevailing and intermediate-term expected market and economic environments, relative valuations, available vehicles and capacity, cost, and resourcing considerations. Through an internal Investment Committee, whose charter will be approved by the Treasurer, IMD will utilize a team-oriented approach for capital allocation to improve collaboration, portfolio construction, and resourcing.
- B. Active Management. All Portfolios shall be invested to achieve or exceed the return on their respective benchmarks over a long period of time, but, in recognition that investment skill is rare:
1. Public market Portfolios will be well diversified with respect to their benchmarks and will scale their reliance on active strategies according to the degree of efficiency in underlying securities markets, capacity in effective active strategies, and ongoing total fund liquidity requirements.
  2. Non-public market Portfolios will utilize a prudent process to maximize long-term access to cost-effective and attractive risk-adjusted investment opportunities through use of business partners with appropriate:
    - a. Financial, operational, and investment expertise and resources
    - b. Alignment of interests
    - c. Transparency and repeatability of investment process
    - d. Controls on leverage
- C. Internal and External Management. IMD will manage certain portions of the Fund internally and the remainder through external investment managers. IMD’s reliance on internal versus external management will change over time depending on the investment environment, resources, economies of scale, and other factors.
1. Internal Management. The benefits of internal investment management include lower investment costs, liquidity, control, and transparency. However, given limited resources relative to external managers, the Fund’s primary internal investment management will be in passive and low-active risk public market securities portfolios. Currently, IMD has statutory authority to manage cash, investment grade fixed income, and passive public equity internally for the Fund. Consistent with the Signatory Authority Policy, Investment Directors responsible for internally managed portfolios will operate within an established set of guidelines with the objective of achieving or exceeding their specific benchmark, net of fees and expenses, within reasonable risk parameters. Directors’ retain general discretion to pursue their investment strategy within each internal portfolio’s stated guidelines.
  2. External Management. All external managers will have a fiduciary responsibility with respect to the Fund assets under management. The terms and conditions of the investment relationship will be governed by the set of investment documents specific to the investment. The external managers will operate within an established set of guidelines with the objective of achieving or exceeding their specific benchmark, net of fees and expenses, within reasonable risk parameters.

- D. Selection and Monitoring of Investment Managers. Selection, monitoring, and termination of investment managers shall occur according to a diligent and methodical process defined in separate policies approved by the Treasurer.
1. IMD will develop a policy to govern the sourcing and selection of all external investment managers. IMD will document the basis for each external investment manager selection or funding.
  2. IMD will develop an investment manager monitoring, retention, and termination policy applicable to both external investment managers and internal portfolios. IMD will document the basis for any defunding or termination decisions.
- E. General Guidelines for Portfolios. The following are general guidelines that apply to each Portfolio for risk management purposes and to implement certain core beliefs. Specific guidelines are in Exhibit 2.
1. Investment Vehicles. Fund investments may be made through any structure permitted by statute, including investment management agreements, separately managed limited partnerships, commingled limited partnerships, limited liability companies or other limited liability investment vehicles, or open and closed-end commingled investment vehicles. Fund-of-fund vehicles may be utilized, but typically only due to limited resources, access constraints, or specialized mandates.
  2. Contracts. Each investment will be governed by a set of legal agreements that are specific to the vehicle. For each external investment manager, permissible investments, and objectives will be clearly defined through such legal agreements. IMD will endeavor to obtain the best fees and terms available and will monitor the investment manager's performance to ensure the manager is adhering to the guidelines set out in the legal agreement. IMD may restrict any investment manager from making certain investments based on state or federal law, state policy, or IMD directives.
  3. Investor Protections, Transparency, and Alignment. IMD shall seek protections, transparency, and alignment by negotiating preferred terms with investment managers and using customized vehicles wherever prudent. Choice of vehicle structures should be based on cost effectiveness, mitigating the risk of misalignment, ensuring the safekeeping of assets, and providing accurate, timely, and transparent valuation and monitoring of assets and performance. IMD acknowledges that the nature of most non-public market investments severely limits discretionary control over such investments. In exceptional circumstances, IMD may seek to gain liquidity through the sale of interests in the secondary market or may act to dissolve a partnership or other investment vehicle in the event the contractual agreements are violated.
  4. Diversification. Diversification is important in managing portfolio risk and achieving superior risk-adjusted returns across financial market environments. However, given the size of the Fund it is possible to over-diversify and incur substandard performance. IMD will endeavor to thoughtfully diversify across asset categories, strategies, systematic risk exposures, and investment managers, unless otherwise prudent, by considering the marginal impact of new investment allocations on cost, risk, and risk-adjusted returns. IMD will regularly source and evaluate new investments which may offer diversification benefits.
  5. Geography. Unless otherwise prohibited, the Fund may invest wherein the issuer, vehicle, or strategy is domiciled in the U.S. and/or outside the U.S.; provided the management team has a demonstrated ability to be successful in meeting the intended investment strategy's objectives.
  6. Leverage. Leverage is an important risk factor at the portfolio company level and at the vehicle level. Where authorized, IMD shall review and monitor the use of leverage to determine reasonableness in the context of investment strategy and contribution to risk.
  7. Investment Firm Concentration. No external firm shall actively manage more than 25% of a Portfolio on an allocation basis at the time of initial investment, unless specifically approved by the Treasurer.
  8. Investment Strategy Concentration. No individual external active investment strategy shall exceed 10% of a Portfolio on an allocation basis at time of initial investment, unless specifically approved by the Treasurer.

9. Fund Concentration. IMD shall consider external firm level risk in sizing an investment/commitment to invest for a given opportunity. Ordinarily, a Portfolio's assets shall constitute less than a 25% economic interest of a given investment vehicle at the time of making the investment/commitment. This limitation does not apply to customized investment programs where the Fund is the sole or principal investor other than the investment manager or its affiliate.
10. Vintage Year. IMD will endeavor to diversify capital commitments across vintage years and, correspondingly, economic, and financial market cycles, to help protect the portfolio from concentration risk in any one year-absent compelling reasons to not diversify. Annual investment work plans will be used to develop a multi-year forward calendar and indicative commitment pacing for Portfolios.
11. Securities Lending. The Cash Portfolio, Investment Grade Fixed Income Portfolio, and Public Equity Portfolio may maintain a securities lending program(s) designed to earn incremental income by taking advantage of the market demand for securities held in this portfolio. The incremental income can help offset custodial costs and improve the overall return on Fund assets. Securities Lending will be governed by a separate policy approved by the Treasurer. IMD will review such policy no less frequently than triennially.
12. Transition management. IMD will maintain and periodically update a pool of firms that are able to evaluate and conduct asset transitions. IMD may also utilize such firms or specialists to manage and transact in-kind distributions.

## APPENDICES

### APPENDIX 1: STRATEGIC ASSET ALLOCATION AND “ROLE-IN-PORTFOLIO” APPROACH

The Strategic Asset Allocation is developed in the context of an intermediate- and long-term economic and financial market outlook and certain core investment beliefs. An expression of the latter is a view as to the role that various risk-reducing assets, return-seeking assets, and skill-based strategies serve in the portfolio to help mitigate the likelihood and severity of not achieving the investment objectives.

As of Spring 2014, the baseline economic and financial market outlook over the intermediate- to long-term includes:

- A. Initially very low interest rates, moderately rising over the intermediate-term
- B. Moderately rising inflation
- C. Modest public equity market returns by long-term historical standards for the intermediate-term
- D. Some benefits to diversification, but all investment approaches are impacted by the low return environment

Fragility due to continued high reliance on global policy makers in face of unprecedented fiscal and monetary interventions, cyclical headwinds, and structural imbalances create two distinct risk scenarios as alternative outcomes to the baseline:

- A. U.S. economy has less momentum than expected. Emerging-market balance of payment issues and delayed European normalization. Susceptibility to systemic shocks.
- B. Global growth surprises on upside. Inflation rises more than expected. Susceptibility to supply shocks.

The foundations of the Strategic Asset Allocation are the categories labeled: Rates and Liquidity, Growth, Inflation Sensitive and Diversifiers, and Multi-Strategy. The following describe their expected roles-in-the-portfolio and principal risks.

#### A. Rates and Liquidity

1. Role in Portfolio. Provide capital preservation, low year-to-year volatility of returns, liquidity, and modest incremental returns above normal return premiums through security selection, interest rate anticipation, yield curve positioning, and sector allocations. With inflation and interest rates expected to rise gradually over the 10 to 15 year period, long duration fixed income is projected to provide low but acceptable returns, particularly on a risk-adjusted basis relative to other investments. Cash returns are expected to increase over time in line with changes in U.S. monetary policy. Long duration fixed income should continue to function as a natural hedge to liabilities. Finally, provide protection in certain risk scenarios involving deflation, systemic risk, and socio-political risk episodes, and facilitate opportunistic investments during market dislocations.
2. Principal Risks. Nominal investment returns are not sufficient at current yields to achieve Fund investment objectives. High and unanticipated inflation would depress real returns on the longer duration investments. A severe recession could cause corporate bond defaults and capital losses. Liquidity of corporate and asset backed bonds may suffer with systemic stress.

#### B. Growth

1. Role in Portfolio. Provide long-term capital growth, with secondary consideration of current income, principally through equity-like investments that are a claim on real income streams. Participation in global economic growth, including emerging markets, through low cost and liquid public equity exposure. Material incremental returns, in excess of long-term risk premiums, due to providing longer duration capital commitments, making operationally

intensive non-public investments involving control, restructuring, or day-to-day management, and exploiting market dislocations through opportunistic allocations. To a lesser extent, earning modest incremental returns by accessing security selection, trading, and hedging skill. Partial diversification of equity risk through use of opportunistic fixed income strategies, non-core real estate, and hedged equity strategies.

2. **Principal Risks.** The realized equity risk premium is volatile over relatively long periods of time (e.g., 15 years). High and unanticipated inflation could depress real returns on the longer duration opportunistic fixed income investments and non-public market investments utilizing leverage. A recession would cause corporate defaults, equity market underperformance, and capital losses in opportunistic fixed income and non-core real estate. Active investment managers may underperform broad market indices for extended periods of time due to concentrated portfolios, elevated idiosyncratic risk, or poor execution. Publicly traded equity markets are highly efficient. Certain non-public market investment managers may utilize leverage and illiquid structures, which can increase the risk and size of investment loss. There is a high dispersion of active investment manager returns.

#### C. Inflation Sensitive and Diversifiers

1. **Role in Portfolio.** Provide a balance of capital appreciation and current income with a positive relationship to inflation through explicit indexing, contracted escalators, and participation in economic sectors that benefit from periodic supply constraints, cost-push, or monetary policy-induced inflationary pressures. Provide inflation-adjusted capital preservation through real asset-based lending and equity investments. Modest incremental returns due to providing longer duration capital commitments, making operationally intensive non-public investments involving control or day-to-day management, accessing trading and market-timing skill, including hedging individual securities and commodities and exploiting market dislocations through opportunistic allocations. Partial diversification of equity risk and protection in certain risk scenarios involving heightened systemic risk and socio-political risk.
2. **Principal Risks.** Nominal investment returns are expected to be lower than growth-oriented investments due to inflation hedging aspects. Investments will have exposure to other systematic risk factors that could negate or mitigate their inflation sensitive qualities over various horizons. Inflation may increase materially in the short-run, with limited or delayed repricing of investments because of underlying operating contracts. A severe recession could cause loan defaults and capital losses. Active investment managers may underperform markets and peers for extended periods of time due to concentrated portfolios, elevated idiosyncratic risk, or poor execution. Certain investment managers may utilize leverage and illiquid structures, which can increase the risk and size of investment loss. There is a high dispersion of active investment manager returns.

#### D. Multi-Strategy

1. **Role in Portfolio.** To increase investment flexibility across different asset categories and strategies, including during episodes of heightened macroeconomic risk and systemic risk. Provide efficient compounding of capital through trading and market-timing skill, including hedging individual securities and commodities and exploiting market dislocations through opportunistic allocations. To facilitate hedging of Fund-level risks, as might be prudent, from time to time.
2. **Principal Risks.** The underlying strategies will have exposure to systematic risk factors found elsewhere in the Fund. Flexible strategies have an implicit market-timing component. Certain investment managers may utilize leverage and illiquid structures, which can increase the risk and size of investment loss. There is a high dispersion of active investment manager returns.

## **APPENDIX 2: PORTFOLIO INVESTMENT STRATEGY AND GUIDELINES**

### **CASH PORTFOLIO**

#### **I. INTRODUCTION**

The Cash Portfolio (“Portfolio”) is internally managed through the Short Term Investment Fund (“STIF”). The STIF is internally managed and consists of highly diversified liquid money market instruments and short to intermediate Treasuries, Agencies, and AAA-rated corporate obligations.

#### **II. INVESTMENT OBJECTIVES**

The Fund is investing in cash to accomplish the following objectives:

- A. Preservation of capital. The selection of security types should maintain a focus on the safeguarding of assets.
- B. Liquidity. Make investments in securities that maintain a strong liquidity profile.
- C. Competitive relative returns. Invest to achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.

#### **III. INVESTMENT STRUCTURE**

The Portfolio will invest only in STIF.

#### **IV. SPECIFIC INVESTMENT GUIDELINES**

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

- A. Types of Fixed Income Investments
  - 1. General Statute §147-69.1 governs the security types that are eligible for purchase in STIF.
  - 2. The STIF Portfolio can invest in maturities ranging from overnight to five years.
- B. Liquidity. The portfolio will be managed with a laddering strategy out to one year that is designed to provide consistent liquidity for short-term cash needs, but allows the portfolio manager to take advantage of investing out the yield curve with a portion of the assets.
- C. Leverage. No leverage is allowed

D. Diversification. The table below outlines the diversification guidelines by maturity and asset type.

**Maturity Guidelines**

	Minimum	Maximum
0 - 1 Year	40%	100%
1 - 3 Years	0%	40%
3 - 5 Years	0%	40%

**Security Type Guidelines**

	Minimum	Maximum
Repurchase Agreements	0%	40%
US Treasury	25%	100%
US Agencies	0%	75%
Corporate Notes	0%	15%
Other Eligible Securities	0%	10%

If unanticipated and abnormal flows leave the STIF portfolio outside the guidelines, IMD will initiate a rebalancing plan to achieve compliance.

**V. PERFORMANCE AND REPORTING GUIDELINES**

The benchmark for the Cash Portfolio is the iMoneyNet First Tier Institutional Money Market Funds Net Index. STIF and the benchmark are measured on a cash rate of return or current yield following money market conventions.



## **INVESTMENT GRADE FIXED INCOME PORTFOLIO**

### **I. INTRODUCTION**

The Investment Grade Fixed Income Portfolio (“Portfolio”) invests in a highly diversified mix of publicly traded investment grade fixed income securities. The majority of the exposure will be through an internally managed long duration core fixed income account that has exposure across multiple fixed income asset types, including Treasury, agency, corporate and mortgage securities. The Portfolio will have a policy allocation to the Short Term Investment Fund (“STIF”) to create a quasi-barbell structure as determined in the 2013 asset liability study. STIF is also internally managed and consists of high quality short-term Treasury, Agency and AAA rated corporate obligations. The Portfolio may include investment grade non-core exposure depending on liquidity needs and/or market environment. The non-core allocation may include more concentrated strategies than core.

### **II. INVESTMENT OBJECTIVES**

The Fund is investing in public high quality fixed income to accomplish the following objectives:

- A. Diversification. Exposure to fixed income provides significant diversification to the total Fund due to differences in correlation with other asset types. Fixed Income assets historically have the lowest volatility among statutory eligible asset types. As such, the exposure to the asset class will lower total pension risk over the long term.
- B. Capital preservation. Exposure to Treasuries and other very high quality investment grade fixed income assets have historically provided limited risk of principal loss.
- C. Liquidity. Provide a source of liquidity to the Fund and other asset classes through the high quality and publicly traded asset types.
- D. Competitive relative returns. Invest to achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- E. Deflation protection. The structure of fixed income assets should provide a direct hedge against deflation.

### **III. INVESTMENT STRUCTURE**

The Portfolio will have three major subcomponents.

- A. Core Fixed Income. The primary means for fixed income exposure will be an internally managed core fixed income portfolio that strives to provide superior returns at much lower costs than an external account. The expected total costs for managing core fixed income assets are 1-3 basis points. The internally managed Short Term Investment Fund (“STIF”) will be the cash vehicle for the core portfolio.
- B. Non-Core Fixed Income. Any non-core exposures are expected to be through external investment managers utilizing separate accounts.
- C. Non-Core Cash held in the form of STIF.

#### IV. SPECIFIC INVESTMENT GUIDELINES

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio:

A. Types of Fixed Income Investments

1. U.S. Treasuries
2. U.S. Agencies (FNMA, FHLMC, FHLB, FFCB, GNMA, etc.)
3. Corporate securities
4. Asset backed securities, including mortgage pass through securities
5. Other securities as defined by NCGS § 147-69.2(b)(1) through (b)(6b)

B. Quality. Securities shall bear an investment grade rating at the time of purchase by at least one nationally recognized rating agency as outlined in the statutes.

C. Leverage. No leverage is allowed in the Portfolio

D. Allocation. Authorized ranges and targets by asset type

**Total Investment Grade Fixed Income**

	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Core Fixed Income	85%	90%	95%
Non-Core Fixed Income	0%	0%	15%
Non-Core Cash (STIF)	5%	10%	15%

**Core Fixed Income**

	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Government (U.S. Treasury & Agency)	25%	30%	35%
Corporate	30%	35%	40%
Mortgage	30%	35%	40%
Cash	0%	0%	5%

E. Duration. The duration of the Portfolio is expected to be approximately five to ten years as reflected by the structure of the performance benchmark. The Portfolio should be within one year (+/-) of the performance benchmark duration. The Core Fixed Income subcomponent should be within one year (+/-) of the performance benchmark duration, excluding cash.

F. Currency. While geographic exposures may be global, all the securities will be U.S. dollar denominated.

#### V. PERFORMANCE AND REPORTING GUIDELINES

The Portfolio's benchmark is a custom index comprised of longer duration investment grade government, corporate, and mortgage securities and a cash allocation. The benchmark is a custom index comprised of 10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index. The custom BOAML core index comprised of the following weightings: 30% BOAML 5+ years Governments, 35% BOAML 5+ years Investment Grade Corporates, and 35% BOAML Mortgage Master. BOAML signifies: Bank of America Merrill Lynch indices.

## **PUBLIC EQUITY PORTFOLIO**

### **I. INTRODUCTION**

The Public Equity Portfolio (“Portfolio”) invests in a highly diversified mix of publicly traded global equities. Any common stock, preferred stock, or other equity-related securities may be utilized (i.e., regardless of market capitalization, style categories, currency denomination, and domicile of issuer), with the exception that a manager may be restricted from purchasing certain securities based on state or federal law, state policy, or Treasurer directives. The portfolio may include internally and externally managed portfolios of publicly traded equity securities. The externally managed portfolios include both active and passive equity managers, and hedge funds which invest primarily in publicly traded equity securities, but may be authorized to utilize other instruments through contract.

### **II. INVESTMENT OBJECTIVES**

The Fund is investing in public equities to accomplish the following objectives:

- A. Attractive absolute returns. Achieve long-term equity market returns in a low cost manner with downside risk mitigation. Hedged equity strategies are expected to reduce downside risk of the equity portfolio.
- B. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- C. Diversification. Use publicly traded equity to access a wide range of investible global markets and enhance the diversification of the Fund.
- D. Liquidity. Provide a source of liquidity to the Fund through the publicly traded asset types in the portfolio held in the long-only vehicles.

### **III. INVESTMENT STRUCTURE**

The Portfolio will have two major subcomponents:

- A. Long-Only Public Equity. This subcategory may include internally and externally managed portfolios of publicly traded U.S. equity, non-U.S. Equity, and global equity securities held in long-only vehicles. Investment managers may have mandates that cover one or more of market capitalization: large-cap, mid-cap, and small cap; style categories: growth and value; and regions to include but not limited to: U.S., Developed Non-U.S., Emerging Market, etc. The externally managed portfolios include both active and passive equity managers. However, the internally managed portfolios may only include passive mandates.
- B. Hedged Equity. This subcomponent is limited to various equity-based hedge fund strategies implemented through externally managed investment vehicles.

### **IV. SPECIFIC INVESTMENT GUIDELINES**

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

A. Allocation. Authorized ranges and targets for the subcomponents of the Portfolio.

Subcomponent	Minimum	Target	Maximum
Long-Only	88%	93%	100%
Hedged Equity	0%	7%	12%

- B. Leverage. Leverage is only allowed within the Hedged Equity subcomponent of the Portfolio. IMD shall review the use of leverage to determine the reasonableness in the context of investment strategy.
- C. Dedicated short-only strategies are not authorized, although transitory aggregate net short exposures at the individual fund level will occur from time-to-time due to managers tactically positioning for extraordinary market environments or other situations that may be fund specific (e.g., wind-down).
- D. Acknowledgement of Market Efficiency. The Portfolio shall have a reliance on low cost passive strategies scaled according to the degree of efficiency in underlying securities markets, capacity in effective active strategies, and ongoing Fund liquidity requirements.

## V. PERFORMANCE AND REPORTING GUIDELINES

The Long-Only Public Equity subcomponent of the Portfolio will be benchmarked to the Morgan Stanley Capital International All Country World Investable Market Index (MSCI ACWI IMI), in dollar terms, net of withholding taxes on non-resident institutional investors. Notwithstanding the foregoing, within such subcomponent, the U.S. Equity portion is to be designed to achieve a rate of return in excess of the Russell 3000 Index; the Non-U.S. Equity portion is to be designed to achieve a rate of return in excess of the Morgan Stanley Capital International All Country Investible Market Index ex-U.S. (“MSCI ACWI Ex-U.S. IMI”); and the Global Equity portion is to be designed to achieve a rate of return in excess of the MSCI ACWI World Index. The Hedged Equity subcomponent of the Portfolio will be benchmarked to a beta adjusted ACWI IMI Index.

The Custom Public Equity Benchmark shall consist of a dynamically weighted combination of two components including the MSCI ACWI IMI Index and the custom hedged equity benchmark.

## **PRIVATE EQUITY PORTFOLIO**

### **I. INTRODUCTION**

The Private Equity Portfolio (“Portfolio”) invests in a reasonably diversified mix of buyout, venture capital, growth equity, and private special situations vehicles through external managers. The Portfolio will consist of vehicles that primarily invest in corporate buyout transactions or other private equity transactions, including securities that are not publicly traded, such as preferred stock or common stock. Investments by such vehicles may also be made into public companies, where a private investment allows an investment manager to implement their investment strategies.

### **II. INVESTMENT OBJECTIVES**

The Fund is investing in private equity to accomplish the following objectives:

- A. Attractive absolute returns. Long-term returns in excess of public market equity returns, sufficient to compensate the Fund for the higher degree of idiosyncratic risk, smaller company equity exposure, and higher portfolio company leverage.
- B. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- C. Diversification. Utilize certain components of private equity to enhance the diversification of the Fund (e.g., special situations).

### **III. INVESTMENT STRUCTURE**

The Portfolio will have three major subcomponents:

- A. Growth. Inclusive of venture capital and growth equity strategies. Growth equity investments, most often minority investments, are in relatively mature companies that are looking for capital to expand or restructure operations, enter new markets or finance a major acquisition without a change of control of the business. Venture capital refers to equity investments made, typically in less mature companies, for the launch of a seed or start-up company, early stage development, or expansion of a less mature business. Venture capital may target the application of new technology, new marketing concepts, and new products that have no or limited track record or stable revenue streams.
- B. Buyout. Buyout refers to a strategy of making control investments as part of a transaction in which a company, business unit, or business assets are acquired from the current owners typically with the use of financial leverage. Buyout strategies attempt to create value by using their ownership position to improve the operations, governance, capital structure, and/or strategic position of the companies in which they invest. The companies involved in these transactions are more often mature and generate operating cash flows, but some strategies acquire several similar businesses to create economies of scale and pricing power.
- C. Special Situations. A broad set of strategies inclusive of distressed for control, secondary strategies, co-investment, and other strategies not classified into buyout or growth. Secondaries are typically purchased to provide the Portfolio with additional diversification, provide access to certain investment managers, and improve the risk-adjusted returns of the Portfolio; other benefits include blind pool risk-mitigation, J-Curve mitigation, immediate exposure, and accelerated distributions.

#### IV. SPECIFIC INVESTMENT GUIDELINES

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

- A. Allocation. Authorized ranges and targets for the subcomponents of the Portfolio are in the following table.

<b>Subcomponents</b>	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Growth	10.0%	20.0%	30.0%
Buyout	35.0%	50.0%	65.0%
Special Situations	15.0%	30.0%	45.0%

- B. Leverage. Leverage is authorized within debt-oriented funds, but must be regularly monitored to determine the reasonableness in the context of investment strategy. IMD acknowledges that vehicles utilized will primarily provide discretion to the general partners and managing members for individual vehicles' leverage levels.

#### V. PERFORMANCE & REPORTING GUIDELINES

The Portfolio's custom benchmark shall be derived from the Burgiss Group Private iQ indices, net of all fees and expenses (the "Custom Private Equity Benchmark"), comprised of the following: 50% Buyout, 20% Venture Capital, and 30% Special Situations and Distressed Securities. In addition, the performance of investments may be measured relative to the performance of investment managers employing similar investment strategies, using data provided by reputable sources. On 10 year and longer-term basis, the Portfolio's performance will be compared to a risk- and domicile-adjusted public market equivalent benchmark to assess the opportunity cost of the Portfolio versus the public equity markets.

## **NON-CORE REAL ESTATE PORTFOLIO**

### **I. INTRODUCTION**

The Non-Core Real Estate Portfolio invests in a reasonably diversified mix of global equity and debt investments in commercial or residential real estate through external investment managers and vehicles. The Portfolio equity interests may be direct undivided, or financed, ownership in real estate assets, joint ventures, operating companies, publicly traded entities and other private entities. Debt interests may be related to mortgages, participating debt, or mezzanine loans, and would not typically be related to securities. The primary purpose of the investments should be to own real estate or related debt financing.

### **II. INVESTMENT OBJECTIVES**

The fund is investing in the Non-Core Real Estate Portfolio to accomplish the following objectives:

- A. Attractive absolute returns. Long-term returns (including appreciation and income returns) that are competitive with long-term public market equity returns and sufficient to compensate the Fund for the higher degree of idiosyncratic real estate risks, leverage, and illiquidity. This objective includes investing opportunistically and with market cycle sensitivity over the long-term.
- B. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- C. Diversification. Use the investments to enhance the diversification of the Fund given historically low correlations with fixed income and as a result of accessing international real estate markets.

### **III. INVESTMENT STRUCTURE**

The Portfolio will have two major subcomponents:

- A. Value. Primarily equity strategies related to properties that are functional, high quality assets with specific property issues, such as high vacancy, significant upcoming lease expirations, or below market rents. Value properties tend to be under-managed and/or underperforming and have some current income from existing leases. Through management and repositioning, there is significant appreciation potential. Value investments have varying degrees of leverage typically ranging from 40% to 65%.
- B. Opportunistic. Primarily equity strategies that seek to exploit inefficiencies in the capital and real estate markets and can involve financing, acquisition, restructuring, or development/formation of real estate assets, real estate operating companies (REOC), portfolios of real estate assets, public and private Real Estate Investment Trusts (REIT), and non-traditional property types. Most of the return is expected to be generated from capital appreciation as investments may be originated with minimal income in place. Some opportunistic investments may have a higher level of leverage than value investments, but others may have a low reliance on leverage.
- C. Special Situations. Strategies that do not fit either of the other subcomponents, but have non-core-like risk, including those that are primarily public or private commercial real estate debt, preferred, or hybrid strategies related to non-core real estate property or risk exposures. May also include combinations of the above subcomponents and strategies.

#### IV. SPECIFIC INVESTMENT GUIDELINES

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio:

- A. Allocation. Authorized ranges and targets for the subcomponents of the Portfolio are in the following table.

<b>Subcomponent</b>	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Value	30.0%	50.0%	70.0%
Opportunistic	30.0%	50.0%	70.0%
Special Situations	0.0%	0.0%	30.0%

- B. Leverage. Leverage is authorized within the Portfolio. Leverage shall be monitored against the following standards, recognizing that the standards are assessed against the composite of all members of the subcomponent and commingled vehicles utilized will primarily provide discretion to the general partners and managing members for individual vehicles' leverage levels.

<b>Subcomponent</b>	<b>Leverage Monitoring Standard</b>
Value	60.0%
Opportunistic	75.0%
Special Situations	50.0%

- C. Diversification. The Portfolio is not expected to be highly diversified, but certain exposures shall be monitored to ensure reasonable diversification: property sectors, geographic allocations (i.e., U.S. regions, and non-U.S.), and stages of the land, development, operating/stabilized, restructure/rehabilitate, and redevelopment lifecycle. Each of the foregoing has materially different risks and returns over the market and economic cycle.

#### V. PERFORMANCE & REPORTING GUIDELINES

The Portfolio's benchmark is a custom index, net of all fees and expenses, comprised of the following Burgiss Group Private iQ indices: 80% U.S. Non-Core Real Estate (Opportunistic and Value-Added) and 20% Non-U.S. Non-Core Real Estate (Opportunistic and Value-Added).. In addition, the performance of investments may be measured relative to the performance of investment managers employing similar investment strategies, using data provided by reputable sources. On 10 year and longer-term basis, the Portfolio's performance will be compared to a risk- and domicile-adjusted private equity core real estate equivalent benchmark to assess the opportunity cost of the Portfolio versus core real estate investments.



## **OPPORTUNISTIC FIXED INCOME PORTFOLIO**

### **I. INTRODUCTION**

The Opportunistic Fixed Income Portfolio (“Portfolio”) invests through external investment managers in a broadly diversified mix of non-investment grade or unrated obligations, debt securities and asset-backed securities including, but not limited to bank loans, high yield, mortgage-backed securities, convertibles, whole loans, mezzanine debt, credit default swaps, collateralized debt obligations, and sovereign debt. Investment managers will primarily invest in assets that are not authorized for the Investment Grade Fixed Income Portfolio and not for the purpose of investing in or owning real estate or related debt financing, excluding asset-backed financing.

### **II. INVESTMENT OBJECTIVES**

The Fund is investing in opportunistic fixed income to accomplish the following objectives:

- A. Attractive absolute returns. Long-term returns that are competitive with long-term public equities, after consideration of lower downside risk, due to opportunistic investments, longer duration private investments, restructurings, leverage, hedging, and trading skill.
- B. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- C. Diversification. Enhance the diversification of the Fund relative to public equity and investment grade fixed income.
- D. Capital Preservation. Protect capital through credit-oriented investments and trading strategies that are designed to minimize downside risk.
- E. Deflation Protection. The structure of certain fixed income assets may provide protection against the detrimental effects of deflation.

### **III. INVESTMENT STRUCTURE**

The Portfolio will have four major subcomponents:

- A. Traditional Corporate Credit. Strategies that invest in high yield bonds and bank loans.
- B. Distressed Debt. Predominantly strategies that trade distressed debt, but occasionally actively participate in restructurings and seek control post-reorganization of target issuers. These strategies may have equity exposure.
- C. Hedged Fixed Income. Includes hedged implementations of market neutral strategies, relative value strategies, and multi-strategy (i.e., predominantly fixed income) utilizing non-investment grade instruments.
- D. Special Situations. Includes mezzanine, direct lending, and structured credit. The latter can include mortgage- and other asset-backed securities and financings.

#### IV. SPECIFIC INVESTMENT GUIDELINES

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

- A. Allocation. Authorized ranges and targets for the subcomponents of the Portfolio are in the following table.

<b>Subcomponents</b>	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Traditional Corporate Credit	0.0%	15.0%	50.0%
Distressed Credit	0.0%	25.0%	50.0%
Hedged Fixed Income	0.0%	45.0%	75.0%
Special Situations	0.0%	15.0%	75.0%

- B. Duration. Longer duration fixed rate investments may be affected by interest rate movements. The Portfolio will diversify among various types of investments to reduce duration risk.
- C. Diversification. The opportunistic nature of the Portfolio may lead to concentrated and illiquid risk exposures from time to time. To mitigate this potential concentration, IMD will attempt to diversify the portfolio among various vehicles based on their liquidity structures and between income- and appreciation-based investments and strategies.
- D. Leverage. Leverage is authorized within the Portfolio, but must be regularly monitored to determine the reasonableness in the context of investment strategy. IMD acknowledges that vehicles utilized will primarily provide discretion to the general partners and managing members for individual vehicles' leverage levels.

#### V. PERFORMANCE & REPORTING GUIDELINES

The Portfolio's custom benchmark is comprised of 50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% Merrill Lynch High Yield Index. In addition, the performance of investments may be measured relative to the performance of investment managers employing similar investment strategies, using data provided by relevant, reputable sources. On 10 year and longer-term basis, the Portfolio's performance will be compared to a risk- and domicile-adjusted public market equivalent benchmark to assess the opportunity cost of the Portfolio versus the public high yield markets.

## **INFLATION SENSITIVE PORTFOLIO**

### **I. INTRODUCTION**

The Inflation Sensitive Portfolio (“Portfolio”) invests primarily in a highly diversified mix of assets including commodities-related instruments, Treasury Inflation Protected Securities (“TIPS”), non-U.S. inflation linked bonds, real assets, natural resources equity and debt, infrastructure, floating rate debt securities, and other investments whose primary purpose is providing protection against risks associated with inflation. Internally- and externally-managed portfolios of investments may be utilized with externally managed portfolios including active long-only managers, hedged strategies, and closed-end funds.

### **II. INVESTMENT OBJECTIVES**

The Fund is investing in inflation sensitive assets to accomplish the following objectives:

- A. Inflation protection. Provide some degree of protection against the risks associated with inflation.
- B. Attractive absolute returns. Provide an attractive return over the long-term by making investments that provide a nominal total return that rises with inflation.
- C. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- D. Diversification. Enhance the diversification of the Fund’s total investment portfolio relative to public equity and nominal fixed income.
- E. Liquidity. Provide a source of liquidity to the Fund when other Portfolios are experiencing lower returns due to unanticipated inflation.

### **III. INVESTMENT STRUCTURE**

The Portfolio will have four major subcomponents:

- A. Inflation Linked Bonds. Strategies that invest in Treasury Inflation Protected Securities, non U.S. inflation linked bonds, or floating rate debt.
- B. Publicly Traded Natural Resources. Strategies that invest in commodity and natural resource public equity and public debt using long-only or hedged implementations.
- C. Private Natural Resources. Strategies making non-public market equity or debt investments in timberland, energy, agriculture, and other natural resources implementations.
- D. Other Real Assets and Diversifiers. Strategies including infrastructure, real assets (e.g., ships, airplanes, rail cars, mines, real estate, etc.), royalties, and combinations of any of this and the other subcomponents whose primary purpose is providing protection against risks associated with inflation.

### **IV. SPECIFIC INVESTMENT GUIDELINES**

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

- A. Allocation. Authorized ranges and targets for the subcomponents of the Portfolio are in the following table.

<b>Subcomponents</b>	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Inflation Linked Bonds	0.0%	33.0%	75.0%
Publicly Traded Natural Resources	0.0%	17.0%	50.0%
Private Natural Resources	0.0%	50.0%	75.0%
Other Real Assets and Diversifiers	0.0%	0.0%	50.0%

- B. Duration. Longer duration fixed rate investments may be affected by interest rate movements. The Portfolio will diversify among various types of investments to reduce duration risk.
- C. Diversification. To allow the Fund to raise liquidity from the Portfolio when inflation negatively impacts other Portfolios, IMD will attempt to diversify the portfolio among various vehicles based on their liquidity structures and between income- and appreciation-based investments and strategies.
- D. Leverage is authorized within the Portfolio, but must be regularly monitored to determine the reasonableness in the context of investment strategy. IMD acknowledges that certain vehicles utilized will primarily provide discretion to the general partners and managing members for individual vehicles' leverage levels.

## **V. PERFORMANCE & REPORTING GUIDELINES**

The Portfolio's custom benchmark consists of 33.0% Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index, 17% Dow Jones-UBS Commodities Index, and 50% of the dynamically weighted combination of the benchmarks of investments classified within Private Natural Resources or Other Real Assets and Diversifiers. For that 50% portion of the Portfolio's benchmark, industry standard benchmarks will be utilized for each specific strategies (e.g., Burgiss Group Private iQ Private Energy Index, NCREIF Timberland Index, etc.), but if such benchmarks do not exist for a specific strategy the benchmark shall be the BOAML 5 -10 Year US Inflation-Linked Treasury Index. In addition, the performance of investments may be measured relative to the performance of investment managers employing similar investment strategies and using data provided by relevant, reputable sources. On 10 year and longer-term basis, the Portfolio's performance will be compared to a blend of 60% Dow Jones-UBS Commodities Index and 40% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.

## **CORE REAL ESTATE PORTFOLIO**

### **I. INTRODUCTION**

The Core Real Estate Portfolio (“Portfolio”) invests in a diversified mix of predominantly U.S. domiciled equity and debt investments in core commercial real estate through external investment managers and vehicles. Equity interests may be direct undivided (i.e., wholly owned), or financed, ownership in real estate assets, joint ventures, operating companies, publicly traded entities and other private entities, including in pooled vehicles. Debt interests may be secured by first liens (i.e., mortgages or deeds of trust) on real property and other senior debt financing related to real estate, although not typically securities.

### **II. INVESTMENT OBJECTIVES**

The fund is investing in core real estate to accomplish the following objectives:

- A. Attractive absolute returns. Provide an attractive total return over the long term through a high cash yield relative to fixed income securities and the potential for returns from active asset management.
- B. Inflation Protection. Make real estate investments that are likely to provide a reasonable hedge against price inflation.
- C. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- D. Capital Preservation. Make real estate investments that are designed to preserve investment capital through structures that minimize downside risk and provide an acceptable level of current cash flows.
- E. Diversification. Use real estate to enhance the diversification of the Funds given the low return correlations historically of real estate with other asset classes (e.g., fixed income).

### **III. INVESTMENT STRUCTURE**

The Portfolio will have three major subcomponents:

- A. Private Equity Core Real Estate. Equity strategies that primarily invest in stabilized, institutional quality Class A or B commercial real estate properties in good to excellent condition, well located within their local and regional markets, and of high-quality design and construction. Occupancy in core properties is at market level, there is little upcoming tenant rollover, and the properties have a strong current income that constitute the majority of the expected total return. Leverage is generally 50% or below.
- B. Public Equity Real Estate Securities. Strategies that primarily make core-oriented investments in publicly traded equity securities such as real estate investment trusts (REIT) and real estate operating companies (REOC) using a long-only or hedged implementation.
- C. Special Situations. Strategies that do not fit either of the other subcomponents, but have core-like risk, including those that are primarily public or private commercial senior real estate debt, preferred, or hybrid strategies related to core real estate property or risk exposures. May also include combinations of the above subcomponents and strategies.

#### IV. SPECIFIC INVESTMENT GUIDELINES

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

- A. Allocation. Authorized ranges and targets for the subcomponents of the Portfolio are in the following table.

<b>Subcomponents</b>	<b>Minimum</b>	<b>Target</b>	<b>Maximum</b>
Private Equity Core Real Estate	50.0%	80.0%	90.0%
Public Equity Real Estate Securities	10.0%	20.0%	40.0%
Special Situations	0.0%	0.0%	30.0%

- A. Income and Appreciation Return Mix. The Portfolio will not be dependent on appreciation within the Private Equity Core subcomponent for total returns over the market cycle. Real Estate investment risk is categorized by the balance between income and appreciation expectations of each investment. The higher the income projected, the lower the risk.
- B. Geography. The Portfolio may invest in opportunities wherein the vehicle or strategy is domiciled in the U.S. and/or outside the U.S.; provided the management team has demonstrated ability to be successful in meeting the intended investment strategy objectives. The Private Equity Core subcomponent of the Portfolio will invest in various geographies to take advantage of relative value opportunities and diversify the portfolio. Diversification of that subcomponent will be monitored relative to the ODCE NCREIF Regional allocations +/- 15%.
- C. Sector. Property type diversification is one of the most important diversification features in terms of impact on returns. The property sectors have historically performed differently over the market and economic cycles and the Private Equity Core subcomponent of the Portfolio should be diversified by property sector. Diversification of that subcomponent will be monitored relative to the ODCE NCREIF property type allocations +/- 15%.
- D. Other diversification. The Public Equity subcomponent will be well diversified versus its public equity benchmark evidenced by moderate active risk over the market cycle. Other exposures shall be monitored to ensure reasonable diversification: major U.S. metropolitan markets, individual asset gross value in excess of \$150 million. Each of the foregoing has materially different risks and returns over the market and economic cycle.
- E. Liquidity. Traditionally real estate is an illiquid asset class with the exception of investment structures such as public real estate securities and open-end fund vehicles that provide liquidity subject to queues. The Portfolio will diversify among the various liquidity vehicles but seeks to have at least 20% of the Portfolio in Level 1 liquid structures and 20% in Level 2 liquid structures.
- F. Leverage. Leverage is authorized for the Portfolio. Leverage shall be monitored against standards in the following table, recognizing that the standards are assessed against the composite of all members of the subcomponent and that commingled vehicles utilized will primarily provide discretion to the general partners and managing members for individual vehicles' leverage levels.

<b>Subcomponent and Vehicle Type</b>	<b>Leverage Monitoring Standard</b>
Private Equity Core, Pooled Vehicles	40.0%
Private Equity Core, Separate Accounts	40.0%
Public Equity Real Estate (i.e., underlying REITS)	50.0%

- G. Separate Account Investments. Over time, the Portfolio will endeavor to systematically increase the share of the Private Equity Core subcomponent invested through separate accounts to improve investor control and cost-effectiveness, although not to the exclusion of compelling “club deals” and coinvestments that arise from time to time. The allocation to Separate Accounts shall be at least annually compared against a 60% monitoring standard.

<b>Investment Vehicle</b>	<b>Investor Control</b>
Commingled Funds	Passive
Separate Accounts	Investor Control

## **V. PERFORMANCE & REPORTING GUIDELINES**

The Real Estate Portfolio’s custom benchmark is static-weighted. It is comprised of 80% weighting of the National Council of Real Estate Investment Fiduciaries Open-End Diversified Core Equity Fund Index (“NCREIF ODCE Index”), net of all fees and expenses, and 20% weighting of the Financial Times and London Stock Exchange (“FTSE”) European Public Real Estate Association (“EPRA”) and the National Association of Real Estate Investment Trusts (“NAREIT”) Global Index (“FTSA/EPRA/NAREIT Global Index”). In addition the performance of each investment may be measured relative to the performance of investment managers employing similar investment strategies and using data provided by relevant and reputable sources. On 10 year and longer-term basis, the Portfolio’s performance will be compared to a risk- and domicile-adjusted public market equivalent benchmark to assess the opportunity cost of the Portfolio versus the public REIT markets.

## **MULTI-STRATEGY PORTFOLIO**

### **VI. INTRODUCTION**

The Multi-Strategy Portfolio (“Portfolio”) invests in externally managed vehicles that have the flexibility to invest across markets, asset classes, commodities, and currencies, including hedging. Strategies may include opportunistic, event-driven, and relative value multi-strategy, global macro, rebalancing, tail hedging and overlays.

### **VII. INVESTMENT OBJECTIVES**

The Fund is investing in multi-strategy vehicles to accomplish the following objectives:

- A. Attractive absolute returns. Provide efficient compounding of capital through trading and market-timing skill, including hedging individual securities and commodities and exploiting market dislocations through opportunistic allocations.
- B. Competitive relative returns. Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters.
- C. Diversification. To increase investment flexibility across different asset categories and strategies, including during episodes of heightened macroeconomic risk and systemic risk, and to facilitate hedging of Fund-level risks, as might be prudent, from time to time.

### **VIII. INVESTMENT STRUCTURE**

The Portfolio will have no subcomponents.

### **IX. SPECIFIC INVESTMENT GUIDELINES**

In addition to the general guidelines and other requirements of this Policy, the following specific guidelines apply to the Portfolio.

- A. Diversification. To allow the Fund to raise liquidity from the Portfolio when other markets are volatile, IMD will attempt to diversify the portfolio among various vehicles based on their liquidity structures and between income- and appreciation-based investments and strategies.
- B. Leverage is authorized within the Portfolio, but must be regularly monitored to determine the reasonableness in the context of investment strategy. IMD acknowledges that certain vehicles utilized will primarily provide discretion to the general partners and managing members for individual vehicles’ leverage levels.

### **X. PERFORMANCE & REPORTING GUIDELINES**

A custom index comprised of a dynamically weighted combination of the HFRX Multi-Strategy Hedge Fund Index, net of fees, and the market value weighted benchmarks for any other total fund strategies within the Portfolio. In addition, the performance of investments may be measured relative to the performance of investment managers employing similar investment strategies, using data provided by relevant and reputable sources.



## APPENDIX 3: STATUTORY COMPLIANCE PROCEDURES

### I. STATUTORY MINIMUM AND MAXIMUM ALLOCATIONS.

Section 147-69.2(b) of the North Carolina General Statutes requires that the Fund be managed consistent with minimum and maximum percentages for certain classifications of investments. Table A3-1 summarizes these statutory requirements.

**Table A3-1: Statutory Minimum and Maximum Allocations**

	Statutory Citation	Minimum or Maximum Percentage of Fund
1	NCGS §§ 147-69.1(c) and 147-69.2(b)(1)-(6b)	At least 20%
2	NCGS § 147-69.2(b)(8)	No more than 65%
3	NCGS § 147-69.2(b)(8)(b.)	No more than 8.5%
4	NCGS § 147-69.2(b)(6c)	No more than 7.5%
5	NCGS § 147-69.2(b)(7)	No more than 10%
6	NCGS § 147-69.2(b)(9)	No more than 8.75%
7	NCGS § 147-69.2(b)(9a)	No more than 7.5%
8	NCGS § 147-69.2(b)(10a) for the 35% aggregate portfolio limit	The sum of rows 3 to 7; No more than 35%

Effective August 23, 2013, as amended by N.C. Session Law 2013-398.

Pursuant to the Chief Investment Officer's August 13, 2013 letter to the General Assembly, in the event of any perceived ambiguity in the statute, the lowest and most restrictive limits specified in the statute will apply. These limits are set out above in Table A3-1.

### II. STATUTORY INVESTMENT CLASSIFICATIONS AND INVESTMENT POLICY STATEMENT PORTFOLIO DEFINITIONS

The General Statutes' limits, summarized in Table A3-1, utilize a series of broad classifications. The Portfolios described in this Policy will in most cases be sub-divisions of the broad investment classifications described in the General Statutes, but may contain investments from multiple General Statute classifications. Table A3-2, below, compares the General Statutes classifications to the Portfolio definitions found in the Investment Policy Statement.

**Table A3-2: Comparison between Statutory Classifications and Investment Policy Statement Portfolios**

Investment Policy Statement Portfolios	Relevant Subsection of General Statutes
Investment Grade Fixed Income	NCGS §§ 147-69.1(c), 147-69.2(b)(1)-(6b)
Cash	NCGS § 147-69.1(c)
Public Equity (Long-Only Subcomponent)	NCGS § 147-69.2(b)(8)(a),(c.)
Public Equity (Hedged Equity Subcomponent)	NCGS § 147-69.2(b)(8)(b.)
Private Equity	NCGS § 147-69.2(b)(9)
Non-Core Real Estate	NCGS § 147-69.2(b)(7) <b>OR</b> NCGS § 147-69.2(b)(8)(a),(c.)
Opportunistic Fixed Income	NCGS § 147-69.2(b)(6c)
Inflation Sensitive	NCGS § 147-69.2(b)(9a)
Core Real Estate	NCGS § 147-69.2(b)(7) <b>OR</b> NCGS § 147-69.2(b)(8)(a),(c.)
Multi-Strategy	NCGS § 147-69.2(b)(9) <b>OR</b> NCGS § 147-69.2(b)(8)(b.)

### III. STATUTORY COMPLIANCE MONITORING

A. Investments' Statutory Classification. To ensure ongoing compliance, classification of new investments for these purposes will be determined through investment and legal analysis prior to executing any related contract. In the investment recommendation memorandum, statutory compliance will be addressed, including a pro forma analysis of projected cash flows for the recommended investment and existing Portfolios' investments. Within 60 days of the end of each fiscal year following the effective date of this Policy, IMD will prepare for the Treasurer's approval a certification of the statutory classification for all outstanding investments.

B. Ongoing Monitoring. Compliance with the requirements and limitations of NCGS § 147-69.2, including maximum and minimum allocations to certain statutory classifications of investments, will be monitored by IMD on an ongoing basis, and IMD will prepare a quarterly report for review by the Treasurer within 45 days of the end of each fiscal quarter. As required by NCGS § 147-69.2(b), for purposes of computing market values for the statutory percentage limitations, all investments shall be valued as of the last date of the most recent fiscal quarter.

C. Prohibition on New Investments If Outside Statutory Limits. IMD may not recommend to the Treasurer any investment or commitment to an investment vehicle, if such investment or commitment would reasonably cause the Fund to violate any statutory classification limit or other statutory requirement as summarized in Table A3-1.

D. Managing Existing Investments If Investments Fall Outside Statutory Authorizations and Limits. As provided by NCGS § 147-69.2(b), the Treasurer has discretion to manage existing investments should events occur that create non-compliance with statutory requirements after an authorized investment is made.<sup>4</sup> On a monthly basis, all such instances of non-compliance will be reported to the Treasurer and, at least annually, IMD will recommend an action plan to the Treasurer to address the non-compliance.

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<sup>4</sup> NCGS § 147-69.2(b) states, in part: "If an investment was authorized by this subsection at the time the investment was made or contractually committed to be made, then that investment shall continue to be authorized by this subsection, and none of the percentage or other limitation on investments set forth in this subsection shall be construed to require the State Treasurer to subsequently dispose of the investment or fail to honor any contractual commitments as a result of changes in market values, ratings, or other investment qualifications."

## GLOSSARY

**Absolute:** can refer to the performance or volatility of an investment and is measured on a standalone basis

**Beta:** systematic risk, of a security, portfolio, or Fund measured relative to a market or risk factors

**Ex-Ante:** expected returns or expected volatility

**Ex-Post:** realized returns or realized volatility

**Information Ratio:** a risk-adjusted return that is measured by dividing active return (i.e., portfolio return – benchmark return) by the tracking error

**Relative:** the performance or volatility of an investment measured versus a stated benchmark or reference portfolio

**Sharpe Ratio:** a risk-adjusted return that is measured by dividing investment return less the risk free rate by the standard deviation of the investment

**Tracking Error or Active Risk:** the standard deviation of relative returns (portfolio returns – benchmark returns) over some period

APPROVAL

Approved by State Treasurer Janet Cowell on



## REVISION HISTORY

Version/Revision	Date Approved	Description of Changes
1.0	November 26, 2012	Initial version
2.0	July 1, 2014	Revision and Restatement