

Service

Expertise

Integrity

Investment Program Solutions

Fiduciary Approach to Outsourcing
of Multi-Employer Plan Management

Prepared for

FELRA and UFCW Pension Fund

Mid Atlantic Fund

November 1, 2012



Northern Trust

northerntrust.com



Northern Trust

Look Ahead With Us

Investment Policy Statement

Plan Specific Analysis

- Asset Allocation
 - *FELRA and UFCW Pension Fund*
 - *Mid Atlantic Pension Fund*
 - Implementation
 - *FELRA and UFCW Pension Fund*
 - *Mid Atlantic Pension Fund*
 - Fees
-

Appendix I: Asset Class Assumptions



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Investment Policy Statement





General Comments

- Fundamentally sound investment policy
- Items for further review throughout IPS
 - *Broader language to include a variety of risk metrics*
 - *Inclusion of references on liquidity and income objectives to reflect cash flow needs*
 - *Investment vehicle statements to align with underlying investments of the Plan*
 - *Prohibited investments and derivatives policy to more accurately reflect the underlying investments of the various investment managers*





Investment Policy Statement

FELRA and UFCW Comments

The Investment Policy Statement provides a road map for the Plan, Trustees and Investment Consultant.

- Section 2, 2. Statement of Goals of the Fund
 - *Current Language: Minimize the need to liquidate long-term investment under adverse circumstances.*
 - **Suggestion: Manage the long term investments of the Fund to meet the projected cash flows. Attention will be paid to short and long term cash flow needs, with special focus on investment portfolio yield, lock-ups, penalties, etc.**

- Section 5, D. Commingled Funds
 - *Current Language: The Trustees...may, from time to time, elect to invest in such funds.*
 - **Suggestion: The Fund will invest in commingled investment funds in order to achieve specific asset class exposures in line with the investment goals of the Fund.**





Investment Policy Statement

FELRA and UFCW Comments – Cont'd

- Section 5, K.
 - *Suggestion: The entirety of this section should be reviewed to accurately reflect the investment options for all asset classes in which the Fund intends to invest. Specific note should be paid to investments options available to GTAA, Private Real Estate, Private Equity and Hedge Fund managers.*

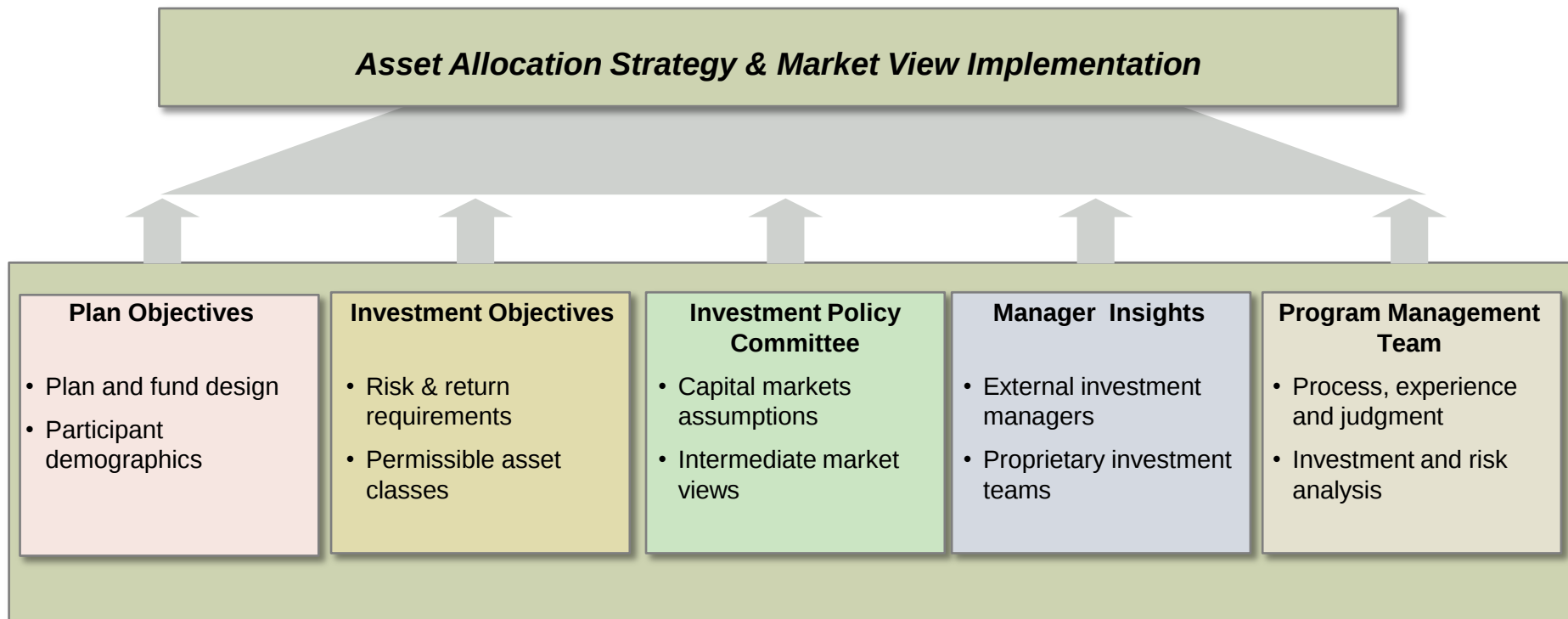
- Appendix A, 'Asset Allocation'
 - *Current Language: Nevertheless, there will likely be circumstances from time to time, where interim rebalancing is desirable, based on recommendations from the investment consultants. In such cases, the Trustees will consider the merits of interim rebalancing compared to delaying the action until the annual review*
 - **Suggestion: Within the 'Permissible Ranges' specified in Appendix A, the Investment Consultant shall monitor and evaluate the plan and investments versus target and seek to rebalance as appropriate based on market conditions, transaction costs and plan circumstances. The Investment Consultant shall include in the quarterly report to the Trustees detail as to the monthly rebalancing. Any investment activity which would exceed the 'Permissible Ranges' will be highlighted to the Trustees for evaluation prior to engaging in any rebalancing activities.**





Investment Strategy, Implementation and Oversight

Our integrated process leverages multiple sources of investment insights to develop customized investment programs.



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Asset Allocation

FELRA and UFCW Pension Fund



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UFCW FELRA Pension

Investment Strategy

Status

Frozen at end of 2012, approximately 50% funded

Goal

Extend life through anticipated solvency date

Net Cash Flow

Significant net outflows with benefit payments almost three times larger than expected contributions

Liquidity

Significant concern: BPs 25% of asset value with BPs expected to be over 50% of asset value by 2018

PBGC

PBGC put option

Emphasis on generating growth in principle with attention to yield

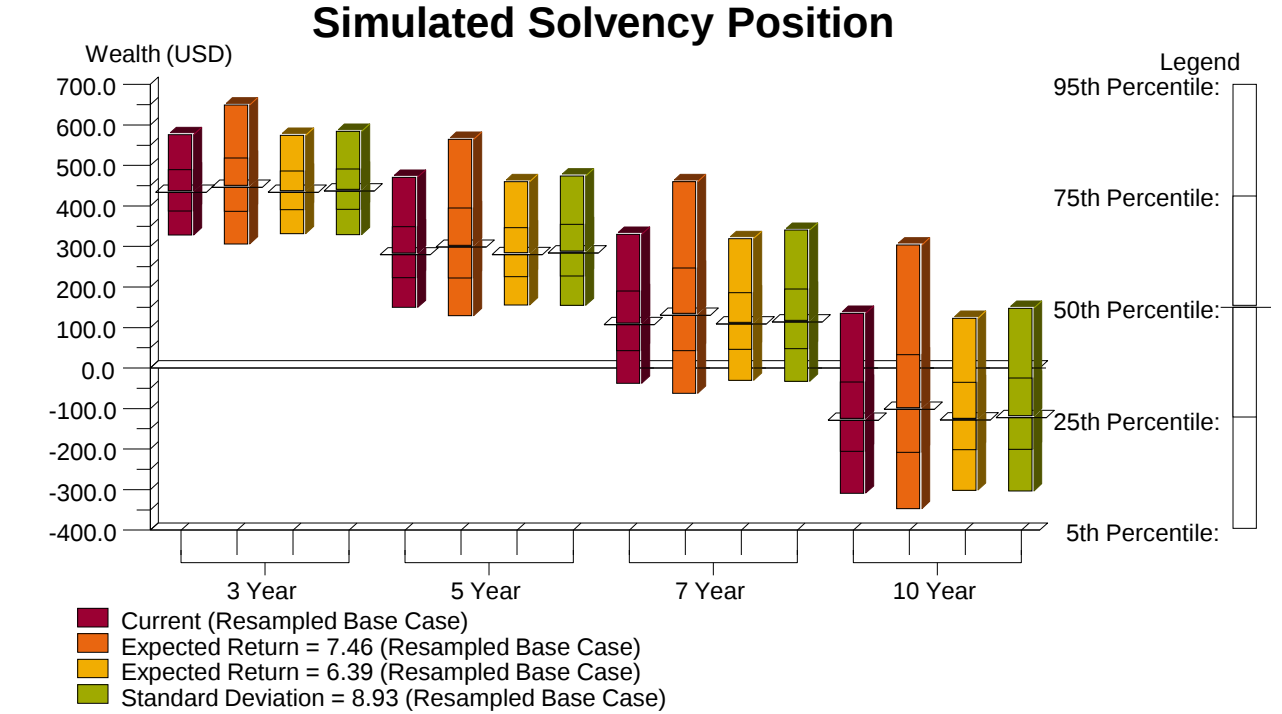
Asset allocation significantly influenced by sequence of portfolio returns during early years

Invest in asset classes anticipated to provide a combination of capital appreciation and yield

Avoid illiquid investments to maximize liquidity and avoid sale of long term investments to support benefit payments

Anticipate adding risk to portfolio in the event of severe principle loss during early years





Wealth Percentiles	3 Years				5 Years				7 Years				10 Years			
	Current	7.5% ER	6.4% ER	8.9% SD	Current	7.5% ER	6.4% ER	8.9% SD	Current	7.5% ER	6.4% ER	8.9% SD	Current	7.5% ER	6.4% ER	8.9% SD
95th Percentile	576	649	574	586	471	564	460	476	331	460	320	343	135	304	123	151
75th Percentile	490	519	487	492	349	395	346	355	190	247	186	197	-34	34	-35	-23
50th Percentile	434	446	434	437	280	298	280	285	107	130	109	114	-129	-102	-129	-121
25th Percentile	383	382	387	388	219	218	222	223	39	38	42	44	-210	-213	-206	-205
5th Percentile	324	302	327	325	145	125	151	150	-42	-67	-35	-38	-313	-352	-306	-308

Solvency Probability				
	2015	2018	2021	2024
Current	100	100	28	19
6.4% ER	100	100	27	18
8.9% SD	100	100	30	20
7.5% ER	100	98	38	30



Asset Allocation Analysis

FELRA & UFCW Pension Fund

Asset allocation optimization process incorporates a multi-dimensional view of risk including volatility, downside volatility and “tail risk”

Asset Class	Index Proxy	Current	Same Return	Same Risk	Max ER
Fixed Income		14.0	23.5	23.5	24.0
U.S. Core Fixed Income	Barclays U.S. Aggregate	10.0	15.5	10.5	5.0
U.S. High Yield Fixed Income	Barclays U.S. High Yield	4.0	5.0	7.0	10.0
Emerging Markets Fixed Income	Barclays EM Local Currency	-	3.0	6.0	9.0
Equities		32.0	25.5	26.0	42.0
U.S. Equity	Russell 3000	23.0	12.0	12.0	19.0
Developed ex-U.S. Equity	MSCI World ex-U.S.	9.0	8.0	8.0	13.0
Emerging Markets Equity	MSCI Emerging Markets	-	5.5	6.0	10.0
Real Assets		10.0	19.5	19.0	20.0
Global Listed Real Estate	EPRA/NAREIT Index	-	-	1.0	5.0
Global Listed Infrastructure	S&P Global Infrastructure	-	10.5	10.0	15.0
Direct Real Estate	NCREIF Index	10.0	9.0	8.0	-
Alternatives		44.0	31.5	31.5	14.0
GTAA	* See note	35.0	20.0	20.0	10.0
Hedge Funds - Fund of Funds	HFRI Fund of Funds Index	9.0	11.5	11.5	4.0
Total		100.0	100.0	100.0	100.0
Expected Return		6.39	6.39	6.62	7.46
Standard Deviation		8.93	8.52	8.93	11.60
Efficiency Ratio		0.72	0.75	0.74	0.64

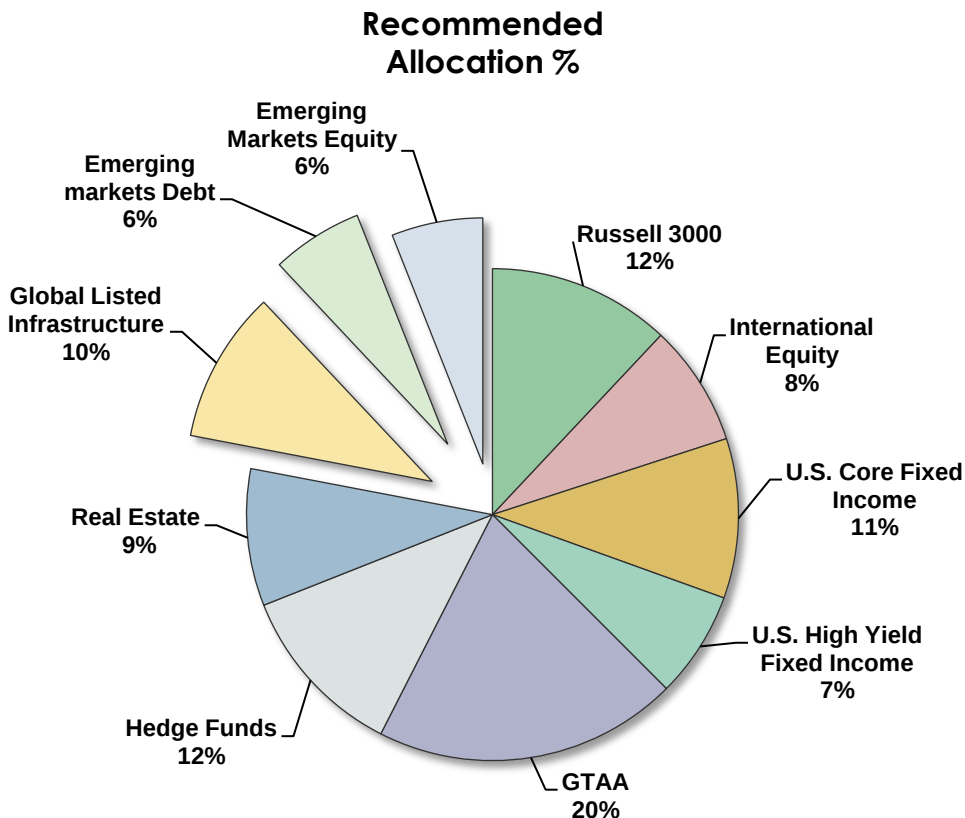
Source: Morningstar Encorr, Risk Metrics, Northern Trust Investment Policy Committee



Recommended Asset Allocation

FELRA & UFCW Pension Fund

- Potential custom portfolio strategy leveraging Northern Trust's capabilities, expertise, and experience
 - Target 8% expected return
 - Attention to total and downside risk



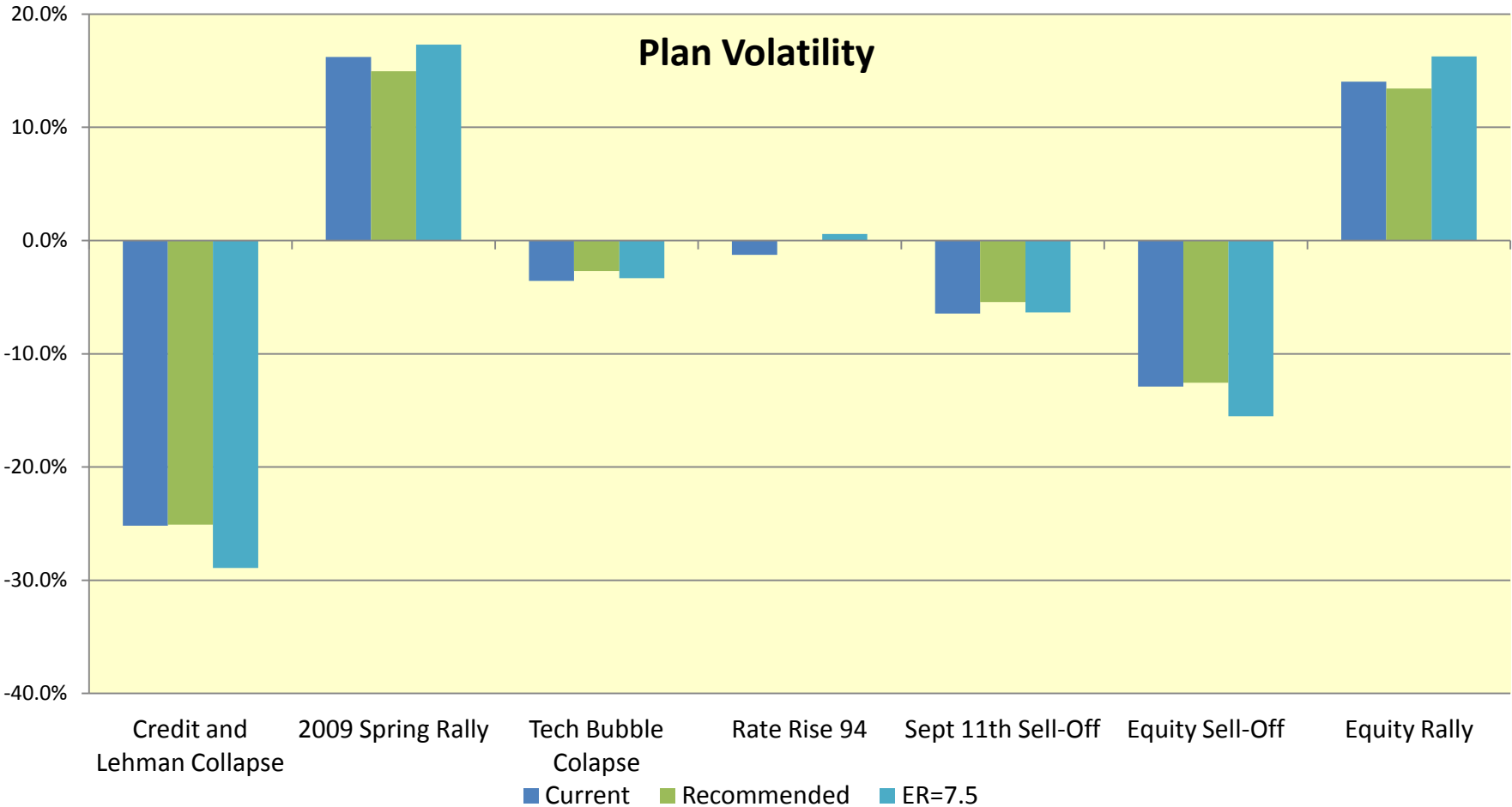
Expected Long-Term Portfolio Characteristics	Risk/Return Forecast
Expected Return	6.6%
Expected Risk (Standard Deviation)	8.9%
Efficiency Ratio	0.74
Conditional VaR	10.4
C VaR Efficiency Ratio	0.6
Downside Risk	6.2
DR Efficiency Ratio	1.1



Recommended Asset Allocation Stress Testing

FELRA & UFCW Pension Fund

- The recommended allocation exhibits less volatility and improvements in downside protection
 - Mitigating losses by 1% preserves approximately \$20 million of assets



Source: MSCI RiskMetrics, MSCI BarraOne, Merrill Lynch

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Asset Allocation

Mid Atlantic Pension Fund



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Pension Investment Strategy

Mid Atlantic Fund

Mid-Atlantic Pension

Investment Strategy

Status

Begins 1/1/2013 with no assets and no liabilities. Normal Cost about \$5-6 M per year

Goal

Indefinite sustainability

Net Cash Flow

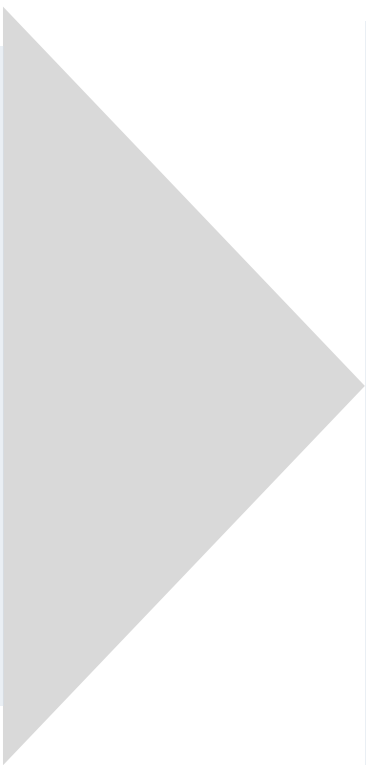
Expected positive for 10 years, then about neutral for 10 years, then negative 2036 and beyond

Liquidity

Contributions expected to outpace benefit payments until 2024

PBGC

PBGC backstop as last resort



Emphasis on generating sustainable growth

Asset allocation structure designed to weather shifting market regimes

Invest in asset classes anticipated to provide a combination of capital appreciation and yield with increasing yield emphasis in 2024

Ability to allocate to illiquid investments to generate incremental returns and diversify portfolio risk

Risk profile evolution contingent on intersection of return sequence and cash flow patterns

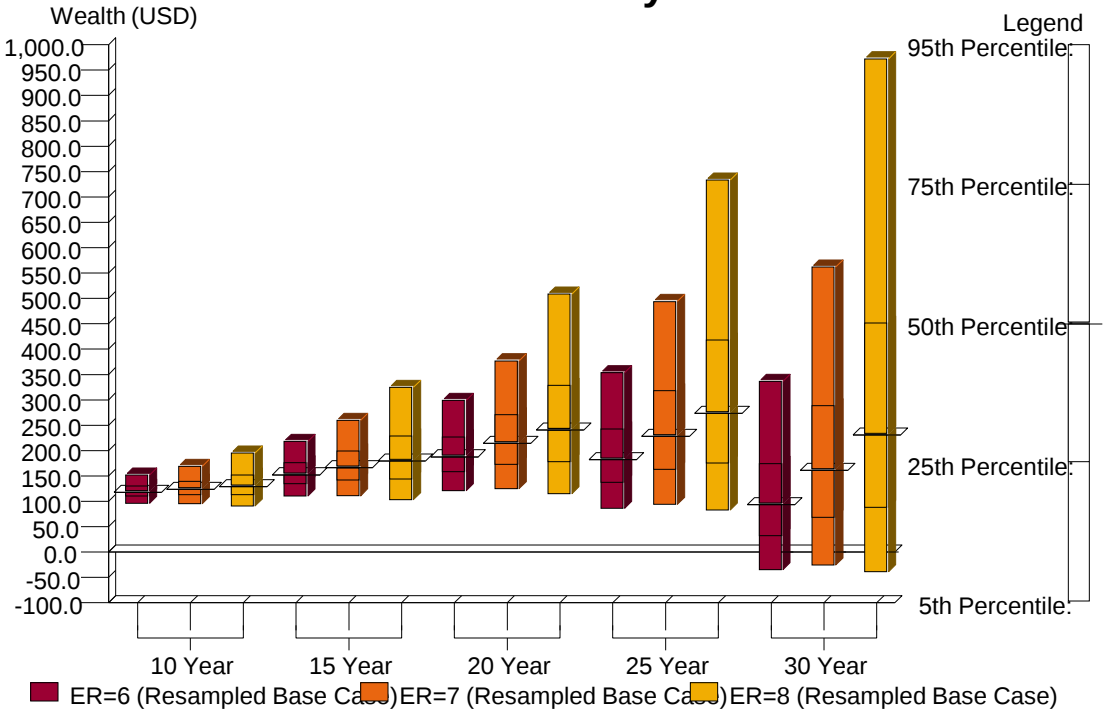




Simulated Solvency Position

Mid Atlantic Fund

Simulated Solvency Position



Wealth Percentiles	10 Years			15 Years			20 Years			25 Years			30 Years		
	6% ER	7% ER	8% ER	6% ER	7% ER	8% ER	6% ER	7% ER	8% ER	6% ER	7% ER	8% ER	6% ER	7% ER	8% ER
95th Percentile	152	169	195	218	260	325	299	377	509	354	494	734	337	562	972
75th Percentile	130	140	152	176	200	229	227	271	329	243	318	418	175	289	451
50th Percentile	118	124	129	152	166	180	188	215	241	182	228	273	93	161	231
25th Percentile	107	110	110	131	138	141	155	170	175	134	160	172	29	65	85
5th Percentile	93	92	87	107	108	100	118	122	112	83	91	79	-38	-29	-42

Solvency Probability					
	2023	2028	2033	2038	2043
ER=6	100	100	100	100	85
ER=7	100	100	100	100	91
ER=8	100	100	100	100	90

Asset Allocation Alternatives

Mid Atlantic Pension Fund

Asset allocation optimization process incorporates a multi-dimensional view of risk including volatility, downside volatility and “tail risk”

Asset Class	Index Proxy	ER=6	ER=7	ER=8
Cash (includes foreign)	Citi Treasury 3 Month T-bill	-	-	-
Fixed Income		41.0	28.5	20.0
U.S. Core Fixed Income	Barclays U.S. Aggregate	27.0	12.5	5.0
U.S. High Yield Fixed Income	Barclays U.S. High Yield	7.0	8.0	10.0
Emerging Markets Fixed Income	Barclays EM Local Currency	7.0	8.0	5.0
Equities		20.5	21.0	30.5
U.S. Equity	Russell 3000	9.0	9.0	12.5
Non-U.S. Equity	MSCI World ex-U.S.	6.0	6.0	8.0
Emerging Markets Equity	MSCI Emerging Markets	5.5	6.0	10.0
Real Assets		14.5	23.5	29.5
Global Listed Real Estate	EPRA/NAREIT Index	-	2.5	15.0
Global Listed Infrastructure	S&P Global Infrastructure	5.5	12.0	14.5
Direct Real Estate	NCREIF Index	9.0	9.0	-
Alternatives		24.0	27.0	20.0
GTAA	* See note	10.0	12.0	10.0
Hedge Funds - Fund of Funds	HFRI Fund of Funds Index	8.0	7.0	-
Private Equity	Venture Econ. Pooled Avg.	6.0	8.0	10.0
Total		100.0	100.0	100.0
Expected Return		6.0	7.0	8.0
Standard Deviation		7.3	9.1	12.3
Efficiency Ratio		0.8	0.8	0.7

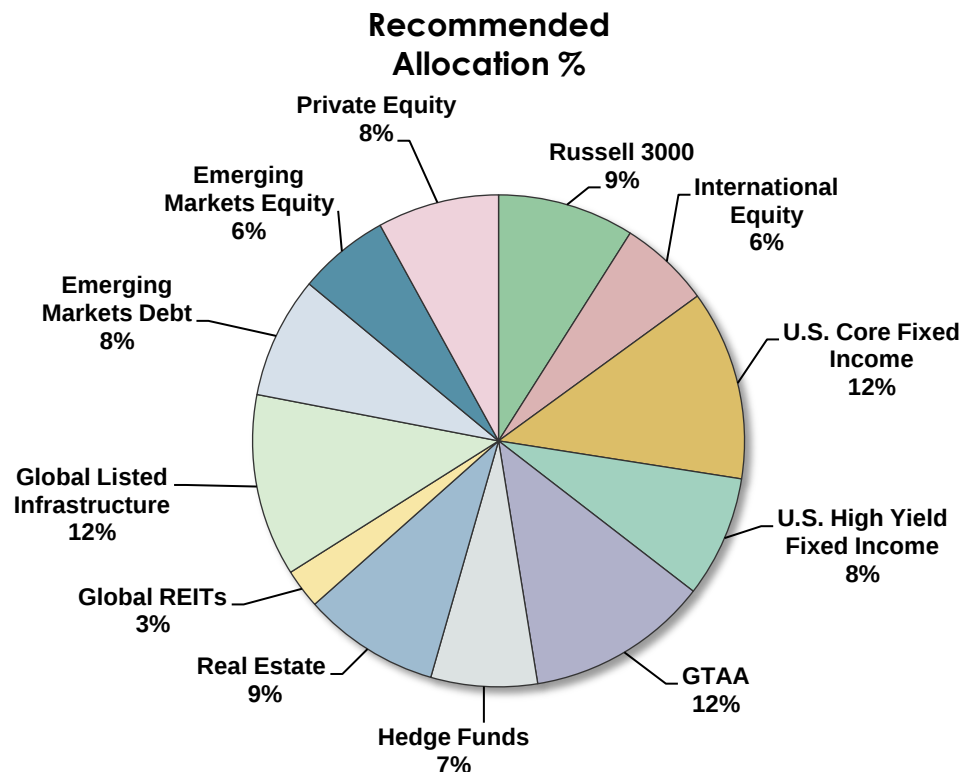
* 50% MSCI ACWI, 40% Barclays Global Aggregate, 10% Morningstar Glb. Upstream Nat. Resources used as a proxy



Recommended Asset Allocation

Mid Atlantic Pension Fund

- Potential custom portfolio strategy leveraging Northern Trust's capabilities, expertise, and experience
 - Target 8% expected return
 - Attention to total and downside risk



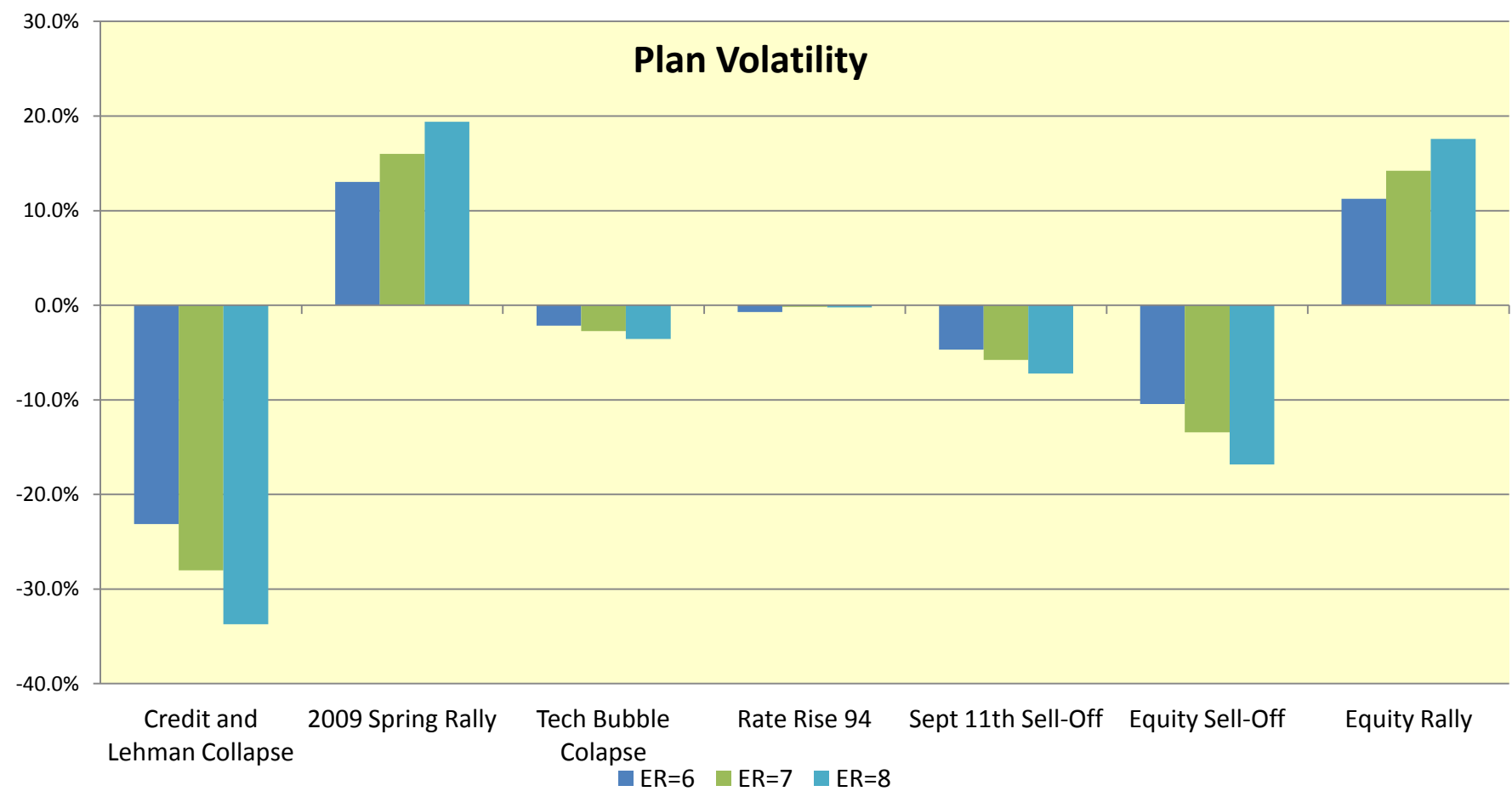
Expected Long-Term Portfolio Characteristics	Risk/Return Forecast
Expected Return	7.0%
Expected Risk (Standard Deviation)	9.1%
Efficiency Ratio	0.8
Conditional VaR	9.9
Efficiency Ratio	0.7
Downside Risk (MAR=0)	5.9
Efficiency Ratio	1.2



Recommended Asset Allocation Stress Testing

Mid Atlantic Pension Fund

- As expected, the scenarios exhibit increasing levels of volatility in 'stressed' markets as expected return increases.



Source: MSCI RiskMetrics, MSCI BarraOne, Merrill Lynch

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Plan Implementation

FELRA & UFCW Pension Fund



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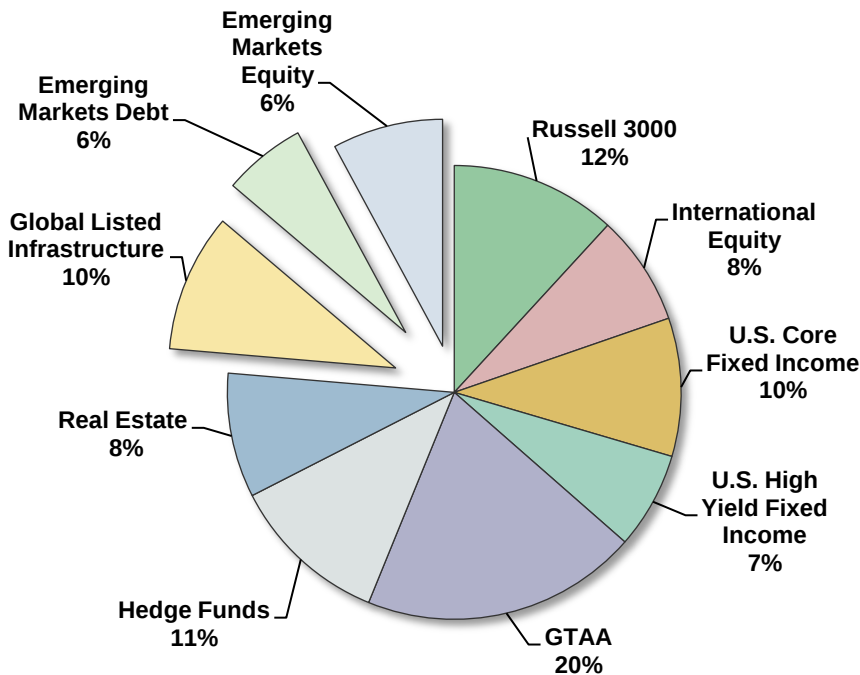
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Recommended Asset Allocation

FELRA & UFCW Pension Fund

Recommended Asset Allocation %

Expected Return 6.6%
Standard Deviation 8.9
Efficiency Ratio 0.74



Asset Class	Investment Manager	Weight (%)
US Equity – Large Cap	Russell 1000 Index Fund	5%
US Equity – Large Cap	NWQ	1.5%
US Equity – Large Cap	Intech	1.5%
US Equity – Small Cap	Multi-Manager Small Cap Fund	4%
International Equity	William Blair	4%
International Equity	Gryphon	4%
Emerging Markets Equity	Multi-Manager Emerging Markets Equity Fund	6%
Private Real Estate	JP Morgan	9%
Global Listed Infrastructure	Multi-Manager Global Listed Infrastructure Fund	10%
GTAA	Wellington Opportunistic	5%
GTAA	Putnam Total Return	4%
GTAA	AQR Global Risk Premium	4%
GTAA	Windhaven Diversified Growth	7%
Hedge Funds	Custom Hedge Fund Solution 7-10 Underlying Managers	12%
U.S. Core Fixed Income	Barclays Agg Bond Index Fund	6%
U.S. Core Fixed Income	IRM	2%
U.S. Core Fixed Income	SBH	2%
U.S. High Yield	Lazard	3%
U.S. High Yield	DDJ	4%
Emerging Markets Debt	Multi-Manager Emerging Markets Debt Fund	6%

Source: Northern Trust





Program Implementation

FELRA & UFCW Pension Fund

Asset Class	Investment Manager	Active/ Passive	Vehicle	New /Retained
US Equity – Large Cap	Russell 1000 Index Fund	Passive	Commingled	New
US Equity – Large Cap	Intech	Active	Separate Account	Retained
US Equity – Large Cap	NWQ	Active	Separate Account	Retained
US Equity – Small Cap	Multi-Manager Small Cap Fund Cortina Oppenheimer Capital Fort Washington Riverbridge Keeley Cardinal Lombardia Rutabaga	Active	Commingled	New
International Equity	William Blair	Active	Separate Account	New
International Equity	Gryphon	Active	Separate Account	Retained
Emerging Markets Equity	Multi-Manager Emerging Markets Equity Fund Axiom First State	Active	Commingled	New





Program Implementation

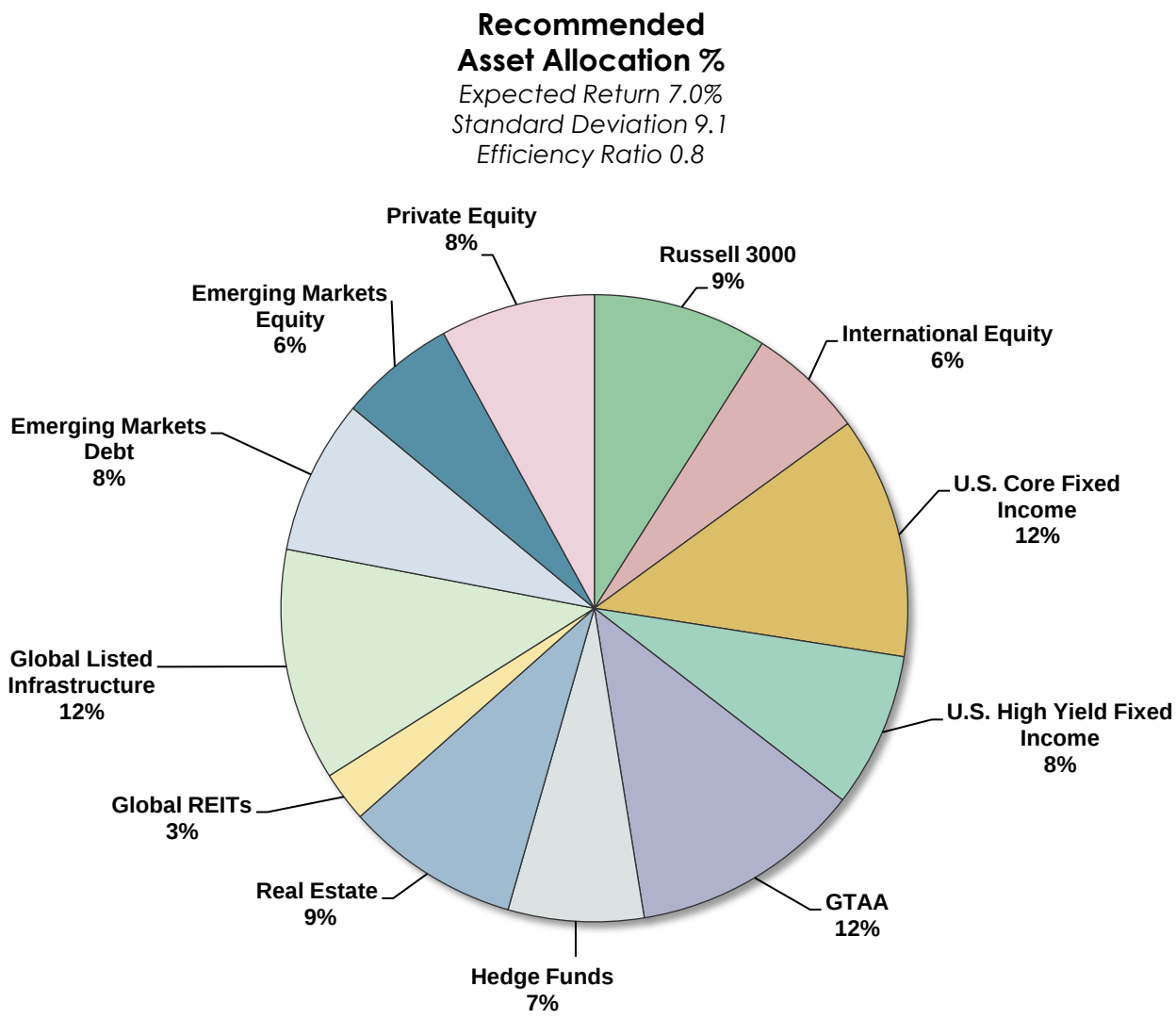
FELRA & UFCW Pension Fund Cont'd

Asset Class	Investment Manager	Active/ Passive	Vehicle	New/ Retained
Private Real Estate	JP Morgan	Active	Private Placement	Retained
Global Listed Infrastructure	Multi-Manager Global Listed Infrastructure Fund Brookfield Investment Management Macquarie Capital Investment Management	Active	Commingled	New
GTAA	Wellington Opportunistic	Active	Commingled	Retained
GTAA	Putnam Total Return	Active	Commingled	Retained
GTAA	AQR Global Risk Premium	Active	Commingled	Retained
GTAA	Windhaven Diversified Growth	Active	Commingled	Retained
Hedge Funds	Custom Hedge Fund Solution 7-10 Underlying Managers	Active	Private Placement	New
U.S. Core Fixed Income	Barclays Agg Bond Index Fund	Passive	Commingled	New
U.S. Core Fixed Income	IRM	Active	Separate Account	Retained
U.S. Core Fixed	Segal Bryant and Hamill	Active	Separate Account	Retained
U.S. High Yield	Lazard	Active	Separate Account	Retained
U.S. High Yield	DDJ	Active	Separate Account	New
Emerging Markets Debt	Multi-Manager Emerging Markets Debt Fund Stone Harbor Wellington	Active	Commingled	New



Recommended Asset Allocation

Mid Atlantic Pension Fund



Source: Northern Trust

Program Implementation

Mid Atlantic Fund

Large Cap Equity

- ◆ C.S. McKee, LP
- ◆ London Company
- ◆ West End
- ◆ NWQ Investment Mgmt Co., LL
- ◆ Wells Capital Management

Small Cap Equity

- ◆ Cardinal Capital Mgmt, LLC
- ◆ Cortina Asset Management
- ◆ Fort Washington Investment Advisors
- ◆ Keeley Asset Mgmt Corporation
- ◆ Lombardia Capital Partners
- ◆ Oppenheimer Capital, LLC
- ◆ Riverbridge Partners, LLC
- ◆ Rutabaga Capital Management

International Equity

- ◆ Altrinsic Global Advisors, LLC
- ◆ Baillie Gifford (Asia Pacific)
- ◆ Edinburgh Partners, LLC
- ◆ MFS Investment Mgmt (Europe)
- ◆ Odey Asset Mgmt, Ltd. (Europe)
- ◆ Neuberger Berman Management, LLC
- ◆ William Blair & Co., LLC

Emerging Markets Equity

- ◆ Axiom International Investors, LLC
- ◆ First State Investments

Core Plus Fixed Income

- ◆ Income Research & Management
- ◆ Western Asset Management Co.
- ◆ Artio Global

High Yield Fixed Income

- ◆ Neuberger Berman Management, LLC
- ◆ W.R. Huff Asset Mgmt Co., LLC

Emerging Markets Debt

- ◆ Wellington Management
- ◆ Stone Harbor Investment Partners

Global Listed Infrastructure

- ◆ Brookfield Investment Management
- ◆ Macquarie Capital Investment Management

Real Estate

- ◆ JP Morgan

GTAA

- ◆ Wellington Trust
- ◆ AQR Capital Management, LLC

Northern Trust Private Equity Solutions

- ◆ Private Equity Fund V (first close July 2012, open to early 2013)

Northern Trust Hedge Funds Solutions

- ◆ Alpha Strategies Hedge Fund
- ◆ Aurora Global Opportunities Fund

Representative Index Strategies

- ◆ Russell 1000
- ◆ NT FTSE EPRA NAREIT Global Real Estate

The 'Northern Trust Representative Investment Strategies' contains preliminary manager selection and allocations; final selection and allocations may change subject to client criteria and investment guidelines, updated portfolio optimization modeling, and/or changes in manager evaluations.
Last updated September 30, 2012.





Proposed Fee Schedule

	FELRA and UFCW Pension Fund	Mid Atlantic Pension Fund
Program Management Fee <i>Includes Index Management</i>	10 basis points	10 basis points
Estimated Active Management Fees	49 basis points	57 basis points

Minimum annual fee of \$250,000

SERVICES INCLUDED:

Program Design

- Asset allocation strategy
- Investment policy development/review

Investment Management

- Investment manager selection and oversight

Administration

- Portfolio rebalancing

Reporting

- Quarterly performance reporting
- Investment committee presentations

NOTES:

- Final fee depends upon asset allocation including asset classes employed and degree of active management.
- See Pension Implementation for additional details
- Fund level income and expenses are incorporated in the funds' unit value.

Notes:

- When Northern Trust receives a fee custom hedge fund programs or Alternatives Fund of Funds management, those assets are excluded from the program management fee.
- Estimated manager fees are based on best available information and do not include underlying hedge fund fees, which are generally 1-2% with a 10-20% performance fee.





Implementation Timeline

Transition of assets to Northern Trust	Start	Finish	Resource Names
Initial Evaluation	TBD	TBD	Client (75%), Northern Trust (25%)
Meet with client to discuss transition process			Client (50%), Northern Trust (50%)
Provide target asset allocation and confirm if this will remain constant through transition			Client
Provide current investment policy guidelines			Client
Provide Northern with manager contact info and inform managers of Northern Trust review			Client
Initial Liquidation Preparation	TBD	TBD	Client (25%), Northern Trust (75%)
Contact current funds to determine exit requirements			Northern Trust
Create preliminary transition map			Northern Trust
Select broker/dealer for liquidation (liquidation manager)			Northern Trust
Meet with Client to discuss current managers and recommended manager line-up			Client (50%), Northern Trust (50%)
Provide termination sample letter to Client			Northern Trust
Create detailed transition map			Northern Trust
Conduct internal meeting with Administration/broker to discuss transition			Northern Trust
Open accounts for new managers			Northern Trust
Terminate Managers	TBD	TBD	Client (25%), Northern Trust (75%)
Notify manager of termination (last trade date) and send termination letter			Client
Send asset list to manager for certification			Northern Trust
Manager certifies asset list			Northern Trust
Northern Trust researches any discrepancies			Northern Trust
Deliver certified asset list to liquidation manager			Northern Trust
Obtain buy list of securities from target managers			Northern Trust
Transfer assets from terminated managers into transition accounts			Northern Trust
Transitions verifies transfer occurred correctly			Northern Trust
Complete Transition Activity	TBD	TBD	Northern Trust
Liquidation mgr completes as many crossing opportunities as possible			Northern Trust
Liquidate unwanted securities and purchase buy list securities and/or ETFs			Northern Trust
Sell ETFs to ensure proceeds avail for fund purchases (if applicable)			Northern Trust
Process conversion into new investment structure	TBD	TBD	Northern Trust
For fund purchases, send securities and/or cash to fund acct			Northern Trust
For fund purchases, reflect initial cash awaiting for purchases			Northern Trust
For fund purchases, perform valuation of funds			Northern Trust
For fund purchases, reverse cash awaiting and post purchase			Northern Trust
Provide quarterly performance report to Client	TBD	TBD	Northern Trust

Asset/Liability Study & Implementation

Data Collection

Review of current asset allocation

Meetings to discuss data & goals

Analysis

Presentation of findings and recommendations for implementation

Implementation – (Variable, ongoing and iterative process)



Northern Trust



Appendix I

- Asset Class Assumptions



Capital Market Assumptions

Asset Class	Proxy	Return	Risk
Cash	Citigroup 3-Month Tbills	0.50	0.63
US Inflation Linked	BarCap Global Inflation Linked: US TIPS	1.40	5.63
US Fixed Income: Core	BarCap US Aggregate	2.00	3.74
US Fixed Income: Long Gov/Credit	BarCap US Long Gov/Credit	3.75	8.50
US Fixed Income: Long Credit	BarCap US Long Credit	4.80	8.41
US Fixed Income: Municipals	BarCap Municipal 5 Yr 4-6	2.90	3.07
Global Fixed Income	BarCap Global Aggregate	2.00	5.55
Global Fixed Income ex US	BarCap Global Aggregate ex US	2.10	8.61
US High Yield	BarCap US High Yield Corporates	6.10	9.38
Global High Yield	BarCap Global High Yield	6.50	10.53
Emerging Market Debt	JPM GBI EM Global Diversified	6.10	9.69
US Large Cap Equity	S&P 500	8.14	15.18
US Mid Cap Equity	Russell Mid Cap	8.89	17.04
US Small Cap Equity	Russell 2000	9.94	19.79
Developed Equity	MSCI World	7.80	15.72
Developed ex US Equity	MSCI World ex US	7.10	17.77
Emerging Markets Equity	MSCI Emerging Markets	11.10	24.20
Real Asset: Global Inflation Linked	BarCap Global Inflation Linked	1.30	7.38
Real Asset: Global Public Real Estate	FTSE EPRA/NAREIT	8.40	19.07
Real Asset: Direct Real Estate	NCREIF Property	7.60	13.67
Real Asset: Global Listed Infrastructure	S&P Global Listed Infrastructure	8.90	14.70
Real Asset: Commodities (Futures Based)	DJ UBS Commodity	5.00	15.45
Real Asset: Commodities (Equities Based)	Morningstar Global Upstream Natural Resources	7.90	19.83
Alternative Currency: Gold	S&P GSCI Gold Spot	6.00	15.70
Alternatives: Hedge Funds	HFRI Fund Weighted Composite	5.50	7.07
Alternatives: Global Private Equity	VE All Private Equity Pooled Average	11.00	18.42

Source: Northern Trust Investment Policy Committee



Correlation Matrix

	Cash	US Inflation Linked Bonds	US Core Fixed Income	US Long Fixed Income	US Fixed Income: Municipals	Global Fixed Income	Global Fixed Income ex US	US High Yield	Global High Yield	Emerging Market Debt	US Large Cap Equity	US Mid Cap Equity	US Small Cap Equity	Developed Equity	Developed ex US Equity	Emerging Markets Equity	Global Inflation Linked Bonds	Global Public Real Estate	Direct Real Estate	Global Listed Infrastructure	Commodities (Futures)	Commodities (Equities)	Gold	Hedge Funds	Global Private Equity
Cash	1.00	-0.07	0.20	0.06	0.17	0.07	0.00	-0.12	-0.09	-0.19	0.05	-0.02	-0.06	-0.03	-0.07	-0.14	0.01	-0.09	-0.06	0.03	0.00	-0.10	-0.36	0.16	0.16
US Inflation Linked Bonds	-0.07	1.00	0.73	0.67	0.71	0.56	0.43	0.12	0.06	0.23	-0.15	-0.12	-0.21	-0.13	-0.13	-0.18	0.60	0.07	-0.08	0.18	0.00	-0.10	0.19	-0.19	-0.18
US Core Fixed Income	0.20	0.73	1.00	0.93	0.89	0.75	0.57	0.11	0.04	0.19	-0.04	-0.08	-0.17	-0.07	-0.10	-0.28	0.54	0.06	-0.09	0.20	-0.22	-0.21	0.00	-0.13	-0.13
US Long Fixed Income	0.06	0.67	0.93	1.00	0.79	0.68	0.50	0.13	0.06	0.18	0.01	-0.01	-0.08	-0.01	-0.05	-0.21	0.48	0.11	0.02	0.24	-0.22	-0.18	-0.05	-0.08	-0.04
US Fixed Income: Municipals	0.17	0.71	0.89	0.79	1.00	0.69	0.53	0.11	0.07	0.14	-0.12	-0.15	-0.23	-0.13	-0.15	-0.26	0.50	0.05	-0.19	0.09	-0.22	-0.23	0.02	-0.14	-0.18
Global Fixed Income	0.07	0.56	0.75	0.68	0.69	1.00	0.96	0.15	0.14	0.50	0.12	0.05	-0.04	0.17	0.21	-0.09	0.82	0.22	-0.05	0.38	0.04	0.06	0.24	-0.03	-0.03
Global Fixed Income ex US	0.00	0.43	0.57	0.50	0.53	0.96	1.00	0.11	0.10	0.54	0.11	0.04	-0.04	0.22	0.28	-0.05	0.82	0.23	-0.04	0.36	0.12	0.11	0.30	-0.04	-0.04
US High Yield	-0.12	0.12	0.11	0.13	0.11	0.15	0.11	1.00	0.90	0.52	0.59	0.57	0.55	0.56	0.48	0.54	0.19	0.52	0.13	0.48	0.00	0.43	-0.04	0.55	0.39
Global High Yield	-0.09	0.06	0.04	0.06	0.07	0.14	0.10	0.90	1.00	0.56	0.62	0.62	0.63	0.61	0.54	0.69	0.20	0.60	0.09	0.51	0.05	0.46	-0.02	0.70	0.49
Emerging Market Debt	-0.19	0.23	0.19	0.18	0.14	0.50	0.54	0.52	0.56	1.00	0.50	0.49	0.43	0.61	0.65	0.54	0.53	0.61	0.13	0.63	0.18	0.54	0.30	0.39	0.29
US Large Cap Equity	0.05	-0.15	-0.04	0.01	-0.12	0.12	0.11	0.59	0.62	0.50	1.00	0.92	0.86	0.92	0.79	0.65	0.25	0.64	0.18	0.69	0.00	0.64	-0.16	0.75	0.70
US Mid Cap Equity	-0.02	-0.12	-0.08	-0.01	-0.15	0.05	0.04	0.57	0.62	0.49	0.92	1.00	0.95	0.87	0.75	0.67	0.17	0.68	0.19	0.70	0.05	0.66	-0.12	0.81	0.70
US Small Cap Equity	-0.06	-0.21	-0.17	-0.08	-0.23	-0.04	-0.04	0.55	0.63	0.43	0.86	0.95	1.00	0.82	0.71	0.71	0.07	0.66	0.21	0.62	0.02	0.60	-0.14	0.83	0.71
Developed Equity	-0.03	-0.13	-0.07	-0.01	-0.13	0.17	0.22	0.56	0.61	0.61	0.92	0.87	0.82	1.00	0.95	0.71	0.30	0.74	0.18	0.75	0.08	0.69	-0.02	0.74	0.65
Developed ex US Equity	-0.07	-0.13	-0.10	-0.05	-0.15	0.21	0.28	0.48	0.54	0.65	0.79	0.75	0.71	0.95	1.00	0.69	0.31	0.74	0.19	0.74	0.17	0.66	0.10	0.66	0.57
Emerging Markets Equity	-0.14	-0.18	-0.28	-0.21	-0.26	-0.09	-0.05	0.54	0.69	0.54	0.65	0.67	0.71	0.71	0.69	1.00	0.09	0.64	0.11	0.50	0.12	0.64	0.08	0.77	0.54
Global Inflation Linked Bonds	0.01	0.60	0.54	0.48	0.50	0.82	0.82	0.19	0.20	0.53	0.25	0.17	0.07	0.30	0.31	0.09	1.00	0.37	0.00	0.51	0.19	0.22	0.20	0.07	0.10
Global Public Real Estate	-0.09	0.07	0.06	0.11	0.05	0.22	0.23	0.52	0.60	0.61	0.64	0.68	0.66	0.74	0.74	0.64	0.37	1.00	0.21	0.76	0.18	0.60	0.09	0.62	0.46
Direct Real Estate	-0.06	-0.08	-0.09	0.02	-0.19	-0.05	-0.04	0.13	0.09	0.13	0.18	0.19	0.21	0.18	0.19	0.11	0.00	0.21	1.00	0.23	0.06	0.14	-0.01	0.07	0.28
Global Listed Infrastructure	0.03	0.18	0.20	0.24	0.09	0.38	0.36	0.48	0.51	0.63	0.69	0.70	0.62	0.75	0.74	0.50	0.51	0.76	0.23	1.00	0.18	0.65	0.02	0.53	0.55
Commodities (Futures)	0.00	0.00	-0.22	-0.22	-0.22	0.04	0.12	0.00	0.05	0.18	0.00	0.05	0.02	0.08	0.17	0.12	0.19	0.18	0.06	0.18	1.00	0.42	0.33	0.11	0.03
Commodities (Equities)	-0.10	-0.10	-0.21	-0.18	-0.23	0.06	0.11	0.43	0.46	0.54	0.64	0.66	0.60	0.69	0.66	0.64	0.22	0.60	0.14	0.65	0.42	1.00	0.23	0.53	0.42
Gold	-0.36	0.19	0.00	-0.05	0.02	0.24	0.30	-0.04	-0.02	0.30	-0.16	-0.12	-0.14	-0.02	0.10	0.08	0.20	0.09	-0.01	0.02	0.33	0.23	1.00	-0.15	-0.20
Hedge Funds	0.16	-0.19	-0.13	-0.08	-0.14	-0.03	-0.04	0.55	0.70	0.39	0.75	0.81	0.83	0.74	0.66	0.77	0.07	0.62	0.07	0.53	0.11	0.53	-0.15	1.00	0.70
Global Private Equity	0.16	-0.18	-0.13	-0.04	-0.18	-0.03	-0.04	0.39	0.49	0.29	0.70	0.70	0.71	0.65	0.57	0.54	0.10	0.46	0.28	0.55	0.03	0.42	-0.20	0.70	1.00

Source: Northern Trust Investment Policy Committee





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