



Report to Investment Committee

Agenda of: **MAY 9, 2017**

From: Thomas Moutes, General Manager

ITEM: **IV**

SUBJECT: SEMI-FINALIST INTERVIEWS FOR GENERAL FUND CONSULTANT REQUEST FOR PROPOSAL AND POSSIBLE COMMITTEE ACTION

Recommendation:

That the Committee 1) interview the semi-finalist candidates for the General Fund Consultant search: Aon Hewitt Investment Consulting, Inc.; NEPC, LLC; and Verus Advisory, Inc.; and 2) recommend one or more finalists to the Board for possible interview and consideration for hire.

Discussion:

Background

On January 10, 2017, the Board approved the Committee's request to interview the three General Fund Consultant search semi-finalists upon completion of further due diligence by staff. The three semi-finalists are:

- Aon Hewitt Investment Consulting, Inc.
- NEPC, LLC
- Verus Advisory, Inc.

Additional Due Diligence Activities

Pursuant to the Board-approved search process, staff conducted due diligence meetings at the headquarters of each semi-finalist to confirm information provided in the RFP responses and further understand each firm's resources and capabilities. During these meetings, staff interviewed the management team, proposed consulting team, and other key professionals on topics including, but not limited to:

- Organization, business strategy, and growth
- Staffing and talent retention
- Consulting philosophy and strategy
- Asset-liability study methodology
- Investment research and due diligence process
- Performance measurement and risk management

- Firm compliance policies
- Technology and business continuity planning

Further, staff conducted reference checks to gain additional insights from current clients. Based on these activities, staff has deemed all three semi-finalists capable of providing LACERS with the scope of services pursuant to the RFP.

Strategic Plan Impact Statement

The General Fund Consultant assists LACERS in building a diversified portfolio to help the fund achieve a satisfactory long-term risk adjusted return (Goal IV). Implementing a competitive bidding process by issuing a Request for Proposal (RFP) consistent with Goal V (uphold good governance practices which affirm transparency, accountability, and fiduciary duty).

This report was prepared by Eduardo Park, Investment Officer I, Investment Division.

RJ:BF:EP:ag

Attachments: A) Presentation by Aon Hewitt Investment Consulting, Inc.
B) Presentation by NEPC, LLC
C) Presentation by Verus Advisory, Inc.



Aon Hewitt Investment Consulting

Los Angeles City Employees' Retirement System

May 9, 2017

Prepared by Aon Hewitt
Retirement and Investment

Investment advice and consulting services provided by Aon Hewitt Investment Consulting, Inc., an Aon Company.

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Aon
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Aon Hewitt Investment Consulting – Lead Consulting Team for LACERS



John Lee
Partner

- Team leader of West region consultants and located in Irvine California
- Lead consultant for eight clients (public and corporate)
- Former research team leader in international equity, custodial services, and former member of real estate research team
- 23 years with the firm as investment consultant to institutional investors



Kristen Doyle, CFA
Partner

- Client Practice Leader for Public Funds and industry-recognized consultant
- Lead consultant for eight clients (primarily large public retirement systems)
- Former research leader of asset transitions and trust services team
- 12 years with the firm as investment consultant to institutional investors



Tim McEnery, CFA
Senior Consultant

- Consulting team manager in Chicago
- Lead and senior consultant for endowments, foundations, public retirement systems, and corporate retirement plans
- Former fixed income research team member
- 10 years with the firm as investment consultant to institutional investors

Aon Hewitt Investment Consulting – Overview

- Over 354 U.S. investment consulting professionals
 - More than 600 worldwide
- \$4.2 trillion in global assets across Aon Hewitt¹
 - \$1.96 trillion in U.S. assets²
 - \$66.3 billion in U.S. delegated assets across 141 clients³
- 495 U.S. investment consulting clients and specialists covering:
 - Corporate and Public Pension Plans
 - Defined Contribution Retirement Plans
 - Endowments and Foundations
 - VEBAs
 - Specialty Assets
- Independent and objective advice—100% of revenue derived from consulting clients
- Investment Manager and Capital Market Research structured as global practices
- More than 95 professionals dedicated to Investment Manager Research, including more than 35 dedicated to alternative strategies
- Fully integrated with Retirement practice (Actuarial and Administration)

Top Industry Rankings

- Total U.S. Client Assets
- Number of Corporate Clients

Sources: November 2014 issue of *Pensions & Investments* and Plan Sponsor 2014 survey

Client Characteristics

- 495 U.S. clients
- 200+ Clients >10 Years
- 95%+ Client retention rate

Experience

Depth of Resources

Analytical Capabilities

¹ As 6/30/16, assets under advisement represents \$84.7 B in discretionary assets under management and \$4.117 T in non-discretionary assets advised by AHIC and its global affiliates which includes retainer clients and clients in which AHIC and its global affiliates have performed project services for over the past three years.

² As of 9/30/2016, represents \$1.89 T in advised US retainer non-discretionary assets and \$65.8 B in discretionary assets under management.

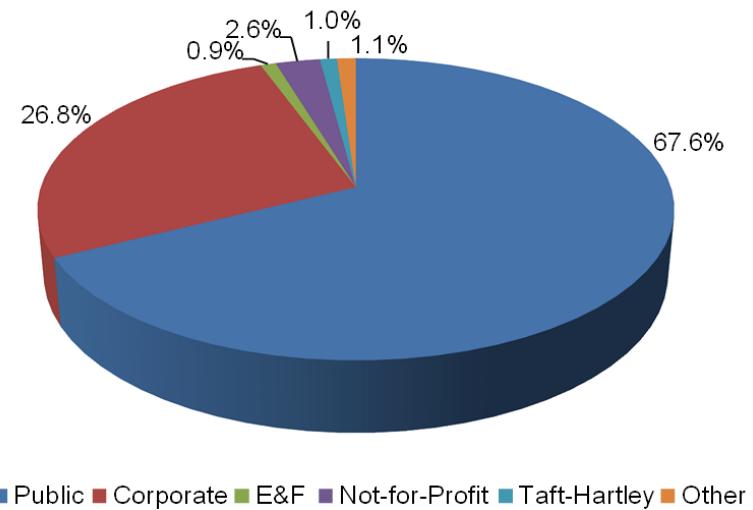
³ As of 12/31/2017

Deep Public Fund Experience



Data collected from public sources as of third quarter 2016.

Breakdown of Client AUA



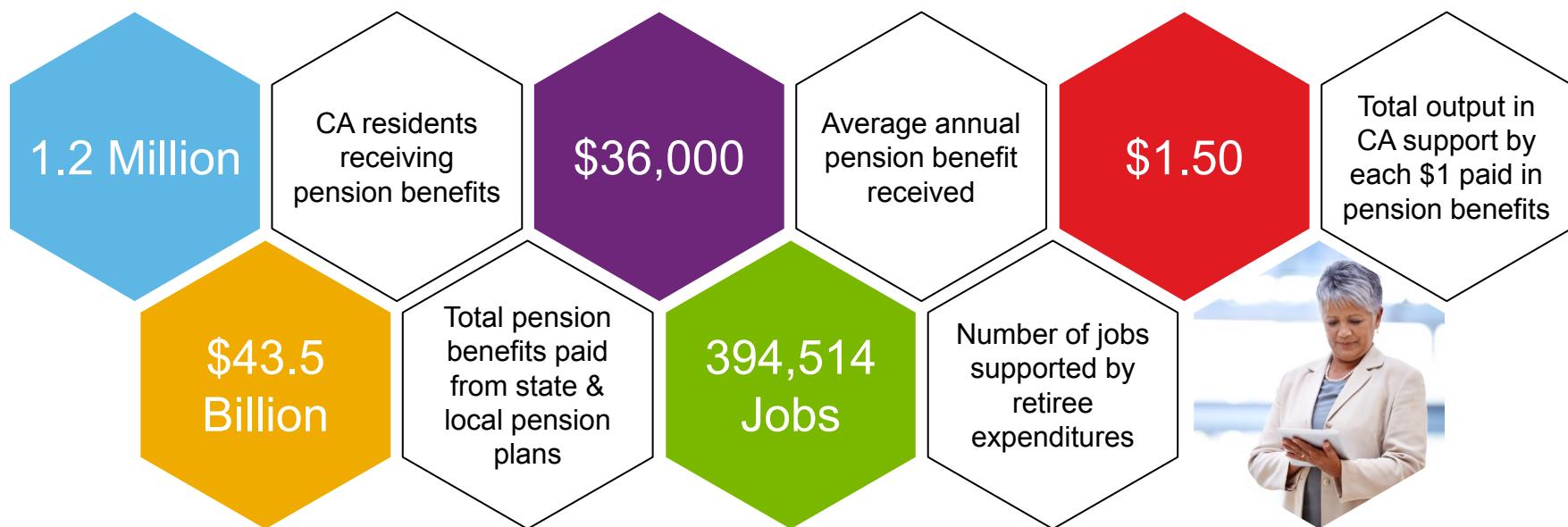
	AUA	# of Clients
Traditional Consulting	\$1.95 Trillion	495
Public Sector Clients	\$1.32 Trillion	42
Specialty Services		
Private Equity	\$35 Billion	40
Real Estate	\$33 Billion	50
Hedge Funds	\$35 Billion	70

As of September 30, 2016, U.S. retainer clients only.

California State and Local Plans: Economic Impact

- We understand and recognize the importance of the benefit that Los Angeles City Employees' Retirement System has on its members and retirees, and overall on California's economy
- We do not take this lightly, and come alongside LACERS to achieve strong, sustainable results at a reasonable level of risk, in order to continue this important impact

Source: National Institute on Retirement Security Missouri Pensionomics 2016. Link to the report is below.



http://www.nirsonline.org/storage/nirs/documents/Pensionomics2016/pensionomics2016_ca.pdf

Experience Serving Public Funds and other California Institutions

Representative List of Clients

Public Pension Funds

- Arkansas Teacher Retirement System
- Colorado Public Employees' Retirement Association
- Employees Retirement System of Texas
- Employees' Retirement System of Kansas City
- Kentucky Teachers' Retirement System
- Michigan Department of Treasury
- Nebraska Investment Council
- New Jersey Division of Investment

California Clients

- New York State Teachers' Retirement System
- North Carolina Dept of State Treasurer
- Pennsylvania Public School Employees' Retirement System
- State Board of Administration of Florida
- Teacher Retirement System of Texas
- Teachers' Retirement System of Louisiana
- San Diego City Employees' Retirement System
- San Diego County Employees Retirement Association
- Sonoma County Employees' Retirement Association
- BlueShield of California
- California State University System
- Google
- Honda Motor Company
- Loyola Marymount University
- Public Policy Institute of California
- Safeway/Albertsons
- Southern California Edison
- Stanford University
- The Scripps Research Institute
- Visa International

**List depicts largest non-discretionary consulting clients by Assets Under Advisement ("AUA") in each of the categories above of AHIC's retainer clients as of 2/28/17. It is not known whether the listed clients approve or disapprove of AHIC or the advisory services provided*

Vision and Growth Plans

- Our growth goals are measured and aligned with our ongoing commitment to deliver excellent service to our existing clients
- Our long-term strategy focuses on growing at a measured pace, both at the client level and the personnel level
- Over the years, we have carefully managed the growth in our firm and acquired specific expertise to cater to the wide range of specialized services that government entities and public funds seek
 - In recent periods, we have used our position of financial strength to continue adding resources to our research and consulting areas
- We are very selective about pursuing opportunities, as our first priority is to consistently provide the highest quality service to our clients
 - Our focus is to maintain personalized service without sacrificing our relationships with existing clients for the sake of acquiring new clients

Mentoring Programs For Young Professionals – Aon's Apprentice Program

- Aon's apprenticeship program focuses on entry-level employees
- During the two-year program, apprentices will gain professional experience as paid, full-time colleagues, while managers cultivate talent suited to Aon's roles and business objectives.
- Harper College and Harold Washington College have worked with Aon to create a specialized curriculum for Aon apprentices to take classes on campus
 - Upon completion of the apprenticeship program, graduates will obtain an associate business degree from Harold Washington College or Harper College and an industry apprenticeship accreditation
- Two Year Program, Full-time Compensation, Paid Tuition Benefit in pursuance of Associate Degree, Employee Benefits (e.g., Health, Retirement, Vacation Time, Sick Time)



Aon – Inclusion and Diversity

- At the core of Aon's Inclusion strategy is what we call our Unmatched Talent agenda, one of the 3 major pillars of our firm that focuses on positioning Aon as the best place to work the risk and people industries. The three components of the strategy are:
 - Cross Cultural Competence** – Leveraging the multiplicity of cultures, backgrounds, experiences of our talent to increase the quality of work; yielding greater innovation and business results.
 - Workforce Diversity** – Optimal mix of skills, backgrounds, experiences, perspectives as well as race and gender that help us deliver distinctive client value.
 - Inclusive Culture** – Our ability to translate our values into actions.



Business Resource Groups

- Aon Link** (early career/recent college graduates)
- Aon Pride Alliance** (LGBT)
- Asian**
- B.U.I.L.D.** (Blacks United in Leading Diversity)
- Generations** (colleagues approaching retirement)
- LEAD** (Latinos Engaging and Achieving Diversity)
- People with Disabilities**
- Veterans United**
- Virtual Connections** (Colleagues working remotely)
- Woman's International Network**
- Working Parents**

Aon Hewitt Investment Consulting – Organizational Structure¹

Investment Consulting Services	CLIENT CONSULTING TEAM					Global Asset Allocation
Steve Voss and Dave Testore Co-Leaders 270 Investment Professionals	<p>John Lee Partner</p> <p>Kristen Doyle Partner</p> <p>Tim McEnery Senior Consultant Consulting Manager and Performance Analyst(s)</p>					Tapan Datta Leader 10 Investment Professionals
Delegated Investment Solutions	<p>Clint Cary Leader 70 Investment Professionals</p>					Fiduciary Services
Investment Policy Services	<p>Phil Kivarkis Leader 38 Investment Professionals</p>					Jeanna Cullins Leader 2 Investment Professionals
	<p>Global Investment Manager Research</p>					Trust & Custody
Equity	Fixed Income	Liquid Alternatives	Real Estate	Private Equity		
Chris Riley Leader 17 Professionals	Lennox Hartman Leader 15 Professionals	Chris Walvoord Leader 16 Professionals	Catherine Polleys & Nick Duff Co-Leaders 14 Professionals	Karen Rode Leader 15 Professionals		

Operational Due Diligence

Rian Akey (Global Head of ODD), Chris Goodeve-Ballard, Mark Flanagan, Joe Ingalsbe & Richard Spivey

¹ As of March 14, 2017

Aon Hewitt | Retirement and Investment

Proprietary & Confidential

Investment advice and consulting services provided by Aon Hewitt Investment Consulting, Inc., an Aon Company.

Our Investment Philosophy – Building the Ideal Portfolio

- There is no single ideal portfolio; each pool of assets must be structured and managed in relation to the asset owner's objectives, constraints and risk tolerance. Aon Hewitt works in partnership with each client to establish a customized approach that is intended to achieve those goals
 - Gain **exposure to the broad opportunity set** across and within each asset class
 - Eliminate un-intended structural biases
 - Recognize risks associated with structural biases and be comfortable with such risks
 - **Pay little for beta**
 - Use active management for alpha; not diversification
 - Focus manager selection efforts on **skill and not style**
 - Hire active managers that can add value regardless of their style and capitalization
 - Allow managers with identifiable skill broad latitude to add value
 - **Utilize active risk budgeting** as a risk control and allocation tool
 - Focus portfolio's active risk profile in areas where they will be most rewarded
 - **Spend fees effectively and wisely**
 - Incur fees in areas where they will be most favorably rewarded

Risk Management – Key Risks for Public Pension Funds

Types of Risk	Time Horizon	Risk Management Tools and Controls
Return Shortfall <ul style="list-style-type: none"> ▪ Assets do not grow with liabilities ▪ Investment Return & Contribution less than Liability Growth 	Long Term (10+ years)	<ul style="list-style-type: none"> ▪ Funding Policy ▪ Plan Design ▪ Investment Policy (Dynamic?) ▪ Assumptions & Methods
Liquidity <ul style="list-style-type: none"> ▪ Cannot liquidate assets efficiently to meet needs ▪ Lost control of asset allocation 	Short to Medium Term (<5 years)	<ul style="list-style-type: none"> ▪ Funding Policy ▪ Benefit Accruals ▪ Use of Illiquid Investments ▪ Scenario Analysis ▪ Monitoring
Investment <ul style="list-style-type: none"> ▪ Asset Allocation (Policy) ▪ Investment Structure ▪ Manager Selection ▪ Rebalancing ▪ Scenario (or Path Risk) ▪ Factor 	Short to Medium Term (<5 years)	<ul style="list-style-type: none"> ▪ Investment Policy Statement <ul style="list-style-type: none"> – Static/Dynamic – Asset Allocation – Rebalancing – Manager Guidelines – Monitoring/Roles & Responsibilities ▪ Risk Budgeting Tools ▪ Monitoring / Dashboards ▪ Medium Term Views ▪ Regression and Scenario Analysis
Others (e.g., Operational)	Ongoing	<ul style="list-style-type: none"> ▪ Operational and Specialty Due Diligence

Current State Asset-Liability Profile as of June 30, 2016

Los Angeles City Employees' Retirement System (LACERS)

ATTACHMENT A

Asset-Liability Snapshot as of 6/30/2016		
Metric (\$, Billions)	Value	Fund %
Market Value of Assets	\$11.8	67.8%
Actuarial Value of Assets	\$12.4	71.4%
Liability Metrics		
Actuarial Liability (AL) - Funding	\$17.4 ¹	

Target Asset Allocation as of 6/30/2016		
Metric (\$, Millions)	Value	Alloc %
Return-Seeking		
- Domestic Equity	\$2.8	24%
- Non-U.S. Equity	\$3.4	29%
- Credit Opportunities	\$0.6	5%
- Private Equity	\$1.4	12%
- Real Assets	\$1.2	10%
- Total	\$9.4	80%
Risk-Reducing		
- Core Fixed Income	\$2.2	19%
- Cash	\$0.1	1%
- Total	\$2.4	20%
Total	\$11.8	100%

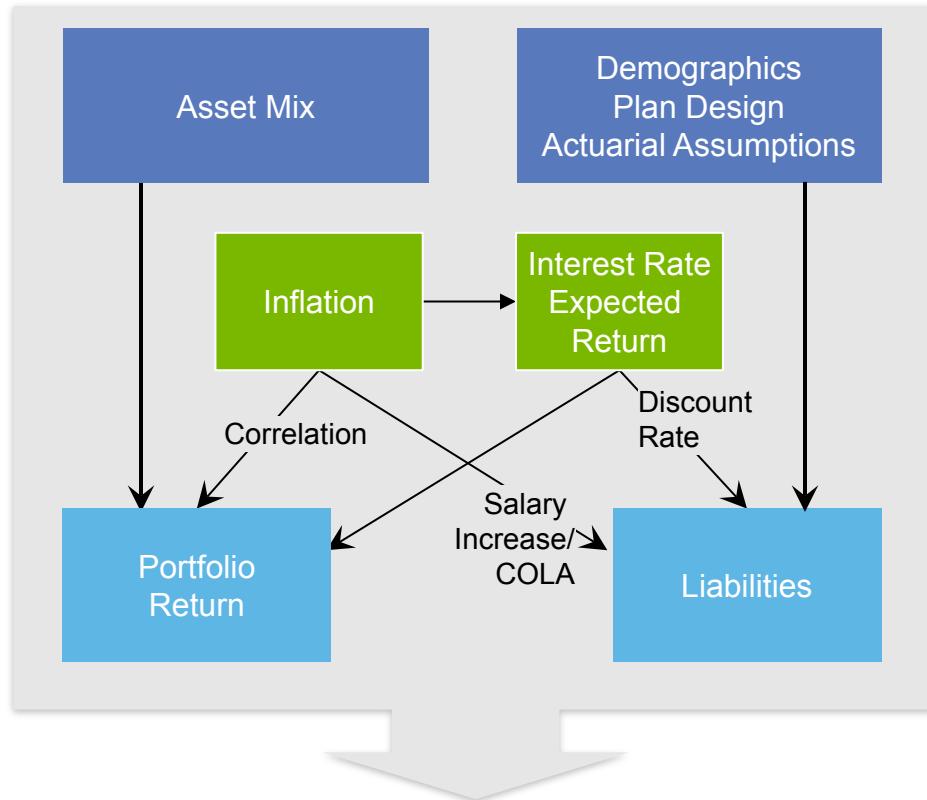
Asset-Liability Growth Metrics			
Metric (\$, Billions)	Value	% Liability	% Assets
AL Interest Cost	\$1.31	7.5%	11.1%
AL Normal Cost	\$0.34	2.0%	2.9%
Total Liability Hurdle Rate	\$1.65	9.5%	14.0%
Expected Return on Assets	\$0.89	5.1%	7.5%
ER + EE Contributions	\$0.66	3.8%	5.6%
Total Exp. Asset Growth	\$1.55	8.9%	13.1%
Hurdle Rate Shortfall	\$0.10	0.6%	0.9%

Comments:

- Pension plan 67.8% funded as of June 30, 2016 on a market value of assets basis
- Target asset allocation shown is 80% allocated to “return-seeking assets” and 20% allocated to “risk-reducing/safety assets”
- Current expected asset growth rate trails the liability growth rate
 - Excess asset growth relative to “hurdle rate” is expected to help close funding gap over time
 - Contingent on both expected asset returns and expected funding
- Consider relationship between investment policy and expected funding to ensure long-term funding sufficiency
 - Every 1% change to expected asset return will change annual funding requirement by approximately \$100 million

¹ Based on LACERS plan valuation interest rate of 7.50% from the FYE 2016 actuarial valuation report

Mechanics of Asset-Liability Modeling



Asset and liability modeling integrated in single platform

- Integrates impact of key economic variables

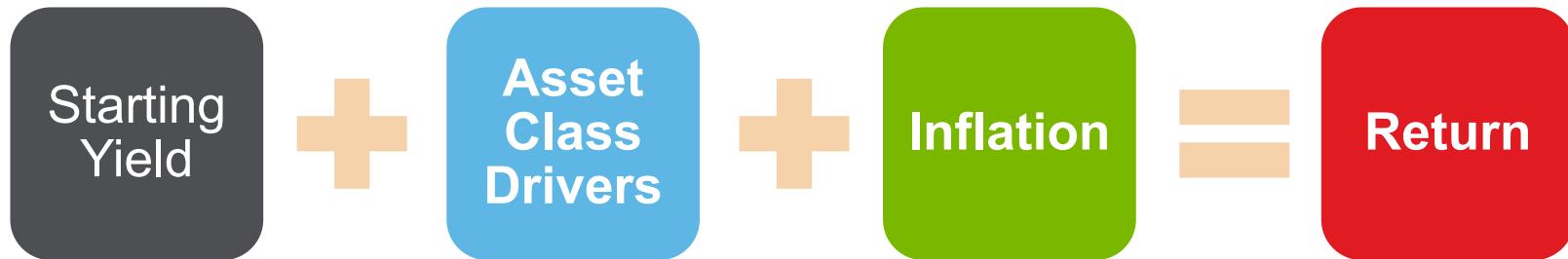
Flexibility in modeling parameters and output to client preferences

Stochastic and deterministic modeling performed

Long-Term Capital Market Assumptions

- Asset class return, volatility and correlation assumptions
- Long-term (10- and 30-year), forward-looking assumptions
- Best estimates (50/50 probability of better or worse long-term results than expected)
- Market returns: no active management value added or fees (other than hedge funds and private equity, where traditional passive investments are not available)
- Produced quarterly by Global Asset Allocation Team

Capital Market Assumptions Framework



Medium-Term Views

- Analyses asset class outlook over a 1-3 year timeframe
- Shown against strategic benchmark weights
- Fundamental, valuation and near-term signals convey positives and negatives that build up to the aggregate medium-term views for an asset class
- Produced monthly by Global Asset Allocation Team

Medium Term Views Framework

Fundamental	Valuation	Near-Term
<p>Analyze the core economic and underlying drivers of an asset class. For example:</p> <ul style="list-style-type: none"> ▪ Economic Growth ▪ Earnings Growth ▪ Default Risk 	<p>Establish if the asset class is cheap or expensive given our fundamental outlook. For Example:</p> <ul style="list-style-type: none"> ▪ P/E Ratio ▪ Credit Spreads ▪ Yield Levels 	<p>Establish if near-term drivers for the asset class are positive or negative. For Example:</p> <ul style="list-style-type: none"> ▪ Technical Indicators ▪ Sentiment Surveys ▪ Futures/Options Positioning

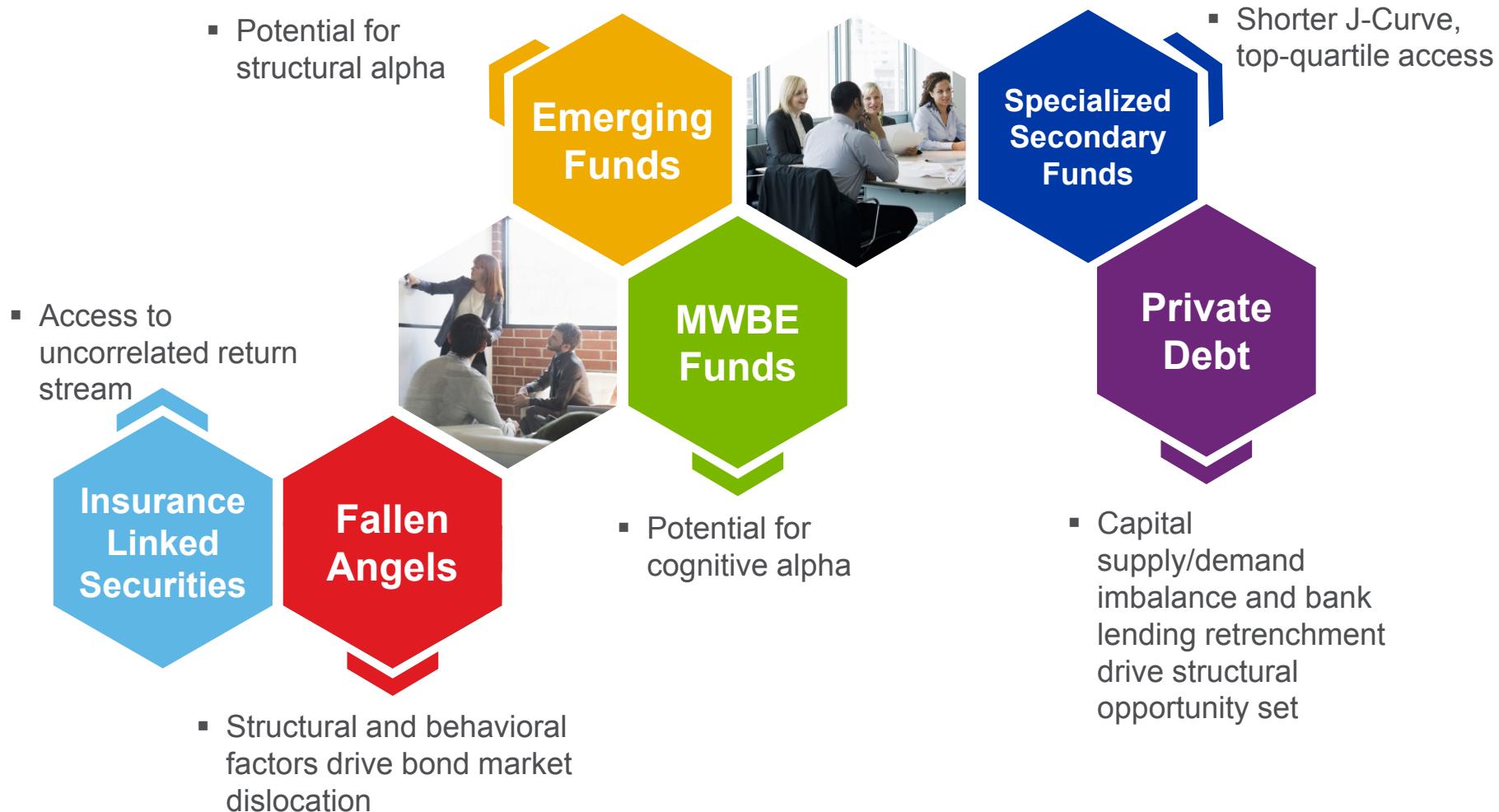
Thought Leadership

As one of the largest consulting firms in the world, our clients look to us for market research, intelligence, and current, as well as emerging best practices

				2012/2013:	2016/2017:
1981:	1988: Initiation of global Capital Asset Pricing Model (CAPM) asset allocation	1999: Analytical framework for measuring and monitoring active risk Factor risk modeling	2009/2010: Advocacy of new approach to fixed income investing 2003: First delegated client Advocacy of global strategies Small Cap Alpha Myth Bernstein Fabozzi award¹	Risk Parity and the Limits of Leverage Increased use of Alternatives Less Reliance on Traditional Active Management	Fallen Angels – Capitalizing Upon an Attractive Segment of the High Yield Market
Use of indexation In institutional investment portfolios Advocacy of small cap stocks	1993: Neutralization of style bias			Go Big or Go Home Public Funds Can Compete	Think Big By Going Small – Global small-cap equity exposure
				Conviction in Equity Investing	
1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017	1983: Inclusion of real estate and international stocks First DOL expert witness project	1991: Advocacy of private equity Real Estate Investment Under a Simple Equilibrium Pricing Model Graham & Dodd Award¹	2001/2002: Case for whole stock portfolios Published article Cautioning about The use of hedge fund-of-funds Bernstein Fabozzi award ¹	2007/2008	2014/2015: Advocated global market weighted equities Recommended infrastructure Retained by US Treasury Department
					Opportunity Allocations Asset Allocation Rotation with Medium-Term Views

¹ A description of the awards listed above can be found in the appendix

Recent Innovative Investment Strategies Provided to Our Clients



Global Investment Manager Research Team¹

Equities	Fixed Income	Liquid Alternatives	Real Estate	Private Equity
Christopher Riley	Lennox Hartman	Chris Walvoord	Catherine Polleys & Nick Duff	Karen Rode
<ul style="list-style-type: none"> ▪ Global ▪ Regional ▪ Style ▪ Size 	<ul style="list-style-type: none"> ▪ Government ▪ IG Credit ▪ EMD ▪ Absolute Return ▪ LDI ▪ Cash 	<ul style="list-style-type: none"> ▪ Direct Hedge Funds ▪ Fund of Hedge Funds ▪ Currency ▪ Commodities 	<ul style="list-style-type: none"> ▪ Core ▪ Value add ▪ Opportunistic ▪ REITs ▪ Timber ▪ Agriculture 	<ul style="list-style-type: none"> ▪ Direct Private Equity ▪ Fund of Funds ▪ Infrastructure ▪ Global Regional
17 Researchers	15 Researchers	16 Researchers	14 Researchers	15 Researchers
<ul style="list-style-type: none"> ▪ Chris Riley ▪ Howard Alford ▪ Jack Anderson² ▪ George Carvounes ▪ Mark Chow ▪ Neil Collins ▪ Tim Godin ▪ Annie Imer ▪ James Jackson ▪ Paul Kennedy ▪ Adrian Kurniadjaja ▪ Alistair McKissack ▪ Thomas Stork ▪ Phil True ▪ Will Tsui ▪ Nicole Wubbena ▪ Omer Zaman 	<ul style="list-style-type: none"> ▪ Lennox Hartman ▪ Jack Anderson² ▪ Mette Charles ▪ Joe Grandis ▪ Rohit Kapur ▪ Hani Legris² ▪ Roddy McKenzie ▪ Kareena Moledina ▪ Erwan Pirou ▪ Elijah Reese ▪ Heinz Schelhammer ▪ Murphy Stephens ▪ Stuart Tipton ▪ Frank Valle ▪ Paul Whelan 	<ul style="list-style-type: none"> ▪ Chris Walvoord ▪ Erol Alitovski ▪ Jack Anderson² ▪ Allen Cheng ▪ Lewis Fowler ▪ Kevin Hrad ▪ Zofia Kacmarczyk ▪ Riccardo Lawi ▪ Kyle Lawrence ▪ Richard Mohr ▪ Mike Pollard ▪ Michael Smith ▪ Zornitza Taleva ▪ Matthew Towsey ▪ Alison Trusty ▪ Chris Ullathorne 	<ul style="list-style-type: none"> ▪ Nick Duff ▪ Catherine Polleys ▪ Jack Anderson² ▪ Kirloes Gerges ▪ Oliver Hamilton ▪ Chae Hong ▪ Hani Legris² ▪ Catherine Marshall ▪ Katherine Miller ▪ David Rose ▪ Saran Satefanen² ▪ Sarah Trombello ▪ Jani Venter ▪ Tim Zukowski 	<ul style="list-style-type: none"> ▪ Karen Rode ▪ Jack Anderson² ▪ Adam Belkairous ▪ Eric Denneny ▪ Amy Hauke ▪ Hans Holmen ▪ Jorge Huitron ▪ Bruce Ingram ▪ Betsie Kempf ▪ Douglas Moore ▪ Saran Satefanen² ▪ Lisa Staub ▪ Thomas Wyss ▪ Shari Young Lewis ▪ Iftikhar Ahmed

Operational Due Diligence

Rian Akey (Global Head of ODD), Chris Goodeve-Ballard, Mark Flanagan, Joe Ingalsbe & Richard Spivey

¹ As of March 14, 2017

² Indicates a colleague splitting time between groups

Identifying Strong Managers Using Qualitative And Quantitative Metrics



Depth and Stability

Ownership structure • Compensation policies • Professional turnover •
 Succession planning • Business focus • Level of assets • Culture of organization • Alignment of interests • Ethical standards

Consistent and Deep Approach

Consistent investment philosophy • Repeatable process • Strong research capabilities • Demonstrated knowledge • Adherence to style • Attribution matches style • Proper risk management

Legitimate and Repeatable

In-line with style • Attribution analysis • Understanding of under-performance • Results not driven by a “home run” • Composite construction • Performance dispersion

Investment Due Diligence Manager Research Process

ATTACHMENT A



Provided for Illustrative Purposes Only **ATTACHMENT A**
Research and Monitoring Reports Highlight Key Information and Ratings

- Over 500 manager searches each year for U.S. clients
 - Ongoing communication of qualitative investment manager assessment
 - Due diligence reports include:
 - Current/former product rating
 - Component ratings
 - Summary information and terms
 - Detailed qualitative assessment
 - Key factors to monitor

Emerging/Diverse Managers – Summary of 2016 Meetings

Meredith Jones – Head of Emerging Manager Research

- Partner at Aon Hewitt Investment Consulting
- Dedicated to conducting research and providing solutions around socially responsible investing, emerging managers, niche strategies, and alternative investments
- Author of *Women of The Street: Why Female Money Managers Generate Higher Returns (And How You Can Too)*. Her research has been featured in the international financial media, including *The New York Times*, *The Wall Street Journal*, *The Economist*, *The Journal of Investing*, and more

	Emerging	MWBE		
Count	64	47		
Long-only	Hedge	PE/VC	Real Estate	
Count	38	42	5	5
Women	Minority	Veteran	Diverse	
Count	25	18	2	2

Emerging/Diverse Manager Definitions

- Long-only – AUM < \$2B OR MWBE ownership (33%+) or fund management, regardless of size
- Liquid Alts – AUM < \$300m OR MWBE ownership (33%+) or fund management, regardless of size
- Private Assets – Fund I or Fund II OR MWBE ownership (33%+) or fund management, regardless of size
- Minority funds must be US based (definition of minority changes depending on country)
- Women run funds can be based anywhere since gender isn't generally mutable

Overall Thoughts on LACERS Investment Portfolio

- In reviewing your existing managers, we believe you have a strong roster
 - The majority of your public markets managers are favorably rated by our firm
- The structure of the portfolio generally appears reasonable to us upon initial review
 - Primarily passive orientation within Domestic Equity asset class
 - Core passive position within Non-U.S. Equity asset class
 - Exposure to higher-quality fixed income categories that typically fare well in times of equity stress
 - Exposure to higher-yielding fixed income categories that provide an element of excess return generation and can be used to diversify equity and equity-like asset classes
- We do believe there are potential areas for improvement, however, including:
 - Adding an allocation to global equities, where active managers have the ability to add value investing unconstrained in both U.S. and non-U.S. markets
 - Seek to further enhance portfolio efficiency and reduce investment management cost by reviewing the number of managers utilized and the drivers of risk
 - Utilizing the MSCI Investable Market Indices (IMI) for non-U.S. equity indexation and benchmarking
 - Establishing a new (or review the existing) process for emerging managers in the program
 - Reviewing other return-enhancing strategies that are not yet represented in the portfolio

Source: LACERS Portfolio Performance Review – Quarter Ending December 31, 2016

The opinions referenced are as of the date of publication and are subject to change due to changes in the market, economic conditions, or AHIC's manager ratings, and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice.

Why Aon Hewitt Investment Consulting?



Senior Level, Tenured Lead Team (2 Partners and 1 Senior Consultant)

Deep Experience with Public Plans

Depth and Breadth of Research Resources

Integrated Asset-Liability Tools & Expertise

Seamless Coordination with Manager Research Teams



Appendix

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Aon Hewitt Investment Consulting – Lead Consulting Team for LACERS



John Lee
Partner

John Lee is a Partner and a lead investment consultant at Aon Hewitt. He is the head of the firm's U.S. West regional consulting team and is located in the southern California office. John is responsible for all aspects of investment consulting services, including investment manager analysis and monitoring, performance evaluation, asset allocation, investment manager searches, and investment policy development.

John has more than 23 years of investment consulting experience, and more than 25 years of experience in the investment industry. John's previous roles at the firm include leader of the firm's regional Client Advisory Group (in Chicago). He has also managed the Trust Services and Asset Transitions group. John has served on the firm's Advisory Councils for global equity and defined contribution research. He was group leader of the firm's international equity, custody services, and defined contribution services research teams.

Prior to joining the firm in early 1994, John worked at Motorola Corporation and First Investors Corporation. John has an A.B. degree in Economics from the University of Chicago and an M.B.A. degree from Kellogg School of Management at Northwestern University.

Aon Hewitt Investment Consulting – Lead Consulting Team for LACERS



Kristen Doyle, CFA
Partner

Kristen is a Partner, leads the firm's public fund business, and is a member of the firm's client advisory group. As the head of public funds, Kristen is responsible for new business development and ensuring that AHIC has the right resources, research, and expertise necessary to properly service public sector clients. She assists with client projects that require her expertise. She currently works with eight retainer consulting clients, where she is either the lead or co-lead. These clients range from \$200 million to \$400 billion in assets under management and are primarily public pension plans and foundations/endowments. She is responsible for assisting these plans with asset allocation advice, risk budgeting, asset/liability reviews, investment policy development, benchmarking, manager selection and structure, and asset class structure. She is also responsible for reporting and monitoring the investment programs and has been instrumental in structuring public fund performance reports for staff and the board as well as other reports such as risk exposure reporting for both traditional and alternative asset classes and risk management reporting.

Kristen previously led the trust services team in the U.S. focused on custody, securities lending, and transition management. This team also supports the firm in other areas that include foreign exchange, transaction cost analysis, and commission recapture. The team assists clients with searching for vendors in these three areas, structuring a custody or securities lending relationship, and assessing the risks associated with these programs from an operational perspective. With regard to transition management, Kristen was also previously the global head of transition management, responsible for managing the transition management research and implementation team in the U.S., UK, and Canada.

In 2014, Kristen was awarded The Rising Stars of the Profession 35 Under 35 Award by Consulting Magazine and in 2016, was named to the list of Knowledge Brokers: New Guard published by AiCIO Magazine, which recognizes five star consultants that will transform their firms and industry in the next five years. Prior to joining the firm in 2005, Kristen worked at Northern Trust in the custodial operations group for more than two years. She has a Bachelor of Arts in economics from Denison University. She is a CFA charterholder and member of CFA Institute and the CFA Society of Chicago.

Aon Hewitt Investment Consulting – Lead Consulting Team for LACERS



Tim McEnergy, CFA
Senior Consultant

Tim is a Senior Consultant and manages consulting assignments for several retainer and project clients. His client base includes public retirement systems, corporate pension funds (DB & DC), and not for profit institutions (endowments and foundations). Tim has assisted clients with varying circumstances in all aspects of their investment programs – asset allocation, development of implementation structure, selection and monitoring of managers across all major asset classes, and ongoing monitoring and reporting.

Tim's relevant professional experience includes:

- Developed an opportunistic component for a \$2 billion pension fund, assisting with the evaluation and selection of external investment managers
- Assisted one of the nation's largest public pension funds in restructuring their public markets equity allocation and helped with the evaluation and selection of external investment managers
- Provided guidance and developed an implementation strategy for a \$300 million cash equitization program
- Assisted with the development and structure of a real asset component for a large endowed pool of assets; assisted with the evaluation and selection of investment managers

Tim is a member of the firm's Client Advisory Group and assists with client projects that require his expertise. Tim spent several years participating in the firm's manager research team where he was responsible for managing the firm's approved fixed income managers as well as researching prospective managers to bring forward for approval.

Tim earned his B.S. degree in finance from Eastern Illinois University prior to joining the firm in 2007. He is a CFA charterholder and member of CFA Institute and the CFA Society of Chicago

Proposed Scope of Services



Proposed Scope of Services

- Investment Policy Reviews
- Investment Strategy Development
- Investment Manager Structure
- Manager Selection
- Performance Evaluation
- Risk Management
- Thought Leadership
- Educational Resources
- Regular Meeting Attendance



Possible Additional Investment Consulting Services

- Complex Transition Services
- Custodian Search
- Specialty Fiduciary Services (e.g., audits and operational reviews)
- Alternative Investments (hedge funds; private equity; and/or real estate)
- Legal Review of Partnership Documents



Aon Hewitt Investment Consulting – Workforce Composition Report

Vendor **Aon Hewitt Investment Consulting, Inc.**
 Address **200 E. Randolph St., Suite 500**
Chicago, IL 60601

Date Completed: **April 25, 2017**

Category **General Fund Consultant**

Occupation	TOTAL COMPOSITION OF WORK FORCE - Aon Hewitt Investment Consulting (U.S.)								
	African American	Hispanic	Asian or Pacific Islander	American Indian/Alaskan Native	Caucasian (Non Hispanic)	Total Employees	Percent (%) Minority	Gender	
	Full Time	Full Time	Full Time	Full Time	Full Time	Full Time	Full Time	Male	Female
Officials & Managers	0	0	0	0	0	0	0%	0	0
Professionals	8	2	20	0	145	175	17%	183	63
Technicians	0	0	0	0	0	0	0%	0	0
Sales Workers	0	0	0	0	0	0	0%	0	0
Office/Clerical	3	1	0	0	7	11	36%	0	17
Semi-Skilled	0	0	0	0	0	0	0%	0	0
Unskilled	0	0	0	0	0	0	0%	0	0
Service Workers	0	0	0	0	0	0	0%	0	0
Other	0	0	0	0	0	0	0%	0	0
Total	11	3	20	0	152	186	18%	183	80

Colleagues not represented on the above Chart

Two or More Races	1
Not identified	76

Award Descriptions

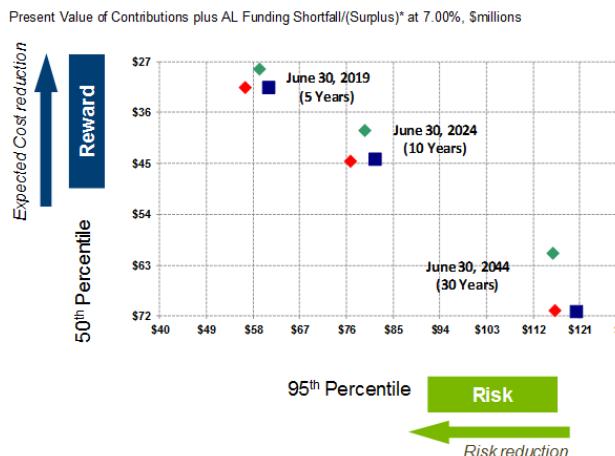
- **The Bernstein Fabozzi/Jacobs Levy Awards** were established in 1999 to honor Editors Peter Bernstein and Frank Fabozzi for their extraordinary contributions and to promote research excellence in the theory and practice of portfolio management
- **The Graham and Dodd Awards** were created in 1960 to recognize excellence in research and financial writing and to honor Benjamin Graham and David L. Dodd for their enduring contributions to the field of investment analysis

Provided for Illustrative Purposes Only

Asset-Liability Study Process

ATTACHMENT A

Economic Cost Analysis



Economic Cost

June 30, 2019

Strategy (\$Millions)	Cost	Risk
(A) Current Policy	\$31.6	\$61.0
(B) Risk-Reducing Alternative	\$31.5	\$56.5
(C) Return-Enhancing Alternative	\$28.4	\$59.4

June 30, 2024

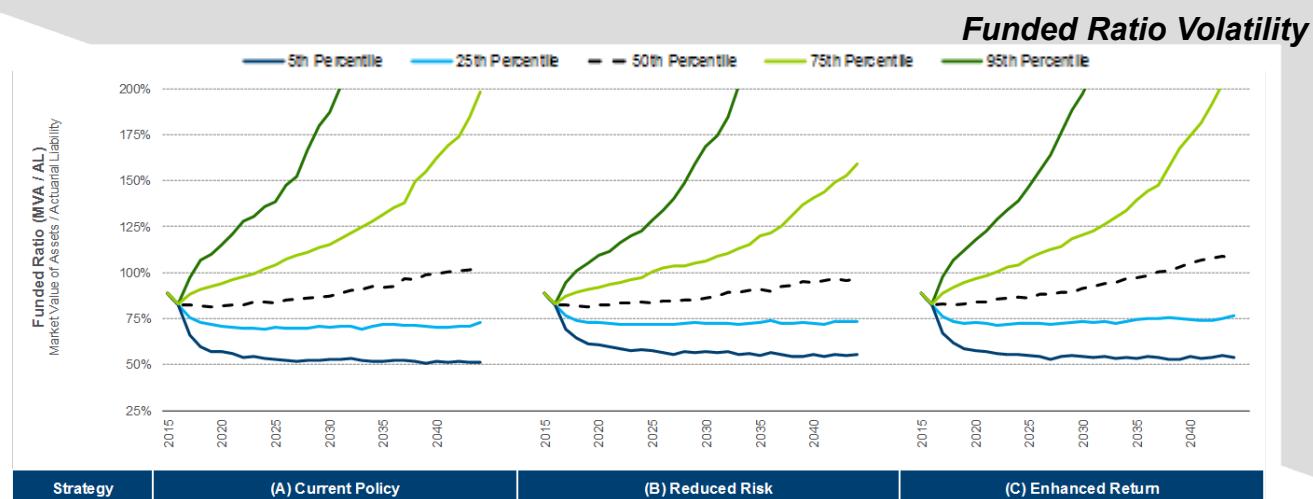
Strategy (\$Millions)	Cost	Risk
(A) Current Policy	\$44.3	\$81.6
(B) Risk-Reducing Alternative	\$44.7	\$76.7
(C) Return-Enhancing Alternative	\$39.2	\$79.5

June 30, 2044

Strategy (\$Millions)	Cost	Risk
(A) Current Policy	\$71.3	\$120.4
(B) Risk-Reducing Alternative	\$71.0	\$116.2
(C) Return-Enhancing Alternative	\$60.9	\$115.9

Key Takeaways:

- ALM output is designed to assist in investment strategy decision-making
- Includes scenario analysis and Monte Carlo simulation of key pension financial metrics:
 - Contribution Rate
 - Funded Status
 - Economic Cost
 - Liquidity

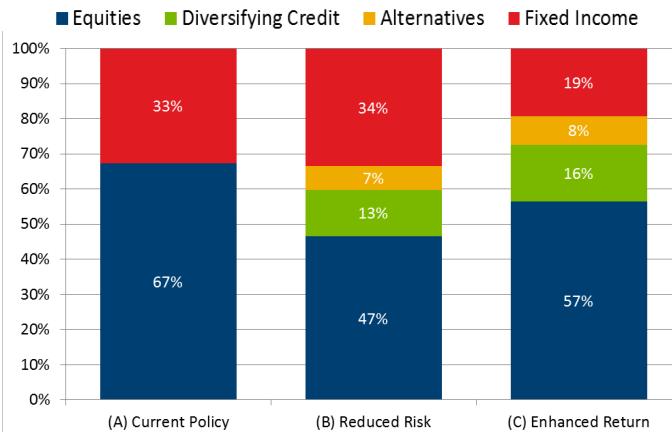
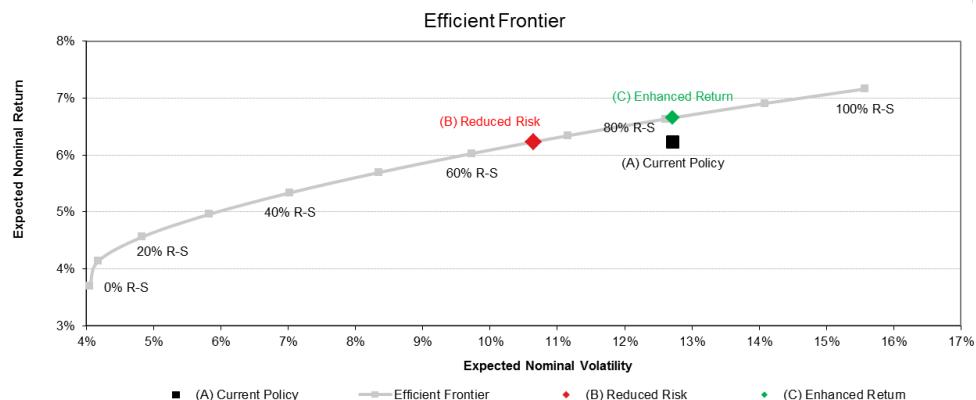


Provided for Illustrative Purposes Only

Asset-Liability Study Process

ATTACHMENT A

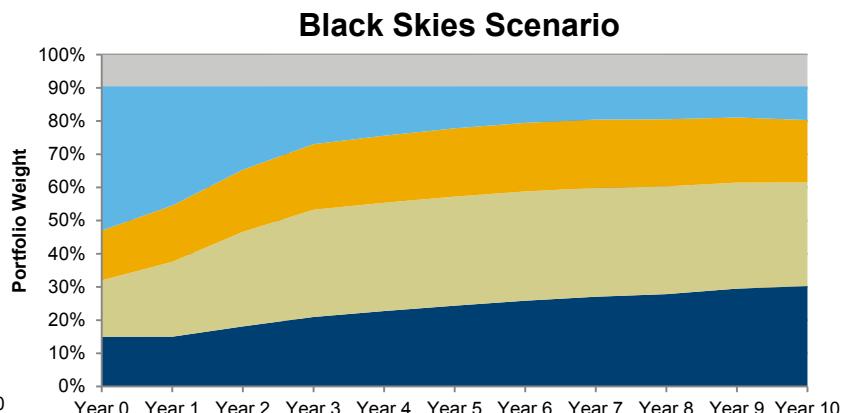
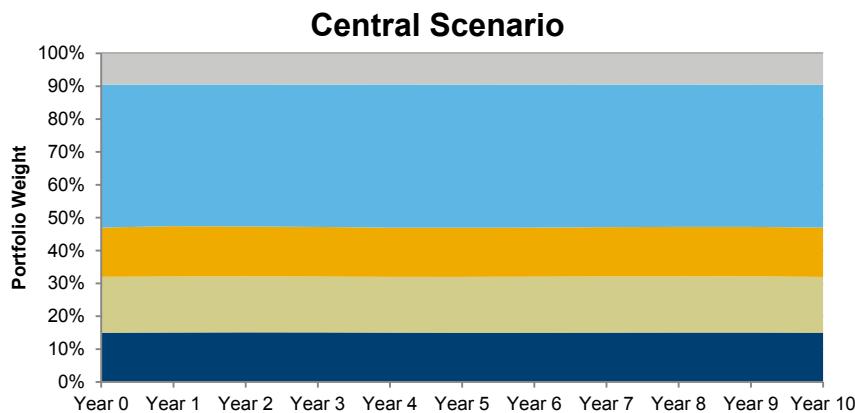
Portfolio Analysis



Liquidity Analysis

Legend:

- Illiquid: 10+ Years
- Illiquid: 5-10 Years
- Quasi-Liquid
- Liquid
- Risk-Reducing Assets



LACERS Portfolio Analysis

Risk & Return Expectations¹

ATTACHMENT A

Asset Classes	LACERS
Domestic Equity	24%
Non-U.S. Equity (78% Developed and 22% EM)	29%
Fixed Income (Core)	19%
Credit Opportunities (50% HY, 40% EMD, and 10% Bank Loans)	5%
Private Equity	12%
Real Assets (50% Private RE, 30% TIPS, 10% Commodities, and 10% REITs)	10%
Cash	1%
30 Year Capital Market Assumptions – 1Q 2017	Fiscal Year 2017 – 2018
Expected Nominal Returns (%)	6.89%
Expected Real Return (%)	4.59%
Expected Volatility (%)	13.21%
Sharpe Ratio	0.309
10 Year Capital Market Assumptions – 1Q 2017	Fiscal Year 2017 – 2018
Expected Nominal Returns (%)	6.65%
Expected Real Return (%)	4.35%
Expected Volatility (%)	12.89%
Sharpe Ratio	0.345

Source: LACERS Portfolio Performance Review – Quarter Ending December 31, 2016

Aon Hewitt Long-Term Capital Market Assumptions (10 and 30 Years) – 2017 Q1

All expected returns are geometric and net of investment management fees

The opinions referenced are as of the date of publication and are subject to change due to changes in the market or economic conditions and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice.

Capital Market Assumptions is an internal modeling analysis that represents AHIC's long-term capital market outlook. Expected return and Surplus Volatility are model results based on 10 and 30-year Aon Hewitt Capital Market Assumptions with no consideration for alpha for actively managed funds. The information presented is for illustration purposes.

AHIC Capital Market Assumptions–1Q 2017

	10 Year		30 Year	
	Expected Nominal Return	Expected Risk	Expected Nominal Return	Expected Risk
U.S. Equity (Large-Cap)	6.4%	17.0%	6.4%	17.5%
U.S. Equity (Small-Cap)	6.6%	23.0%	6.9%	23.5%
Global Equity	7.1%	18.5%	7.2%	19.0%
Developed Non-U.S. Equity	7.1%	20.0%	7.0%	20.5%
Emerging Markets Equity	7.7%	30.0%	7.7%	30.5%
Core (Market Duration) Fixed Income	3.0%	4.0%	3.8%	5.0%
TIPS	2.9%	4.5%	3.5%	4.5%
Hedge Funds (Buy List)	5.1%	9.0%	5.5%	9.5%
Private Real Estate (Core)	5.1%	11.5%	5.1%	11.5%
Infrastructure	5.9%	14.5%	6.2%	14.5%
Emerging Market Debt (Sov USD)	4.5%	13.0%	5.5%	14.0%
High Yield Bonds	4.3%	12.0%	5.6%	12.0%
Bank Loans	4.8%	7.0%	5.1%	7.5%
Inflation (CPI)	2.2%	--	2.2%	--

Aon Hewitt Long-Term Capital Market Assumptions (10 and 30 Years) – 2017 Q1

All expected returns are geometric and net of investment management fees

The opinions referenced are as of the date of publication and are subject to change due to changes in the market or economic conditions and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice.

Capital Market Assumptions is an internal modeling analysis that represents AHIC's long-term capital market outlook. Aon Hewitt's Capital Market Assumptions are our asset class return, volatility and correlation assumptions. The return assumptions are 'best estimates' of annualized returns. By this we mean median annualized returns – that is, there is a 50/50 chance that actual returns will be above or below the assumptions. The assumptions are long term assumptions, based on a 10 year projection period and are updated on a quarterly basis. The information presented is for illustration purposes.

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Aon Hewitt Investment Consulting, Inc. is a federally registered investment advisor with the U.S. Securities and Exchange Commission. AHIC is also registered with the Commodity Futures Trading Commission as a commodity pool operator and a commodity trading advisor, and is a member of the National Futures Association. The AHIC ADV Form Part 2A disclosure statement is available upon written request to:

Aon Hewitt Investment Consulting, Inc.
200 E. Randolph Street
Suite 1500
Chicago, IL 60601
ATTN: AHIC Compliance Officer

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NEPC, LLC

YOU DEMAND MORE. So do we. SM



Los Angeles City Employees' Retirement System

Investment Consulting Presentation

May 9, 2017

Carolyn Smith, Partner
Don C. Stracke, CFA, CAIA, Senior Consultant
Kevin Novak, Consultant

255 State Street, Boston, MA 02109 | TEL: 617.374.1300 | FAX: 617.374.1313 | www.nepc.com

BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

Agenda

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NEPC's Value Proposition

Custom Solutions

We strive to balance a deep understanding of your organization to build a forward-looking investment solution that achieves your goals and objectives

We believe in custom solutions and an adaptive client service model to fit your needs

In addition to our large research platform and consulting teams, we have a large performance reporting platform to meet your custom requirements

Direct Access and Resources

We've received significant recognition from independent surveys for our proactive approach, stability, and client service

Our Research Specialists are available to help provide additional education and insights; we commit this resource directly to our clients

We generate ideas through the depth and breadth of our research and are not afraid to take a differentiated view

Stability

As a Partnership, we are committed to remaining independent

Our business model has been diversified since our inception

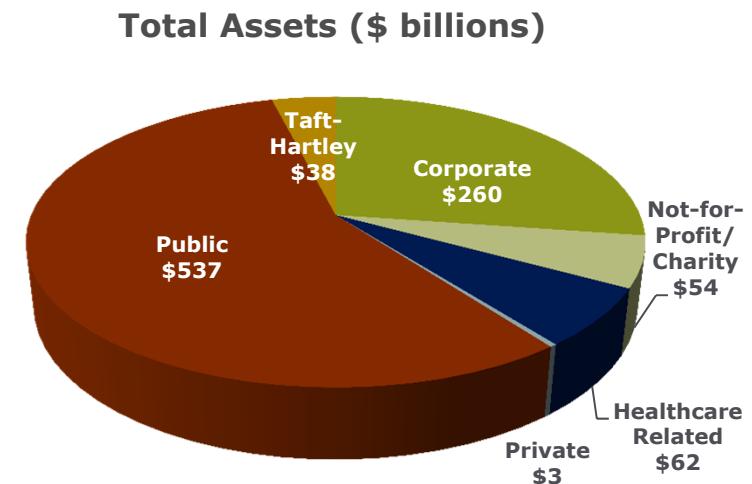
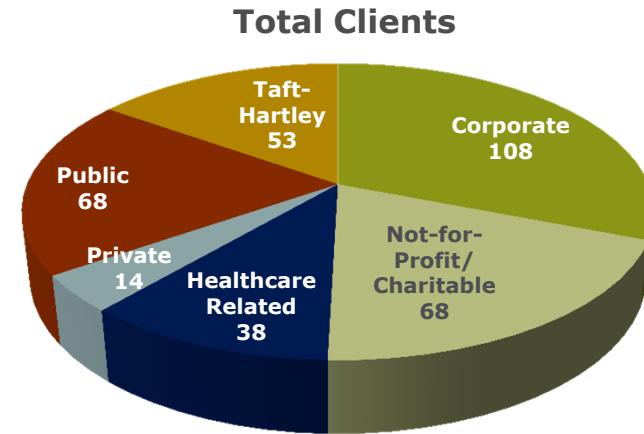
We've made the necessary investment in resources to provide stability for our clients

Long-tenured, senior employees with less than 5% turnover historically

Introduction to NEPC

About NEPC

- **Established in 1986 in Boston, MA**
- **256 employees in 8 regional offices**
- **Employee-owned with 36 partners**
- **100% of revenue from advisory and discretionary consulting services**
- **349 institutional clients¹**
- **\$954 billion assets under advisement¹**
 - Public funds account for over 56% of total assets
 - **Practice groups within NEPC deliver expertise by client type**



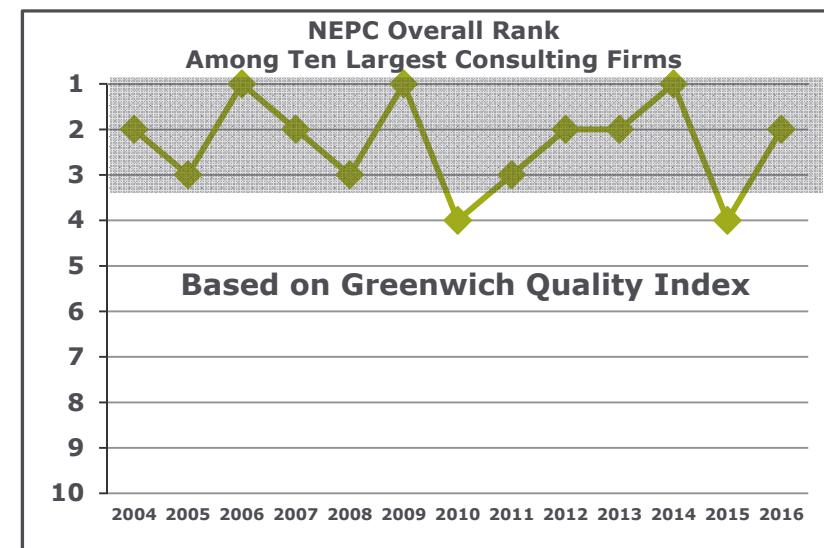
BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

Client Satisfaction

- **NEPC was named a “Greenwich Quality Leader” by Greenwich Associates in 2016**



- **NEPC has consistently achieved favorable client satisfaction ratings among the ten largest firms:**
 - Greenwich Quality Index (GQI) ranking in the top three in 11 of the last 13 years
- **NEPC compensates its non-partner employees with a supplemental Quality Bonus whenever our client ratings rank us in the top three among the ten largest investment consulting firms**
- **Greenwich Associates surveys over 1,000 large plan sponsors regarding their investment consulting relationships**



Source: Greenwich Associates, 2016 Evaluations by U.S. Institutional Investors.

- Greenwich Associates is an independent research firm. Their rankings do not represent an endorsement of NEPC.
- Past performance is no guarantee of future results.
- See Disclosures for important disclosures that should be viewed in connection with this exhibit.

Representative Client List

Public

AC Transit Employees' Retirement
 Arizona Public Safety Personnel Ret. System
 Arizona State Retirement System
 Baltimore County ERS
 Boston Water and Sewer Commission
 Chicago Laborers' & Retirement Board
 Employees' Annuity & Benefit Fund
 Chicago Policemen's Annuity & Benefit Fund
 City of Boston - Trust Funds
 City of Detroit, Michigan
 City of Fresno Retirement Systems
 Fairfax County Uniformed Retirement System
 Los Angeles County Savings Plan
 Los Angeles County Deferred Compensation Plan
 Louisiana State Employees Retirement System
 Massachusetts Water Resource Authority
 New Mexico Educational Retirement Board
 Ohio Public Employees Retirement System
 Philadelphia Housing Authority
 Regional Transportation Authority
 San Antonio Fire & Police Pension Fund
 San Bernardino County ERA
 San Francisco Employees' Retirement System
 Seattle City Employees' Retirement System
 St. Louis Public School Retirement System
 State Boston Retirement System
 State of Vermont
 State Universities Retirement System of Illinois
 State of Wisconsin Investment Board
 Ventura County ERA
 West Virginia Board of Treasury Investments

Taft-Hartley

ABC-NABET
 Boston Newspaper
 Boston Plasterers' & Cement Masons' Local 534
 Boston Shipping Association
 Desert States UFCW Pension Fund
 Fulton Fish Market
 IBEW Local 357
 IUOE Locals 12 & 324
 Sheet Metal Workers Local 40
 Southern California IBEW-NECA
 Teamsters Local 856
 UFCW - Northern California
 Western Pennsylvania Teamsters & Employers

Corporate

Ahold USA
 Becton Dickinson and Company
 Bose Corporation
 Colgate-Palmolive Co.
 Earthlink,
 JM Family Enterprises, Inc.
 Jones Day
 Marriott International
 National Grid
 Ocean Spray Cranberries, Inc.
 Southwest Airlines Co.
 ThermoFisher Scientific, Inc.
 TimkenSteel Co.
 United Technologies Corporation

Healthcare Related

Baylor, Scott & White Health LLC
 Boston Medical Center
 Christus Health
 Henry Ford Health System
 Johns Hopkins Health System
 Lahey Clinic
 Multicare Health System
 Rochester Regional Health
 Rush University Medical Center
 Shriners Hospitals for Children, Inc.
 St. Barnabas Hospital
 University of Maryland Medical System

Endowments & Foundations

Community Foundation for SE Michigan
 Dartmouth Hitchcock Hospital & Clinic
 Hebrew Immigrant Aid Society (HIAS)
 Kaleida Health
 MaineGeneral Healthcare
 Several High-Net Worth Foundations
 Unitarian Universalist Association of Congregations

This client list is only a sample. It is not known whether or not the clients approve of the services received. It should not be considered an endorsement by any individual client listed.

As of 3/31/2017

Client Type	Retainer Clients	Funds less than \$1.5B	Funds greater than \$1.5B	Total Assets	Average Client Size	Median Client Size
Public Fund	68	26	42	\$537 billion	\$7.9 billion	\$2.0 billion



NEPC, LLC

Dedicated Consulting and Research Teams

NEPC employs 49 dedicated research professionals¹

- Traditional manager research is a cornerstone of our efforts
- One of the largest alternative asset research groups in the industry
- Four actuaries on staff, one consultant with formal actuarial training, and one PhD specializing in risk budgeting and asset allocation



Client Commitment

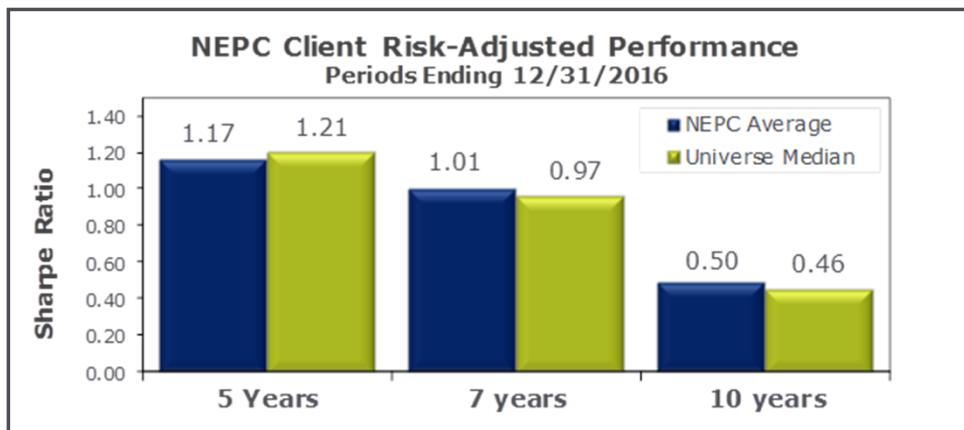
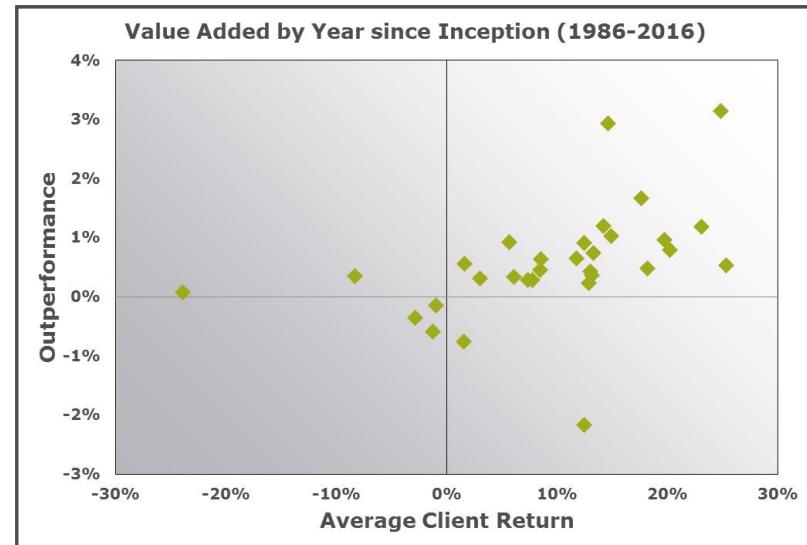


Selective growth

- Balance resources, product and services
- Recognize increased servicing requirements
- Declined 178 RFPs in 2016

Our Clients' Results – NEPC's Overall Composite

- Our collective client base has outperformed the InvestorForce/ICC median¹ in 26 of the 31 years since our founding in 1986



- Outperformance on a risk-adjusted basis for seven and ten years, as measured by the Sharpe Ratio
- Reflects the impact of both asset allocation and manager performance

¹ The median fund in the \$3.3 trillion InvestorForce Universe (or the ICC Universe through 2011) represents average performance among a nationwide sample of plan sponsor results. NEPC and universe results are both gross of fees. Past performance is no guarantee of future results. Please see additional information on the Client Results Disclosure page.

NEPC's Values Driven Culture

- **Treat our employees like our clients**
 - Listen and respond with creative solutions
 - Respect individuality and innovation
 - Create an environment where intellectual capital can thrive
- **Be an excellent employer**
 - Competitive benefits and compensation
 - Corporate citizenship and community involvement
 - Work hard and have fun
- **Maintain our competitive advantage**
 - Attract the best talent in the industry
 - Develop an employment brand that competitors proactively seek
 - Provide career opportunities for all levels
 - Invest in training and development
 - Strive for diverse workforce

Employees – Clients of HR and the Management Team

- **Workplace dynamics survey (bi-annual feedback)**
 - Strategic HR goals are driven by survey results
 - Recent focus on Efficiency, Communication and Employee Development
- **Flexible work environment**
 - Flex-Work Program
 - Flex Fridays
- **Rewards and recognition**
 - Individual and teams – DNA Awards
 - Tokens of Appreciation – On the Spot
- **Formal training programs and resources**
 - Tuition and certification reimbursement
 - Leadership and management development
 - Client consulting skills programs
 - Employee development
- **Be an excellent employer by giving back**
 - Community service – i.e., United Way, Lee Denim Day, Boston Food Bank, Habitat for Humanity, Las Vegas Half Marathon, Movember
 - Charitable organizations – i.e., Urban Improv, Youth Activities in Training, United Negro College Fund, NAACP, Boston Strong

Diversity Outreach

- **Longstanding relationship and support of Year Up**
 - Boston Chapter – Closing the opportunity divide for underprivileged urban youth
 - Involvement has included fundraising, mentoring, mock interviews, internships and the hiring of two employees
- **Three-year relationship with Gateway to Leadership Program (Money Management Institute and UNCF Partnership)**
 - NEPC has sponsored 3 individuals for 10 week program
- **Atlanta Portfolio Analyst function**
 - Focus on diversity for entry-level roles
 - Targeted schools included: Morehouse, Spelman and Emory
 - Hired 4 analysts
 - Summer internship opportunity at Morehouse and Spelman
- **Opportunistic hiring**

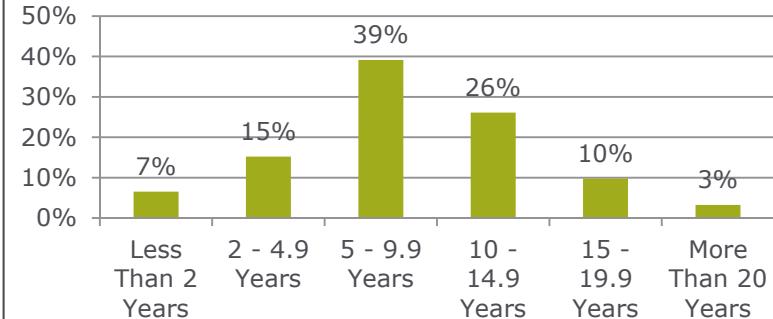
Investing in Talent

- **LEAD Into the Next Generation: Formal Leadership Development Program**
 - Coaching, formal 360 feedback, Partner mentoring and formal training
 - Diversity and high potential talent are two key criteria for selection
 - Six total in program (2 African American participants and 2 female)
- **Women's Leadership Forum**
 - Monthly meetings for senior women at NEPC
 - Coach one another for success
 - Present business challenges for advice/insight
 - Invite outside speakers and diversity consultants
- **Partner Training Series**
 - Investment or business related topics presented by Partners
 - Open to employees at all levels
- **Formal Entry-Level Mentor Program**
 - Project based
 - 6 month program
 - Formal mentoring
 - Presentation training and delivery

Longevity of NEPC Consultants and Clients

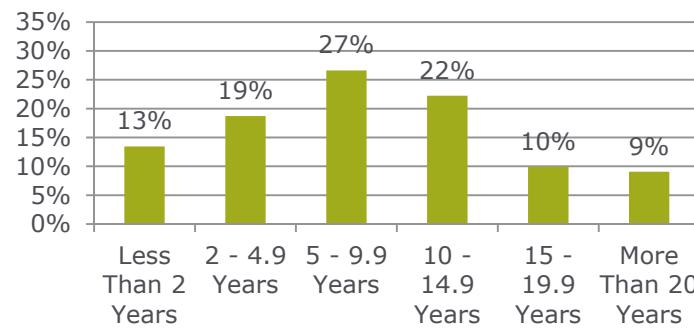
- **NEPC consultants have shown commitment to our clients and to our firm**
- **78% of our consultants have been with NEPC for 5 years or longer**

Longevity of NEPC's Consultants

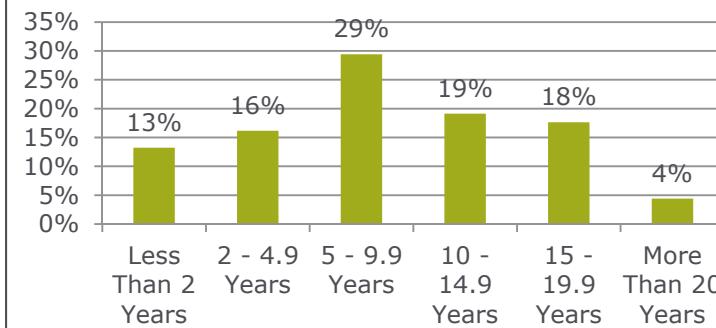


- **68% of clients (71% Public Funds) have retained NEPC for 5 years or longer**

Longevity of NEPC's Total Client Base



Longevity of NEPC's Public Fund Clients



Our Consulting Philosophy and Process

Our Investment Philosophy – How We Help Clients¹

- **Focus of NEPC's consulting approach**
 - Building diversified portfolios
 - Demonstrate a clear understanding of the relevant risks within client portfolios
 - Asset allocation increasingly based on liabilities and spending needs
 - Prudent use of active, passive, and alternative strategies
 - Pursuit of higher risk-adjusted returns
- **Blend of strategic and tactical**
 - Long term strategic policy is the cornerstone
 - Opportunistically adjust the portfolio as conditions warrant
- **Client attributes require different solutions**
 - Required return and risk tolerance
 - Staffing and resource levels
 - Investment acumen of staff and committee members
 - Tolerance for legal complexities
 - Desired level of investment complexity

¹ Each client account is individually managed thus actual holdings, performance and satisfaction will vary for each client and there is no guarantee that a particular client's account will have the same characteristics or performance. Past performance is no guarantee of future results.

NEPC Process

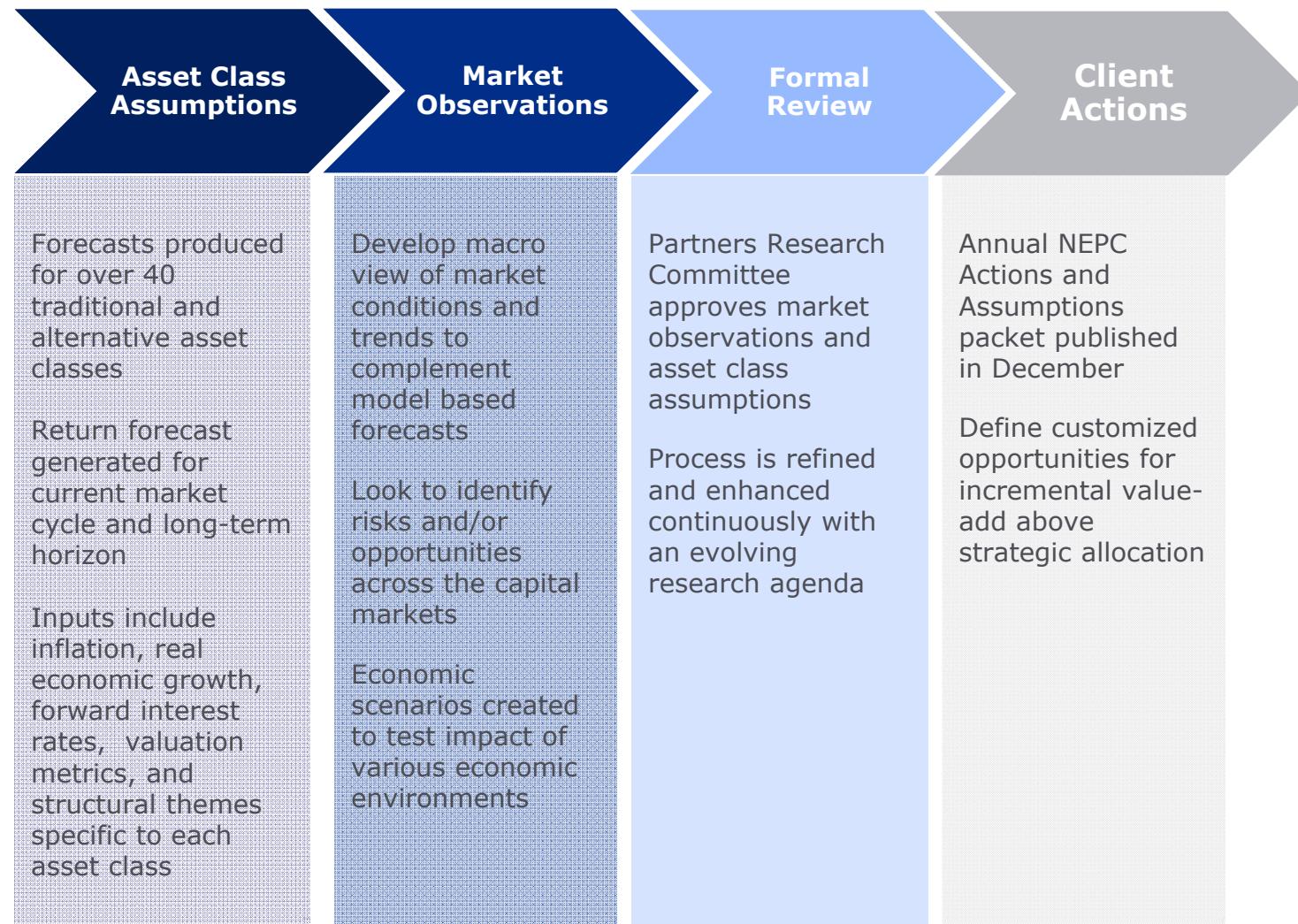
Research and Client Service Teams work jointly to provide best in class tools and dashboards that help drive Client decisions toward custom solution

- Research creates and updates tools
- Client Service Team uses tools specific based on individual Client needs
- While not all tools/dashboards are applicable to all clients, they are available to all when needed



Capital Markets and Asset Allocation

NEPC Research Process Leads to Strategic Actions

NEPC's Asset Allocation Committee (AAC) oversees the development of asset class assumptions and broad client actions.

NEPC 2017 Themes, Actions and Opportunities for Clients

Key Market Themes

- Extended US Economic Cycle
- Federal Reserve Gradualism
- China Transitions
- Globalization Backlash

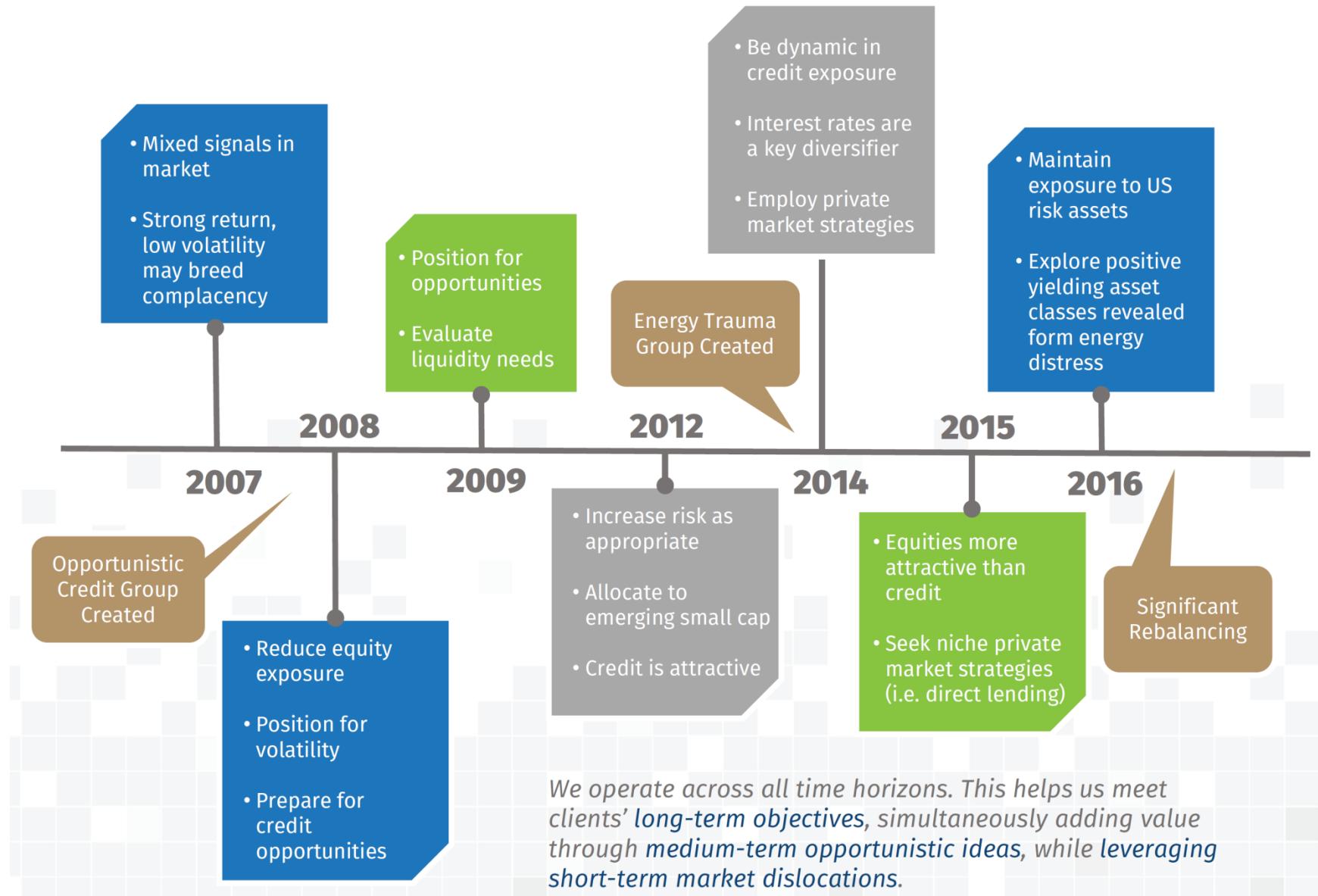
Strategic Policy Actions

- Evaluate Feasibility of Objectives
- Reassess Investment Structure
- Examine the Cost of Core Exposures
- Review Investment Governance

Current Opportunities

- Trim US Equity Gains
- Overweight Non-US Developed Market Equities
- Emerging Market Equities Remain Attractive
- Allocate to TIPS from Core Bonds
- Reduce High Yield for Other Credit Strategies
- Fund Emerging Local Debt from Risk Assets
- Add Macro Hedge Funds

Blend of Strategic and Dynamic Views – Actions by Year



Asset Allocation Team – Dedicated Resources

- **Dedicated Asset Allocation Team**
 - Portfolio construction analysis
 - Asset/Liability studies
 - Portfolio liquidity studies
 - Target Date Fund glide path analysis
 - Tax aware asset allocation recommendations
- **Ongoing Market Outlook**
 - Publish quarterly tactical views and outlook
 - Publish monthly commentary
 - Discuss roles of investments in portfolios
 - LDI glide path recommendations
- **Development of asset allocation tools**
 - Risk budgeting development
 - Scenario testing development
 - Efficient frontier construction
 - Asset class risk factor exposures

Asset Allocation Team

Christopher Levell, ASA, CFA, CAIA
Partner*

Phillip Nelson, CFA
Principal, Director of Asset Allocation

Mark Cintolo, CAIA
Senior Consultant

Lynda Dennen, ASA, EA
Senior Consultant

Ian Spencer
Senior Research Analyst

Jennifer Appel
Research Analyst

Asset Allocation Committee

- **Asset Allocation Committee**
 - Approves asset class return assumptions
 - Assesses current market risks
 - Develops “Actions and Observations”
 - Approves annual “General Actions for Clients”
- **Ongoing Research Initiatives**
 - Asset class assumption development
 - Asset class volatility and correlation profiles
 - Currency analysis: Developed and Emerging
 - Analysis of private market risk factors
- **Ongoing formal review**
 - Over 40 traditional and alternative asset classes
 - Compare recommendations with market trends
 - Review of proprietary asset class models
 - Targeted asset allocation research

Asset Allocation Committee

Christopher Levell, ASA, CFA, CAIA
Partner*

James Reichert, CFA
Partner*

Tim McCusker, FSA, CFA, CAIA
Chief Investment Officer*

Phillip Nelson, CFA
Principal, Director of Asset Allocation

Jennifer Appel
Research Analyst

Mark Cintolo, CAIA
Senior Consultant

Lynda Dennen, ASA, EA
Senior Consultant

Richard Kurdi
Systems Integration Specialist

Dulari Pancholi, CFA, CAIA
Senior Research Consultant

Matthew Ritter, CAIA
Senior Research Analyst

Ian Spencer
Senior Research Analyst

Elton Thomaj
Senior Analyst

Practice Group Representatives

Corporate DB

Corporate DC

Endowment & Foundation

Private Wealth

Public Fund

Taft-Hartley

As of 1/31/2017

* Ownership interest in NEPC (Partner)

Concepts For Constructing Portfolios

Be Dynamic

Build a **long-term** strategic allocation that can meet long-term objectives

Look for **medium-term** “opportunistic ideas” to tilt away from the strategic allocation to add value, AND

Take advantage of **short-term** market dislocations

Build a Mosaic

No single asset allocation approach or model has all the answers

Minimize exposure to the shortcomings of any individual approach by using multiple perspectives and approaches

All analytical tools have the potential to provide useful insights but also including shortcomings



Asset Allocation Philosophy and Differentiators



Long-term **strategic asset allocation**, customized to your needs, is the cornerstone of the investment program

We believe in a multi-faceted asset allocation process that incorporates the **dynamics of the markets** and considers various time horizons and events



We believe in a well-balanced collection of long-term risk premiums as a starting point for identifying sources of risk for an organization

We are constantly monitoring market conditions so that we can be **proactive and opportunistic** to identify opportunities for enhancing portfolio structure



We believe in a constant **pursuit of best ideas across markets**, asset classes and structures with favorable investor terms

To do this, we research execution strategies by considering opportunities and risks across asset classes and liquidity spectrum and communicate these insights to you with actionable ideas



We favor managers that are flexible and seek to **uncover or build opportunistic and dynamic strategies**

Our implementation tools help size strategies appropriately and understand each strategy's contribution to tracking error, or active risk, within your portfolio

Traditional and Alternative Asset Research

Research Team -- Client Focused



Tim McCusker, FSA, CFA, CAIA
Chief Investment Officer

Client Strategy & Asset Allocation
Christopher Levell, ASA, CFA, CAIA, Partner
Kristi Hanson
Director of Taxable Research

8
Employees

Traditional Research
Timothy Bruce
Partner

12
Employees

Alternatives Research: Hedge Funds
Neil Sheth
Partner

11
Employees

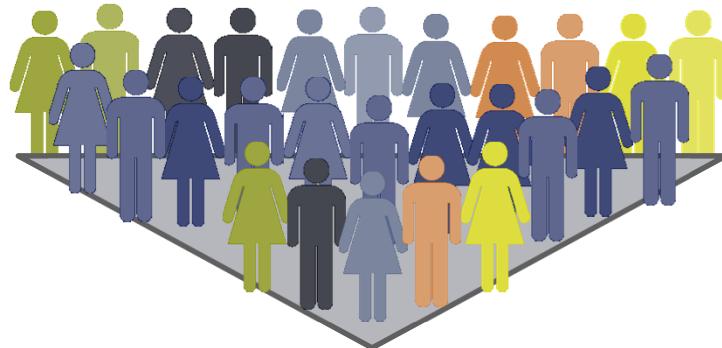
Alternatives Research: Private Markets
Sean Gill
Partner

14
Employees

Operational Due Diligence
William Bogle
Partner

3
Employees

49 Dedicated Research Employees generate client output



Strategic/Dynamic Market View

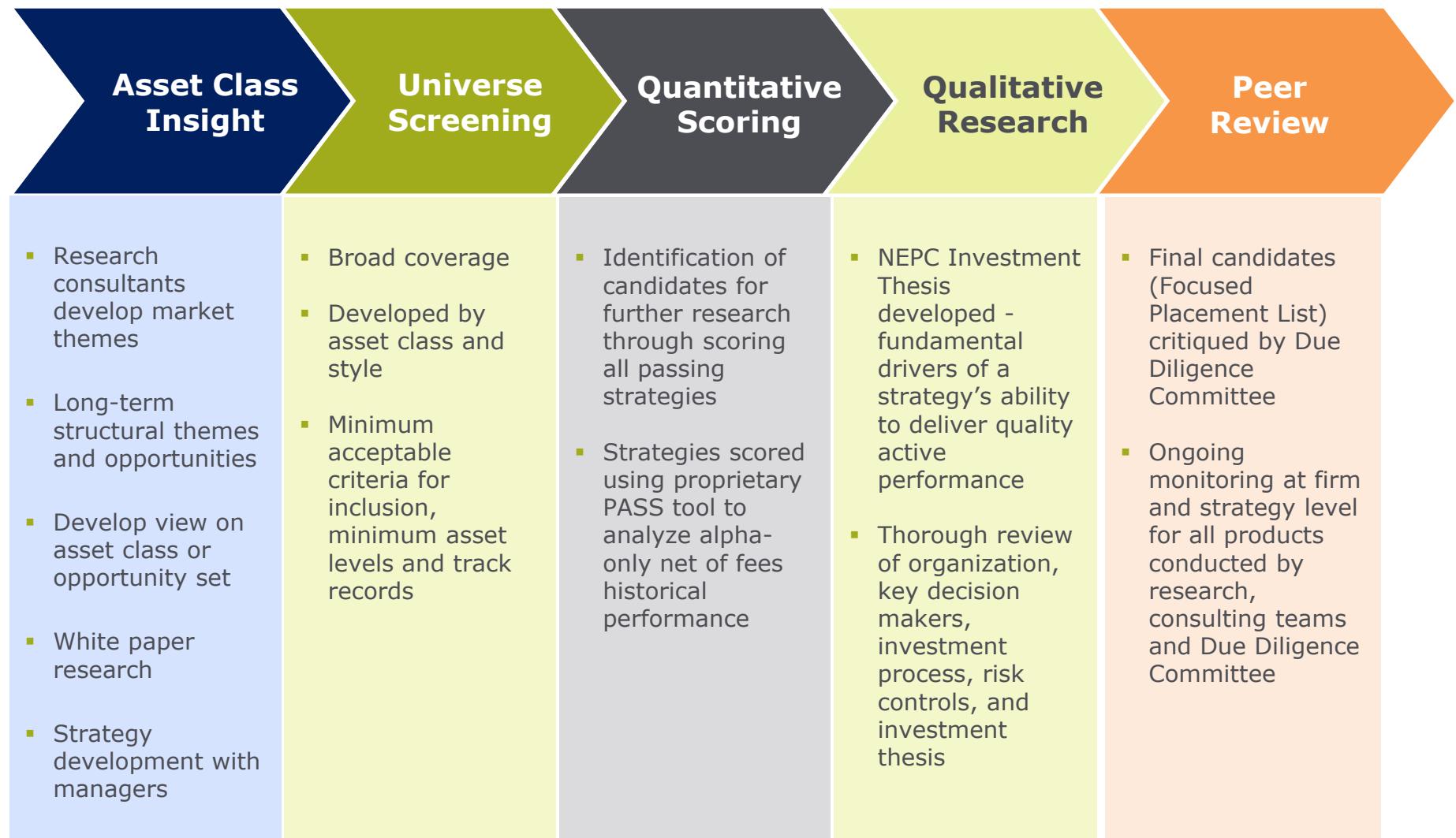
Manager Selection and Monitoring

Optimize Positioning

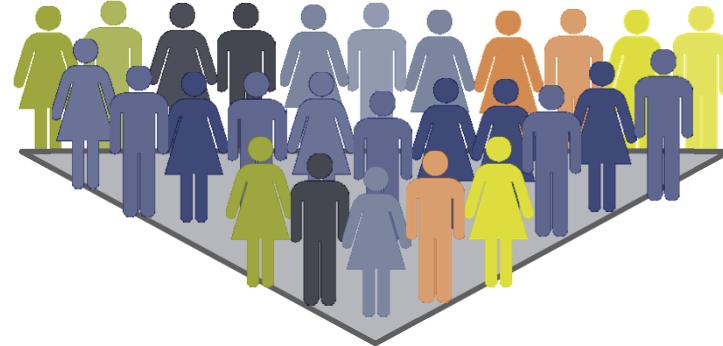
Accessibility and Communication

Education

Manager Selection: Defined Process

Our research process is based on continuous innovation and idea sourcing

Manager Selection: Depth of Research Leads to Excellence in Manager Selection and Monitoring



Rate more than
1,300+
investment
strategies

Performed more
than **2,600**
manager meetings
in 2016, **315** in
manager offices

\$30.5 billion
total search assets
in **714** searches
in 2016

Average of **50**
manager meetings
outside of the U.S.
annually.¹

Goal is to identify managers
that will generate superior
performance for clients

Manager Selection: Multiple Benefits NEPC Research Bring to Clients

NEPC Research: Size | Scale | Depth | Breadth

Negotiating Power with Managers on Accessibility and Fees

We have successfully negotiated better fees and terms for our clients in many funds

Pooling of client assets allows us to access select funds and hit minimums that could not be achieved individually

Diverse and Expansive Manager Roster

Traditional:
Preferred List Categories: 52
Preferred List Strategies: 400+

Hedge Funds:
Preferred List Categories: 11
Preferred List Strategies: 70+
Assets under Advisement: \$27.8 billion¹

Private Markets:
Preferred List Categories: 15
Preferred List Managers: ~50 yr
Assets under Advisement: \$27.3 billion¹
Partnerships Tracked: 875

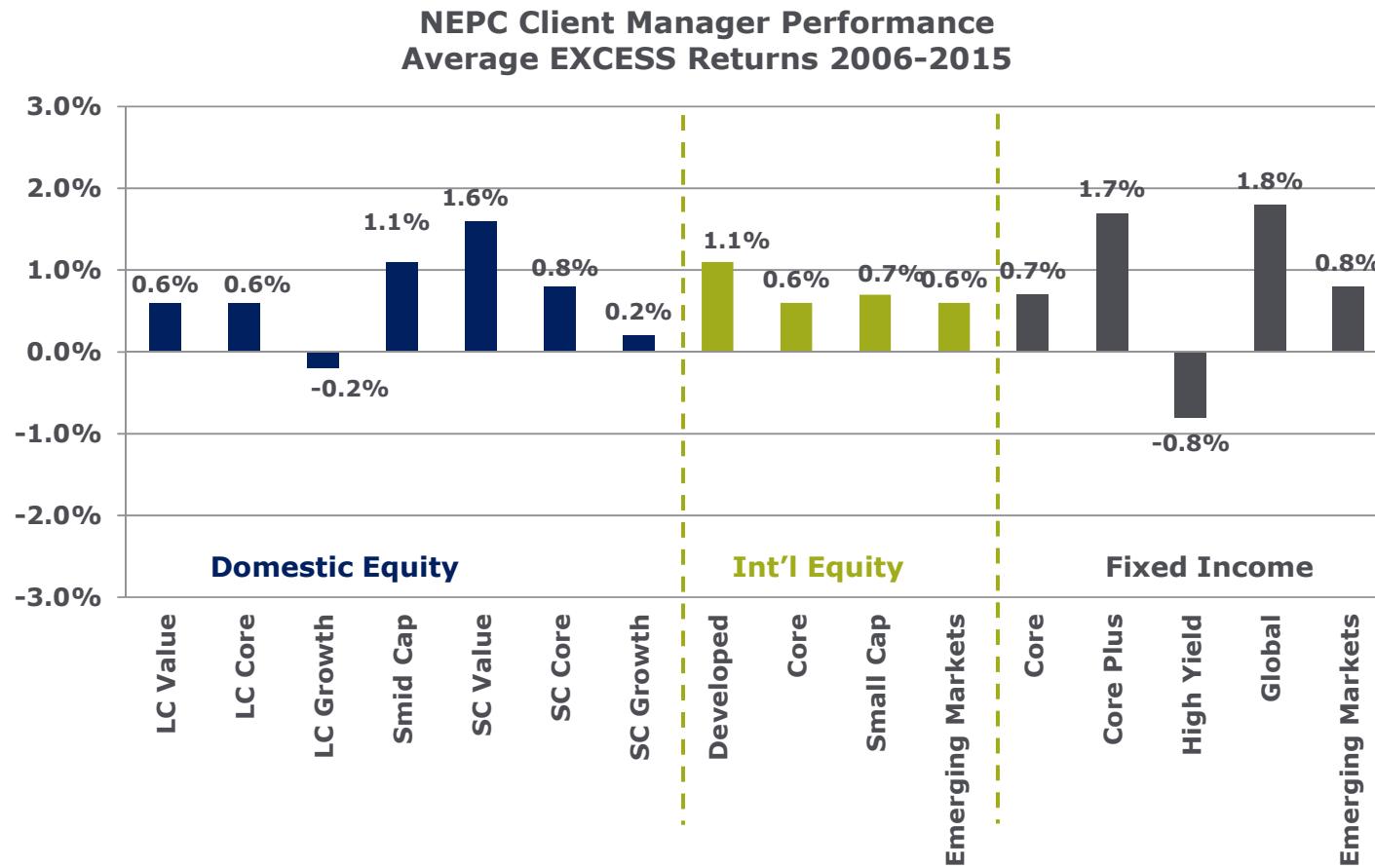
Identification and Underwriting of New/ Innovative Markets, Managers, and Products

Early Investor/Underwriter of many new products and strategies

Work with managers to establish/develop products and strategies to meet needs

Committees dedicated to ESG and Diverse Manager research

Manager Selection: Traditional Manager Performance



The data represents the average gross return of all current or former managers across all current or former NEPC clients, excluding outliers. Outliers are defined as accounts two standard deviations from the median annual performance for each asset class. Not all managers were placed by NEPC. All plan and sponsor types reported through InvestorForce are included. Does not include passively managed accounts (index funds), accounts NEPC does not advise on, or accounts being funded or liquidated.



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Past performance is no guarantee of future results.
Please see additional information on the Disclosure page.

MWDBE Manager Research

- **Philosophy**

- MWDBE Managers add value by:
 - Nimble nature of these firms in conjunction with less capacity constraints than their larger brethren
 - Diversification of talent and ideas
 - A strong alignment of Principals' and clients' interests

- **Goals**

- Proactively expand selection and recommendation of MWDBE Managers
- Identify top tier firms across all asset classes (public/alternatives)
- Maintain a high performing focus list
- Thought leadership in MWDBE Manager Research
- Customize emerging manager programs

- **Meet the Team**

- **Kristin R. Finney-Cooke, CAIA, Senior Consultant**
- **Donna Szeto, CFA, Senior Research Consultant**
- Tim McCusker, CAIA, CFA, FSA, Chief Investment Officer, Partner
- Tim Bruce, Partner, Director of Traditional Research
- John Krimmel, CPA, CFA, Partner
- Douglas Moseley, Partner
- Steve Gargano, Senior Research Consultant
- Jeff Markarian, Senior Research Consultant
- William Forde, CAIA, Consultant
- DeAnna Jones, Senior Analyst
- Kim Kaczor, Senior Analyst

MWDBE Manager Research (Cont.)

- **Identify MWDBE Managers**

- Website manager information submissions for manager ease
- “Open Door Meeting Policy”
- Participation in relevant conferences and industry organizations
- Client recommendations

- **Evaluation Process**

- eVestment database
- Manager due diligence meetings
 - Quantitative factors are the same as those used with large bulge bracket majority firms
 - Performance measures
 - Risk Metrics
 - Attribution analysis
 - Some eligibility limits relaxed
 - Length of track record
 - Assets under management

- **Types of programs NEPC can implement**

- Manager of manager programs
- Direct programs
- Graduation programs
- Customized programs

- **Asset classes NEPC has experience evaluating in this space**

- Domestic Equity
- Non-US Equity
- Fixed Income
- Alternatives (Private Equity, Private Real Estate & Hedge Funds)

MWDBE Manager Experience

- **NEPC has significant client exposure to emerging manager firms**
 - Minority-owned firms as defined by greater than 50% minority ownership
- **64 clients with MWDBE manager exposure**
 - 476 active mandates through direct and manager of manager vehicles
 - Current client exposure is \$19 billion
- **NEPC has 377 minority managers in our proprietary database**
- **Presently NEPC has 19 MWDBE firms on our various preferred lists across all asset classes representing 28 strategies**



NEPC, LLC

As of December 2016

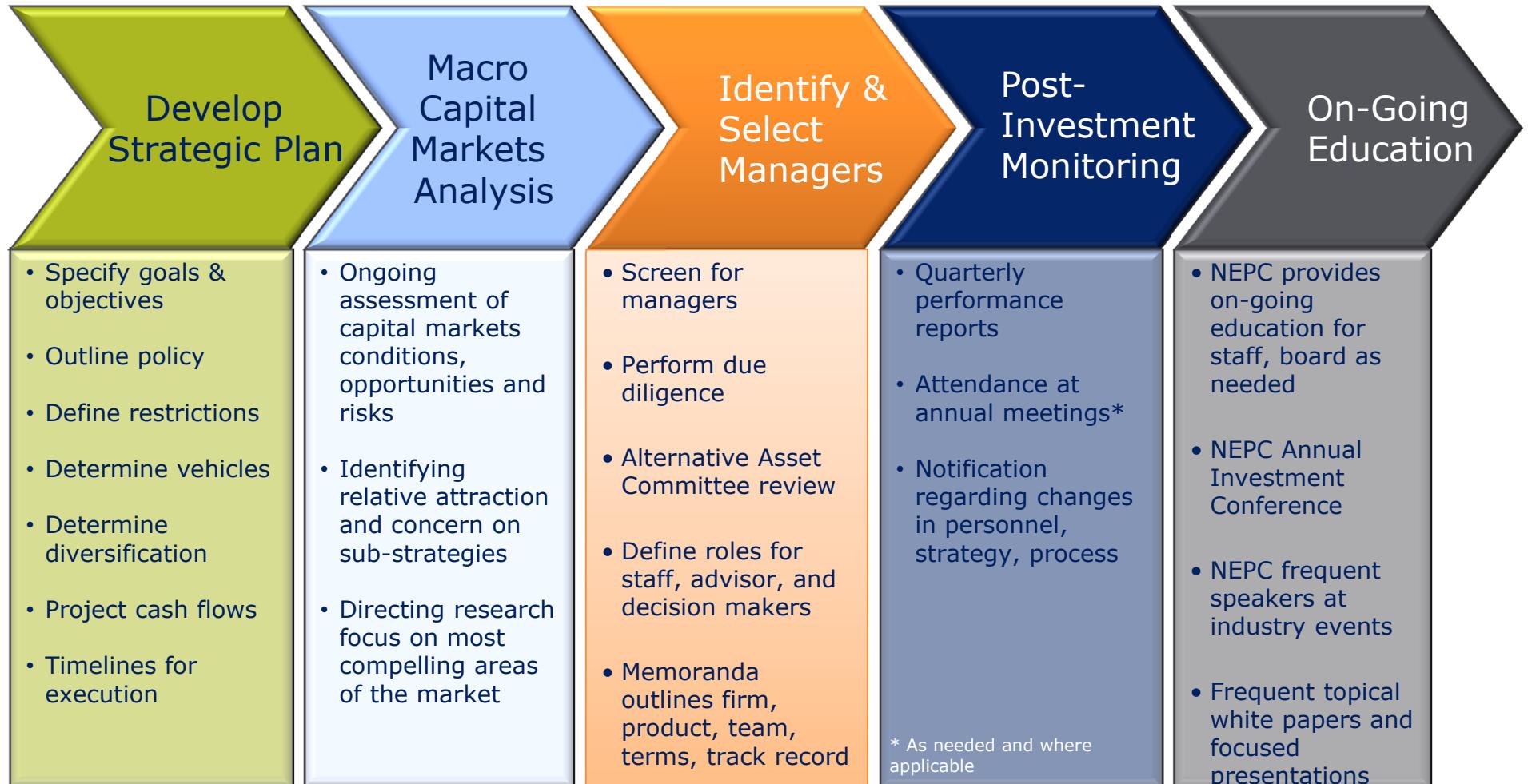
Alternative Assets Competitive Advantage

- **225 clients with \$55 billion in alternative assets¹**
 - \$27 billion in hedge funds
 - \$12 billion in private equity
 - \$4 billion in real assets
 - \$11 billion in real estate
- **Advising clients on alternative investments since 1994**
 - *Acquisition International's Hedge Fund Award* for Best Full-Service Investment Consulting Firm – USA (2016)²
 - *Wealth & Finance International's Alternative Investment Awards* for Sustained Excellence in Client Investment Management and for Macro Strategy Specialist of the Year – USA (2015)²
 - *InvestHedge's Investor Excellence Award* in the Consultant category (2012)²
- **28 professionals focused on alternative investments³**
 - 14 dedicated to hedge funds; 14 dedicated to private markets
 - Sean W.B. Gill, CFA, CAIA, Partner, Alternative Assets Client Strategy
 - 47 CAIA (Chartered Alternative Investment Analyst) designees firm wide
- **1,087 searches with \$20.6 billion in assets over the last 3 years**

Strategy	Number of Searches
Hedge Funds	169
Private Equity	591
Real Estate, Real Assets, Commodities	292

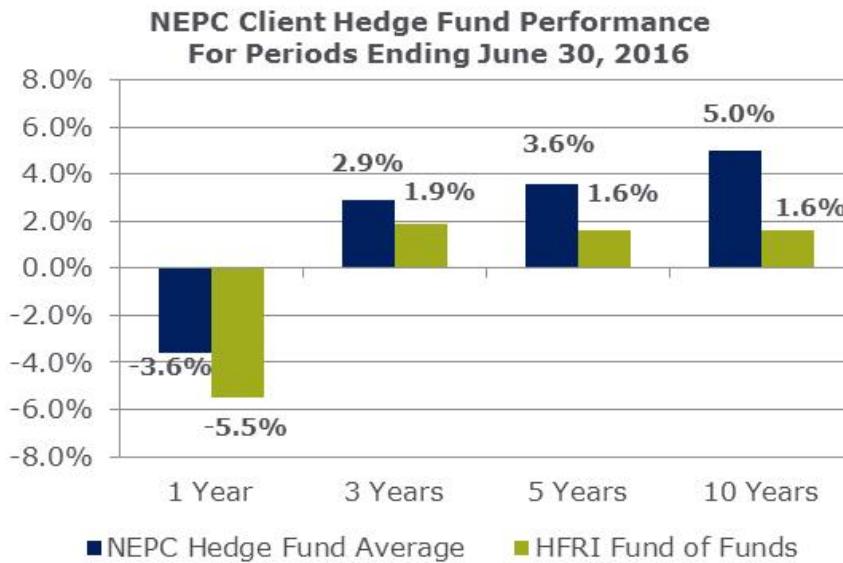
¹As of 6/30/16. ²Please see Appendix for important disclosures related to Awards & Recognition. ³As of 1/31/2017

NEPC's Alternative Assets Services

Fully integrated research process customized for every client

Manager Selection: Alternative Manager Performance

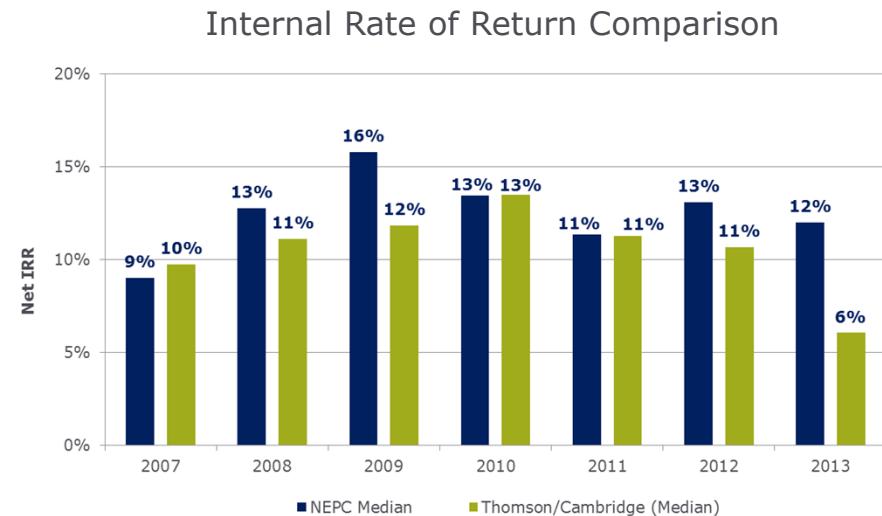
Hedge Funds



- Average excess returns of 208 basis points over 1, 3, 5 and 10 years
- Consistent returns across multiple strategies

Includes all NEPC client hedge funds available as of September 4, 2016, except clients NEPC does not advise on hedge funds. Not all managers were placed by NEPC. All fund and client types are included. NEPC averages are influenced by survivor bias. Returns are net of fee.

Private Equity



- IRRs outperformed the median in 4 of 7 years
- Track record benchmarks 88 private equity funds added to the NEPC FPL from 2007-2013
 - 68 additional FPL funds added in 2014-2016 that are too young to meaningfully benchmark

NEPC preferred fund returns are compared to the global private equity data sets from ThomsonOne/Cambridge Associates. Performance is as of June 30, 2016. Returns are net of fees and expenses.

Thoughts for Los Angeles City Employees' Retirement System

NEPC's Thoughts on LACERS' Plan

NEPC Thoughts on LACERS Pension Plan

- **Most of the investment managers are rated Neutral or Preferred at NEPC**
- **Current risks to achieving your goals:**
 - **Difficulty consistently achieving 7.5% return -- Plan expected to earn 6.5% based on NEPC's 5-7 year capital market expectations; suggests meeting goal over the short term will be difficult**
 - **High allocation to equities – Concentration risk which could lead to volatility in down markets**
 - **High allocation to core bonds – 19% -- NEPC believes there are better fixed income asset classes that can fill this role**
- **Items we would explore with LACERS:**
 - **Modified asset allocation that increases the consistency of achieving 7.5% each year**
 - **Reduce equity exposure**
 - **Explore additional private market exposure in private debt and real assets**
 - **Reduction in Core Bond exposure – consider diversified credit mandate**
 - **Diversify Equity Allocation – add Emerging Market Small Cap portfolio to take advantage of consumption/small cap theme**
 - **Use of more unconstrained mandates to provide increased flexibility, additional diversification and the potential for higher risk adjusted returns**

General Comments for LACERS

	Current Target	Sample A	Sample B
Cash	1.0%	1.0%	1.0%
Large Cap Equities	19.0%	14.0%	10.0%
Small/Mid Cap Equities	5.0%	5.0%	5.0%
Int'l Equities (Unhedged)	19.0%	7.0%	5.0%
Int'l Equities (Hedged)	0.0%	7.0%	5.0%
Int'l Sm Cap Equities (Unhedged)	3.0%	3.0%	3.0%
Emerging Int'l Equities	7.0%	4.0%	2.5%
Emerging Int'l Sm Cap Equities	0.0%	3.0%	2.5%
Private Equity	12.0%	12.0%	12.0%
Total Equity	65.0%	55.0%	45.0%
Core Bonds	19.0%	13.0%	9.0%
High-Yield Bonds	2.5%	0.0%	0.0%
EMD (External)	2.0%	3.0%	2.5%
EMD (Local Currency)	0.0%	3.0%	2.5%
Bank Loans	0.5%	0.0%	0.0%
Diversified Credit	0.0%	6.0%	5.0%
Private Debt	0.0%	4.0%	6.0%
Total Fixed Income	24.0%	29.0%	25.0%
TIPS	3.0%	4.0%	0.0%
Private Real Assets - Energy/Metals	0.0%	0.0%	4.0%
Real Assets (Liquid)	1.0%	0.0%	0.0%
Real Estate	6.0%	5.0%	6.0%
Total Real Assets	10.0%	9.0%	10.0%
Global Asset Allocation	0.0%	2.0%	3.3%
Risk Parity	0.0%	4.0%	6.7%
Hedge Funds	0.0%	0.0%	9.0%
Total Multi Asset	0.0%	6.0%	19.0%
Expected Return 5-7 yrs	6.5%	6.6%	6.8%
Expected Return 30 yrs	7.6%	7.7%	7.8%
Standard Dev	13.0%	12.5%	12.5%
Sharpe Ratio (5-7 years)	0.36	0.39	0.40
Sharpe Ratio (30 years)	0.36	0.37	0.38

Notes:

- Numbers may not add due to rounding
- Sample Mixes A and B are for illustrative purposes and are not necessarily recommended
- Expected returns are generally not adjusted for manager alpha
- Liquid Real Assets include REITs, Commodities

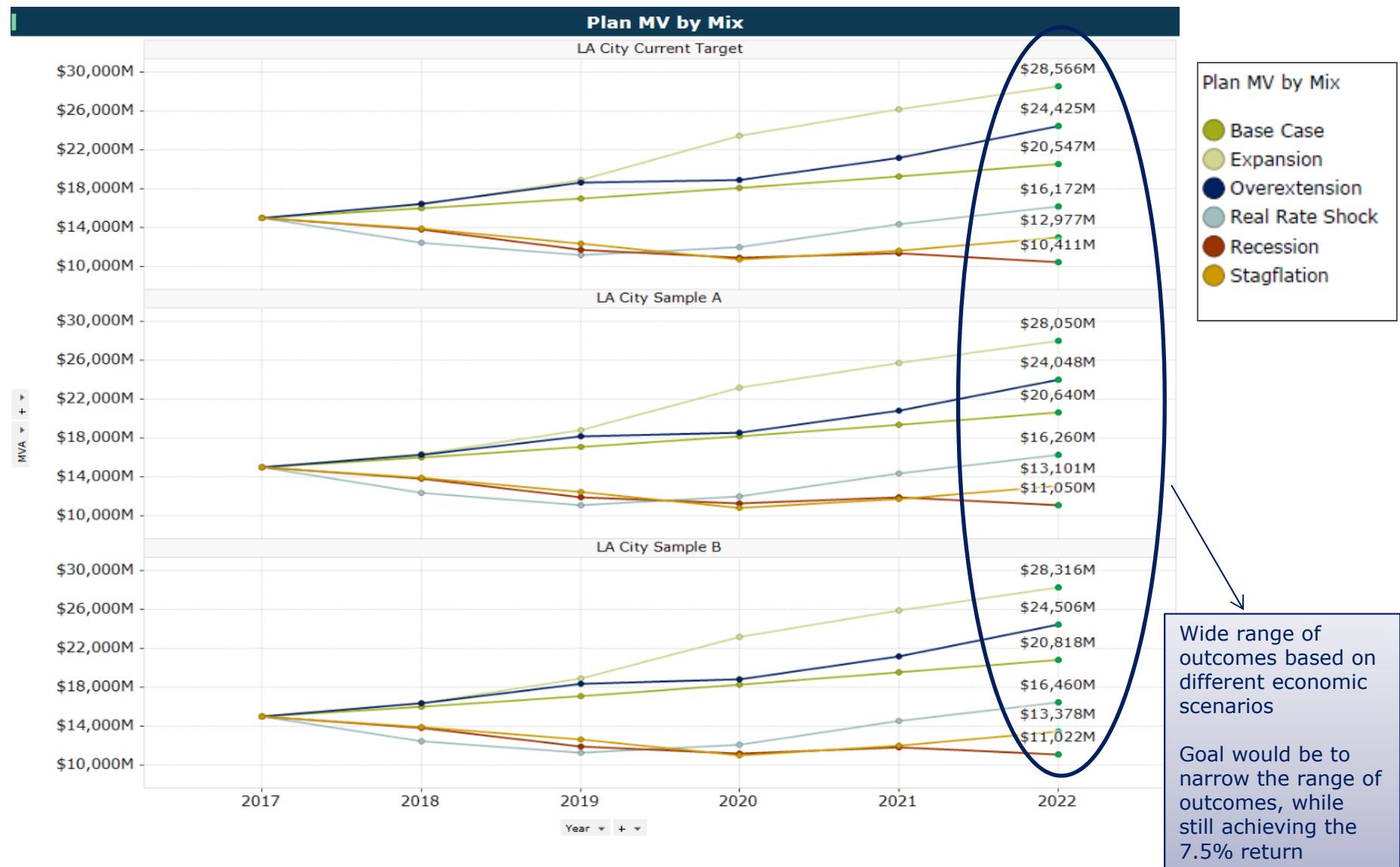
- **We sought a higher expected return to increase the likelihood of achieving LACERS' return goal of 7.5%**

- Despite increasing expected returns, our estimate for standard deviation went down
- It may be difficult to achieve a 7.5% return given the forecast for muted returns over the next 5-7 years

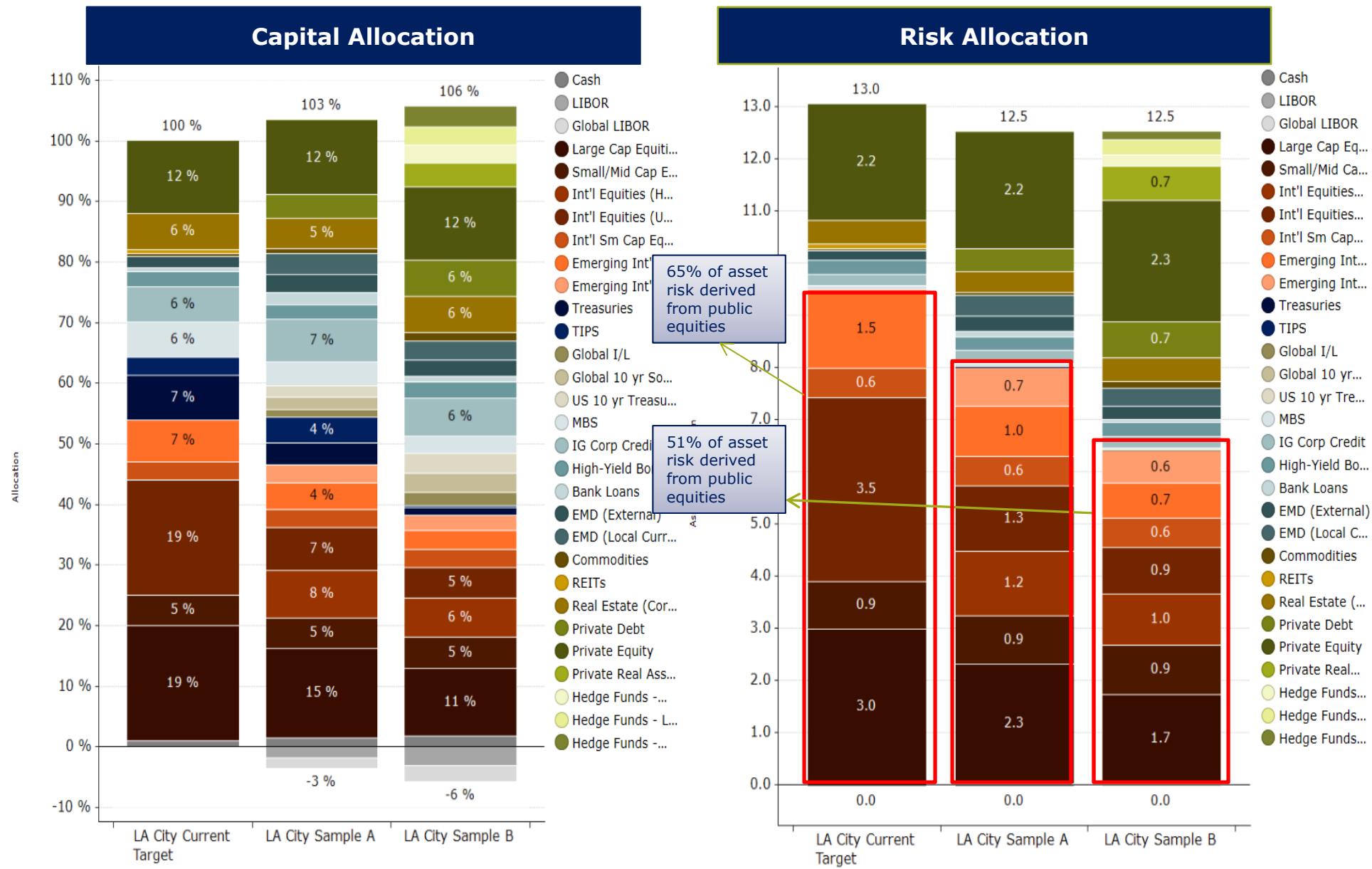
- **NEPC believes that asset allocation is the main driver of return, but that portfolio construction is an important element**

- We tend to favor managers with flexibility to allocate across market capitalization, country and asset class, etc.
- We expect that our implementation of the suggested changes will outperform on risk and return basis the assumed net of fee benchmark returns in the table (i.e., manager alpha)

Asset Allocation Analysis: Scenario Analysis



Asset Allocation Analysis: Risk Budgeting



LACERS Current Target vs Alternative Mixes - Liquidity



- **Increasing illiquidity results in gains in expected return and lowers the expected risk profile**

Wrap-Up

Full Retainer Service Proposal

We are big enough to give you the resources that you require yet small enough to give you the service you deserve

- **Our full retainer service commitment is open-ended, and includes:**
 - The development and/or refinement of your Investment Policy Statement, objectives and guidelines and its periodic review, thereafter;
 - Liability-based asset allocation studies every three to five years, the length of a typical planning cycle;
 - Asset-based asset allocation studies, as requested;
 - Manager and custodian searches;
 - Quarterly investment performance analysis reports and accompanying executive summaries;
 - Monthly flash reports;
 - Advice on proxy voting services;
 - Educational seminars;
 - Our annual client conference (not funded or subsidized in any way by investment managers);
 - Fund of funds hedge fund consulting;
 - Attendance at your meetings; and
 - Special projects and reports, as requested.
- **Our full service retainer proposal is an annual flat fee of \$575,000.**

YOU DEMAND MORE. *So do we.*SM

**NEPC is driven by a
love for investing and consulting
and serving clients
without divided loyalties**

- Providing **innovative** investment strategies and customized research solutions from professionals **grounded in integrity**
- Attracting and retaining the best investment talent in order to deliver investment advice and insight to meet **unique client needs** and be the **Consultant of Choice**



NEPC, LLC

Appendix

Consulting Team Bios

NEPC Proposed Service Team

Los Angeles City Employees' Retirement System Consulting Team



Carolyn Smith
Partner

-Thirty years' investment consulting experience
Member: Small Cap Equity Advisory Group, Traditional Due Diligence Committee
Previous affiliations: Watson Wyatt Investment Consulting; Callan Associates, Inc.
Education: BS in Finance, University of Utah
Current philanthropic roles: Investment Committee, Girl Scouts of Northern California



Don Stracke, CFA, CAIA
Senior Consultant

-Thirty-two years' investment experience
Member: Large Cap Equity Advisory Group
Previous affiliation: Shenkman Capital Management; Attalus Capital; Dresdner RCM Global Investors; Bankers Trust Company; Citibank
Education: MBA, Rutgers University; BA, Farleigh Dickinson



Kevin Novak
Consultant

-Nine years' investment experience
Member: Global Asset Allocation Advisory Committee
Previous affiliation: Standish Mellon Asset Management, State Street Corporation
Education: MBA, Boston University, BBA, Loyola Marymount University

Consulting Support and Performance Analytics Team

- Consulting Support Analyst assigned to LACERS
- Performance Analyst assigned to LACERS
- 35 Consultant Support Analysts and 54 Portfolio Analysts

Public Fund Team

- Dedicated Public Fund Team of 36 professionals
- Differentiated for asset allocation advice
- Distinguished large plan client base

Dedicated Research Team

- Dedicated team of 49 professionals
- Innovative, forward-thinking research culture with flexibility to create custom solutions
- Top down and bottom up idea generation

Workforce Composition

Workforce Composition – As of June 10, 2016

<u>Occupation</u>	TOTAL COMPOSITION OF WORK FORCE								
	<u>African American</u> <u>Full Time</u>	<u>Hispanic</u> <u>Full Time</u>	<u>Asian or Pacific Islander</u> <u>Full Time</u>	<u>American Indian/ Alaskan Native</u> <u>Full Time</u>	<u>Caucasian (Non Hispanic)</u> <u>Full Time</u>	<u>Total Employees</u> <u>Full Time</u>	<u>Percent (%)</u> <u>Full Time</u>	<u>Gender</u> <u>Male</u> <u>Full Time</u>	<u>Female</u>
Officials & Managers	0	1	0	0	14	15	6.67%	12	3
Professionals	8	3	16	0	117	144	18.75%	103	41
Technicians	0	0	0	0	0	0	0.00%	0	0
Sales Workers	0	0	0	0	0	0	0.00%	0	0
Office/Clerical	8	4	8	0	62	82	24.39%	42	40
Semi-Skilled	0	0	0	0	0	0	0.00%	0	0
Unskilled	0	0	0	0	0	0	0.00%	0	0
Service Workers	0	0	0	0	0	0	0.00%	0	0
Other	0	0	0	0	0	0	0.00%	0	0
Total	16	8	24	0	193	241	19.92%	157	84

NEPC's Corporate Citizenship

- **NEPC encourages its employees to participate in various good citizenship initiatives**
 - NEPC offers employees an annual paid volunteer day
 - NEPC employees have contributed to the United Way on an annual basis; in 2015 we raised over \$28,000 in donations and in 2016 have pledged over \$28,000 in donations
 - NEPC sponsors an annual corporate "Volunteer Day" where employees work at the Greater Boston Food Bank for the day
 - NEPC employees participate in Lee's National Denim Day to support breast cancer research
 - NEPC employees participate in the *Sox for Socks* which was a campaign supporting BHCHP's (Boston Health Care for the Homeless Program) annual *Sox for Socks* campaign.
 - Over \$20,000 raised by NEPC employees for Men's Health Awareness in 2014 (Movember)
 - Richard Charlton, Chairman Emeritus of NEPC, and his wife have chaired the United Way of Mass Bay Golf Outing over the last nine years raising over \$3.5 million for the United Way through this event
- **Internships**
 - NEPC employs Year-Up interns on our finance team
 - Year-Up is a rigorous academic and work oriented year long program for inner city kids in disadvantaged situations. Additionally, NEPC employees volunteer at the Year-Up headquarters conducting mock interviews, providing mentoring and participating in many fundraising events.
 - NEPC has hired three Year-Up graduates in entry-level positions at NEPC
 - Summer internship partnership with University of Detroit Mercy focusing on diversity candidates with an interest in finance and investing
 - NEPC supports the Gateway to Leadership program as part of our commitment to the United Negro College Fund. Gateway offers internships through its corporate sponsors, and we have sponsored a Gateway intern in our offices in the summers of 2014, 2015 and 2016.

NEPC's Corporate Citizenship

- **Over the past three years we have contributed to over 35 charitable and social service organizations, including:**
 - Urban Improv – a Boston-based organization devoted to the elimination of violence on the streets of Boston
 - YATC (Youth Activities Training Center) – takes children out of urban Miami and trains them in automotive technology to place them in attractive automotive jobs
 - NAACP
- **In 2014 NEPC launched a matching gift program where annually NEPC will match up to \$40,000 of employee charitable gifts to recognized and established charitable organizations**

NEPC's EEOC Statement

- **NEPC assures Equal Employment Opportunity in all its policies regarding recruiting, working conditions, transfers, compensation, training, hiring, promotions, the use of employee facilities and other benefits. NEPC will not discriminate against any employee or applicant for employment because of race, color, creed, gender, sexual orientation, religion, ancestry, national origin, age, political affiliation, veteran status, handicap, marital status, citizenship status, or any other prohibited form of discrimination. In addition, NEPC complies with all applicable federal, state and local laws to the fullest extent.**
- **NEPC takes affirmative action as it relates to equal employment opportunity seriously and we have policies that clearly state our firm commitment to fair employment practices. We support initiatives and personal leadership on the part of all of our employees as it relates to creating a respectful and inclusive work environment.**
- **Applicants for employment and employees who seek promotion are considered solely on the basis of individual merit and demonstrated performance.**
- **This policy derives from the belief that all people must be treated fairly, with human dignity and without fear of discrimination.**

Disclosures

- **Greenwich Associates**

- Greenwich Associates ("Greenwich") is an independent research firm that has surveyed plan sponsors with assets in excess of \$150 million for many years to document their opinions of their investment consulting relationships.
 - The 2016 survey is based on interviews with 1,216 plan sponsors, 81 of whom retained NEPC.
 - See table for more details
- NEPC receives the survey results in exchange for providing Greenwich with evaluations of investment managers. NEPC does not pay Greenwich any compensation for inclusion in this study.
- The Greenwich Quality Index is based on collective client ratings over a number of qualitative categories known as "Key Success Factors", which represent client perceptions of NEPC's investment counseling, manager selection, client service and commercial arrangement (fees). More details are available upon request.
 - Study participants are asked to provide qualitative and quantitative evaluations of their consultants. Based on those responses, Greenwich Associates calculates a score on the Greenwich Quality Index for each consultant named. Consultants with scores that top those awarded to competitors by a statistically significant margin are named Greenwich Quality Leaders. Only three large consultants (defined as the 10 firms with the most citations) received this recognition in 2016.
 - The rankings are not necessarily representative of any single client's experience since such rankings reflect the average of client responses to the survey.
 - The rankings do not represent an endorsement of NEPC and should not be viewed as an indication of NEPC's future performance.

**Greenwich Associates
Investment Consulting Surveys**

<u>Year</u>	<u>Interviews</u>	<u>Plan Sponsors</u>	<u>NEPC Clients</u>
2016	1,216	1,052	81
2015	1,341	1,128	92
2014	1,277	1,091	94
2013	1,093	923	60
2012	1,181	970	72
2011	1,173	987	66
2010	1,188	1,000	49
2009	1,195	1,009	49
2008	1,254	1,075	45
2007	n/a	1,078	46

Disclosures - Greenwich Associates Survey - Key Success Factors

Greenwich Associates U.S. Client Evaluations – Investment Consulting Business
2016 Rankings of 10 Largest Consultants¹: Key Success Factors

	NEPC	Firm A	Firm B	Firm C	Firm D	Firm E	Firm F	Firm G	Firm H	Firm I
Market Position (# of Clients)	1	2	3	4	5	6	7	8	9	10
Overall Greenwich Quality Index	2	4	5	7	10	3	9	7	1	6
Investment Counseling										
Understanding Clients' Goals & Objectives	1	5	4	8	10	3	9	7	6	2
Advice on Long-term Asset Allocation	3	5	8	9	10	6	2	4	1	7
Provision of Proactive Advice & Innovative Ideas	3	5	6	8	9	4	10	1	2	7
Capability of Consultant Assigned to Your Fund	1	2	6	4	9	5	3	10	7	8
Credibility with Investment Committee	1	4	9	8	10	3	7	5	2	6
Advice on DC Plan Structure and Design	5	7	8	9	4	6	10	2	1	3
Manager Selection										
Knowledge of Investment Managers	2	7	2	5	6	7	7	2	1	7
Satisfaction with Manager Recommendations	5	4	1	7	10	6	9	8	2	2
Client Servicing										
Responsiveness to Requests for Information	1	5	7	3	8	6	10	9	4	2
Personal Meetings	1	5	6	10	9	4	7	8	3	2
Usefulness of Written Investment Reviews	1	5	4	6	7	8	10	9	2	3
Sufficient Professional Resources to Meet Your Needs	4	6	5	2	8	1	7	10	3	9
Timeliness in Providing Written Information & Reports	1	7	3	5	9	6	10	8	4	2
Commercial Arrangement										
Reasonable Fees (Relative to Value Delivered)	2	6	5	8	10	9	3	7	1	4

¹ Top 10 rankings based on number of clients with assets of \$250 million or greater citing an investment consulting relationship in 2016.

Source: Greenwich Associates, 2016 Evaluations by U.S. Institutional Investors.

Greenwich Associates is an independent research firm. Their rankings do not represent an endorsement of NEPC. Past performance is no guarantee of future results.



NEPC, LLC

Information Disclosure

- **InvestorForce Plan Universe**
 - As of 9/30/2016 the InvestorForce Universe contained actual, custodian-supplied and audited data on over 2,424 plan sponsors, representing roughly \$3.3 trillion in assets. This data is drawn from 58 independent investment consulting firms, including NEPC.
- **ICC Universe**
 - Through 2011, universe rankings were based on the ICC Universe, which was populated by 12 independent investment consulting firms, including NEPC, and supplemented by many of the performance measurement clients of State Street Bank.
- **Certain information, including that relating to market indices, was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.**
- **This document may contain confidential or proprietary information and is intended only for the designated recipient(s). If you are not a designated recipient, you may not copy or distribute this document.**

Client Results Disclosure

- **Past performance is no guarantee of future results**
- **NEPC acts in an advisory capacity only for many clients and does not have discretion over those client assets. As a result, a client's investment performance may not be attributable solely to NEPC's advice.**
- **Results are reported gross of NEPC advisory fees**
 - NEPC's fees for advisory clients vary considerably depending on client size and complexity.
 - NEPC's fees for discretionary services vary by client but generally range from 10-50 basis points (0.10%-0.50%) of assets per year.
- **Methodology and criteria**
 - All returns are gross of underlying manager fees except hedge funds and private equity.
 - NEPC's Overall Composite is compiled from all Pension Plans, Endowments and Foundations for which NEPC is the sole full-retainer consultant. Plans are included in the Composite provided they have exposure to equity and bonds (including alternatives) of at least 25% each, and no more than 20% to other assets such as cash and GIC's.
 - New clients are added to the Overall Composite with the first full quarter of a new manager selected from an NEPC search, or after one year as an NEPC client, whichever comes first, provided that the plan is globally diversified.

Alternative Investment Disclosure

- **It is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds, real estate and private equity:**
 - Performance can be volatile and investors could lose all or a substantial portion of their investment
 - Leverage and other speculative practices may increase the risk of loss
 - Past performance may be revised due to the revaluation of investments
 - These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
 - A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
 - These funds are not subject to the same regulatory requirements as registered investment vehicles
 - Managers are not required to provide periodic pricing or valuation information to investors
 - These funds may have complex tax structures and delays in distributing important tax information
 - These funds often charge high fees
 - Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy

Private Equity Performance Benchmarking Methodology and Information Disclosures

- Past performance is no guarantee of future results.
- Investment results include funds that were rated “Preferred” by the NEPC Alternative Assets Committee. Investment results include those clients for which NEPC has discretionary authority as well as those where NEPC acts in an advisory capacity. They include all types of clients and plans for whom NEPC serves or served as a consultant and provided advice on private equity.
- Returns are based on the client commitment that had the earliest cash flow into each recommended product. Vintage year classifications are made based upon the year of the first cash flow from this client into the Fund.
- In cases where no current NEPC client is invested in a product (due to a client changing consultants), vintage year and return data was used from either the manager, Preqin or from another limited partner in the fund who publicly discloses investment returns.
- Each internal rate of return is net of management fees and carried interest (both paid and accrued) and is computed on an annualized, dollar-weighted basis. Performance aggregates are created by equal-weighting each Preferred-rated fund.
- Strategy classifications are made by NEPC based on a review of the stated strategy of each investment. Funds included are primarily limited partnerships, including funds-of-funds. Private equity investments include buyouts, venture capital, growth equity, special situations/turnarounds, equity-oriented distressed buyouts, co-investment funds, primary fund-of-funds and secondary funds.
- Only funds from vintage years 2007–2013 were benchmarked, as performance for funds who have been investing for less than three years is deemed to be too young to be meaningful.
- To compute the quartile performance of each fund, funds were matched against similar strategies and geographic regions tracked by ThomsonOne/Cambridge Associates and Preqin; however, it is important to note that some funds have investment strategies that could be benchmarked against multiple categories.
- Attempts were made to match the geographic strategy of each fund. In cases where the benchmark provider did not have a large data set a global strategy benchmark was used.
- For some vintage years, the benchmark provider may have provided median but not upper and lower quartile cut-off metrics. In these cases, to estimate the upper and lower quartile cut-offs, NEPC used the average quartile-to-median differential for the vintage years preceding and following the vintage year with the missing quartile cut-offs.
- All fund and benchmark returns are as of June 30, 2016.
- The information in this report has been obtained from sources NEPC believes to be reliable. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

The background of the slide features a scenic view of a mountain range with snow-capped peaks and a body of water in the foreground. A white and blue ferry ship is visible on the water. The overall color palette is cool blues and grays.

**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

MAY 9, 2017

Investment Solutions for

Los Angeles City Employees' Retirement System





Verus provides research-driven investment solutions that enable institutional investors to prudently discharge their fiduciary responsibility.

Through independent, impartial advice and investment expertise, our professionals strive to be the driving force that empowers clients to achieve their enterprise objectives.

Table of contents



VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Presentation

TAB I

Appendix

TAB II

Past performance is no guarantee of future results. This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other "forward-looking statements." No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. and Verus Investors, LLC ("Verus") file a single form ADV under the United States Investment Advisors Act of 1940, as amended.

Verus – also known as Verus Advisory™ or Verus Investors™.

I. Presentation

Firm overview

ESTABLISHED

Founded in 1986
83 employees across three offices
65 investment professionals

EXPERIENCED

Established reputation for research
22 years average consultant experience

VESTED

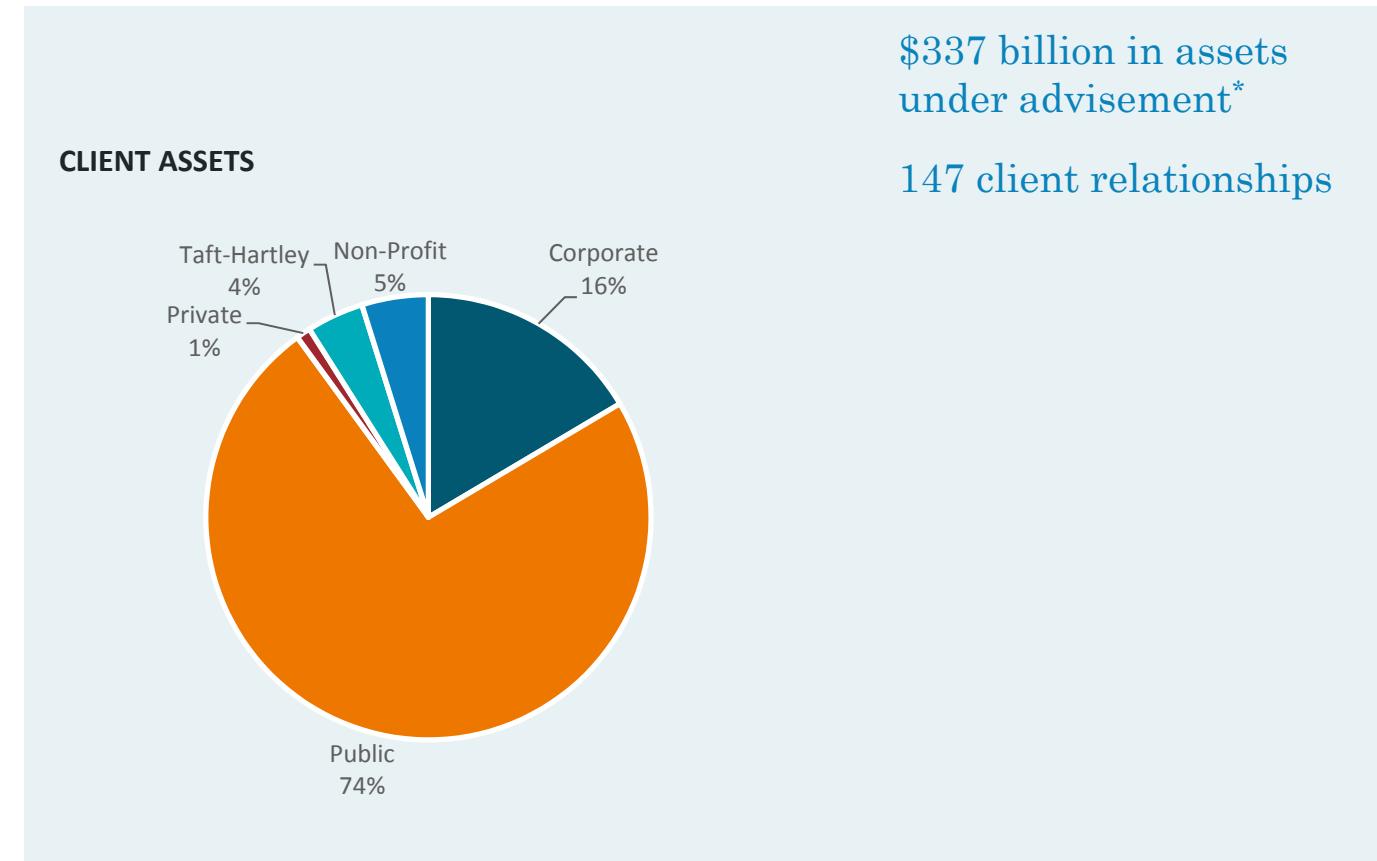
100% employee-owned; independent
business philosophy and structure

INDUSTRY LEADING

Thought leadership on risk allocation, risk
management and capital markets

BOUTIQUE CULTURE

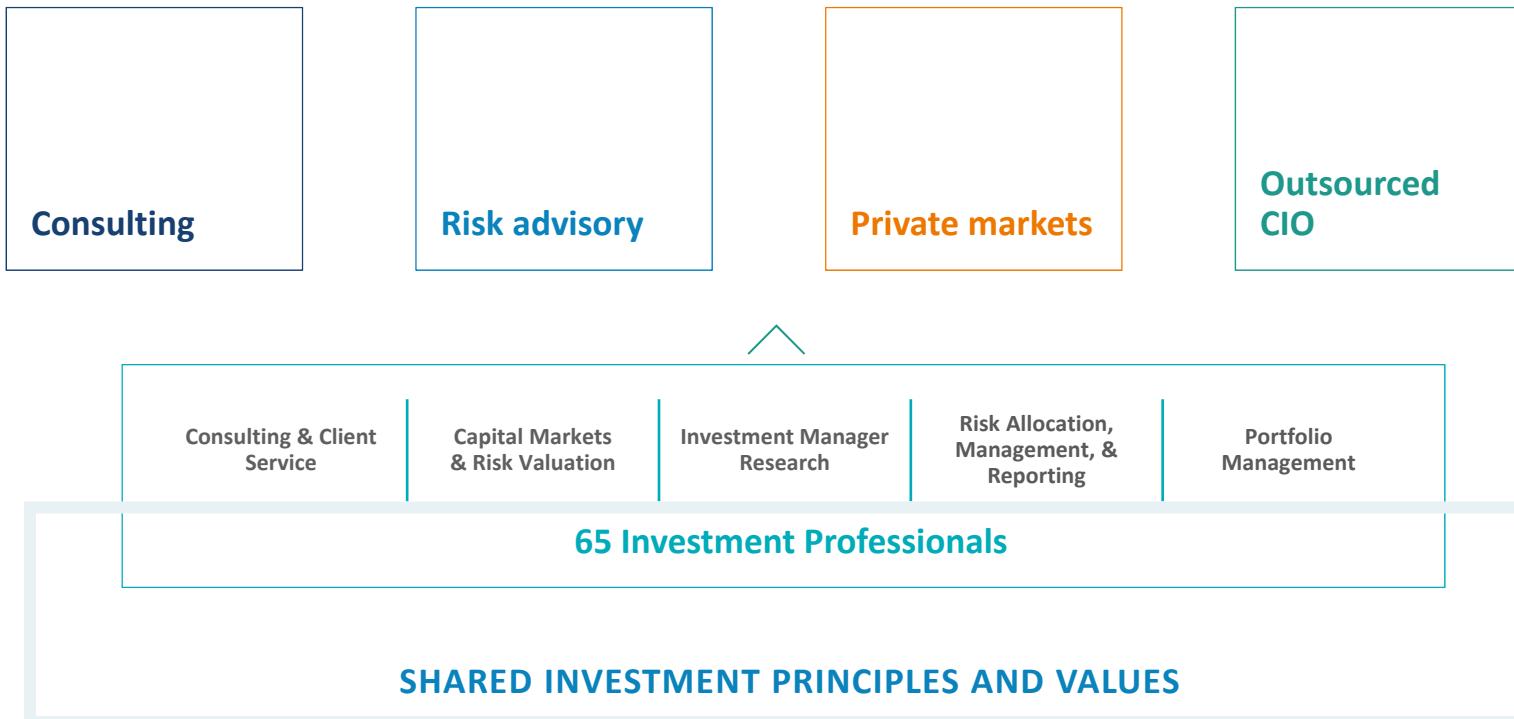
Personalized and well-resourced



*Includes Verus' total assets under advisement, net of divestment of Strategic Partnership business; preliminary as of 3/31/17; pie chart depicts client breakdown by assets.

Lines of business

Centralized investment team supports service delivery for varied client governance models



Representative clients

PUBLIC	MULTI-EMPLOYER	NOT-FOR-PROFIT	CORPORATE
Contra Costa County Employees' Retirement Association	Stanislaus County Employees' Retirement Association	Montebello Teachers Association Supplemental Health Plan	Allergan, Inc.
Fresno County Employees' Retirement Association	Tulare County Employees' Retirement Association	Northern California Pipe Trades	Apria Healthcare 401K Savings Plan
Imperial County Employees' Retirement System	West Virginia Investment Management Board	Painters & Allied Trades Paint Makers Pension Fund	Avista Corporation
Indiana Public Retirement System	Wisconsin State Investment Board	Plasterers Local No. 82 Pension Trust	Barrick Gold Corporation
Kern County Employees' Retirement Association		San Diego County Cement Masons	Boise Cascade
Los Angeles Metropolitan Transportation Authority		San Diego County Teamsters Trust Fund	Carnival Corporation
Oklahoma Public Employees' Retirement System		San Diego Theatrical	Carollo Engineers
Pasadena Fire and Police Retirement System		Signatory Employers – Idaho Laborers Pension Plan	Cox Enterprises
San Luis Obispo County Pension Trust	Inland Empire Electrical Workers Health & Welfare Trust	Solano and Napa Counties Electrical Workers Benefit Funds	Forever Living Products
	Juan de la Cruz Farm Workers Pension Plan	Southern CA Cement Masons Trust Funds	Group Health Cooperative
	Laborers Pension Trust Fund for N. California	Southern California Floor Covering Pension and Health & Welfare Fund	Hanford Site
			Harnish Group
			Jack in the Box, Inc.
			Karsten Manufacturing
			Kinross Gold Corporation
			LaCrosse Footwear
			Moss-Adams LLP
			Mutual of Enumclaw Insurance Company
			The Seattle Times
			Southwest Airlines Pilots' Association
			Westfield Corporation

It is not known whether the listed clients approve of Verus or the advisory services provided. The client list includes all Verus' clients as of April 1, 2017 who have provided permission to use their name.

Vision and growth plans

Discussion to be led by CEO Jeff MacLean

Practices for cultivating talented staff

- Our growth allows us unique opportunities to cultivate talent internally
 - Low turnover
 - Manage consistency
 - In the past 3 years, we have:
 - Grown consulting from 20 to 29 professionals
 - Average 14 years with the firm
 - Average 22 years industry experience
 - Grown research from 26 to 51 professionals
 - Average 5 years with the firm
 - Average 13 years industry experience
- At Verus, we clearly recognize our people are our most important resource

Practices for cultivating talented staff (cont'd)

- Culture
- Internal programs
- External education
- Thoughts on diversity

We firmly believe diversity is a great strength for any organization, particularly one dedicated to thought leadership

Organization - firm leadership



Jeffrey MacLean
Chief Executive Officer



Shelly Heier, CFA, CAIA
President &
Chief Operating Officer



Kraig McCoy, CFA
Chief Financial Officer



Ian Toner, CFA
Chief Investment Officer



Scott Whalen, CFA
Executive Managing
Director



Max Giolitti
Chief Risk Officer

Organization - firm resources

CHIEF INVESTMENT OFFICER

Ian Toner, CFA***, Chief Investment Officer

GENERAL CONSULTING

Jeffrey MacLean, CFA**
CEO, Sr. Consultant
Shelly Heier, CFA, CAIA*
President, COO, Sr. Cons.
Scott Whalen, CFA
Exec. Managing Dir.
Sr. Consultant
Barry Dennis
Managing Director
Margaret Jadallah*
Managing Dir., Sr. Consultant
Anne Westreich, CFA*
Managing Dir., Sr. Consultant
P. Bradley Ness
Managing Dir., Sr. Consultant
Brent Nelson**
Managing Dir., Sr. Consultant
Annie Taylor, CFA,
Managing Dir., Sr. Consultant
Ed Hoffman, CFA, FRM*
Managing Dir., Sr. Consultant

John Meier, CFA**
Managing Dir., Sr. Consultant

Victor Lee
Sr. Consultant

Jason Taylor
Sr. Consultant

Michael Kamell, CFA, CAIA
Consultant

Bryant Pierce
Consultant

Stephen Quirk, CFA
Consultant

Thomas Winkler, CAIA
Consultant

Brian Kwan, CFA
Consultant

+8 Consulting Associates

INVESTMENT COMMITTEE

*indicates membership

PRIVATE MARKETS CONSULTING & RESEARCH

Faraz Shooshani
Managing Director, Sr. Private Markets Consultant
Steve Hempler
Managing Director, Sr. Private Markets Consultant
John Nicolini, CFA
Managing Director, Sr. Consultant
Ping Zhu, CFA, FRM, CAIA
Sr. Associate Director
John Wasnock
Associate Director

Francis Griffin
Associate Director

Derek Kong
Associate Director

Jing Chen
Sr. Private Markets Research Analyst

MyDung Do
Sr. Private Markets Performance Analyst

Vincent Phan
Private Markets Performance Analyst

ALTERNATIVE INVESTMENTS COMMITTEE

**indicates membership

RISK ADVISORY

Max Giolitti
Chief Risk Officer
Danny Sullivan, FRM, CAIA
Associate Director
Zoey Yan, FRM
Senior Risk Analyst
Vance Creekpaum, ASA
Actuarial Analyst

PORTFOLIO MANAGEMENT

Matt Brady, CFA
Portfolio Manager

STRATEGIC RESEARCH

Thomas Garrett, CFA, CAIA
Sr. Associate Director
Andrew Akers
Strategic Research Analyst

PORTFOLIO ANALYTICS

16 Professionals

OPERATIONS

Kraig McCoy, CFA**
Chief Financial Officer
Jonathan Henderson
Sr. Operations Manager

LEGAL

Warren Spencer, JD, LLM
CCO, Chief Legal Counsel

IT DEVELOPMENT

Joe Wilson
Director of IT & Development

FIRM INFRASTRUCTURE

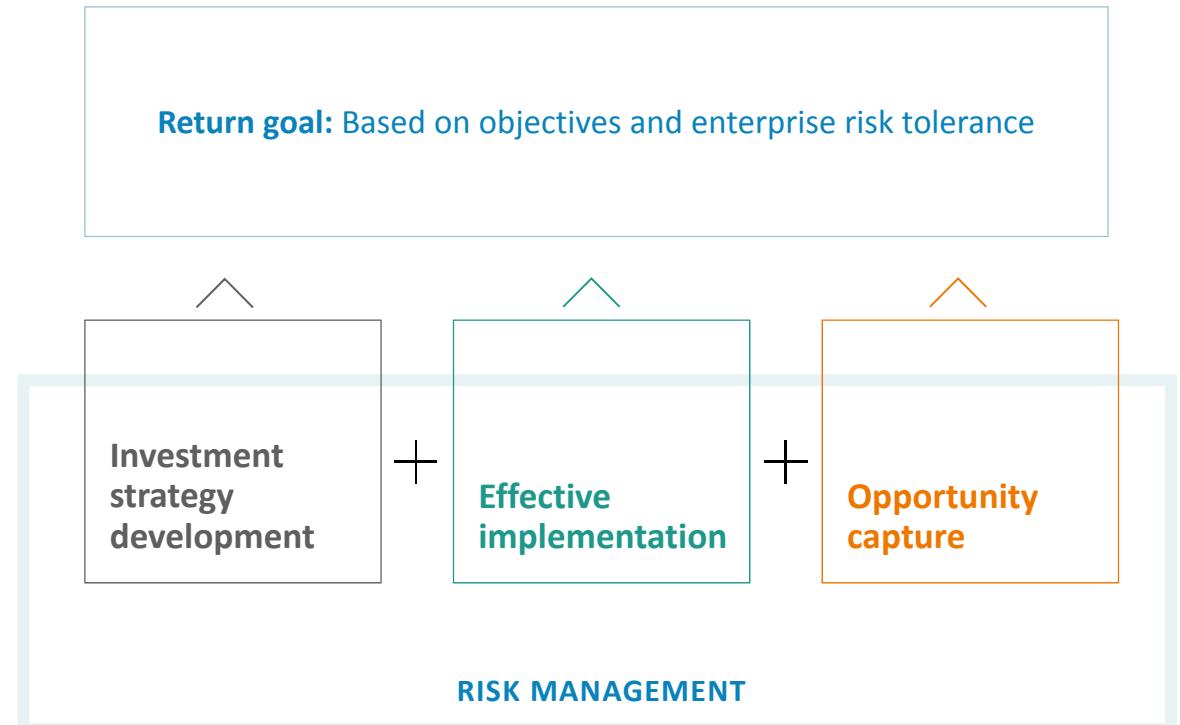
14 Professionals

Consulting philosophy

- Enterprise objectives and risk tolerance should guide all decisions
- Asset allocation and risk exposures drive portfolio results
- Economic factors and valuation drive long-term asset class returns
- Risk and diversification must be viewed through multiple lenses
- Fees and costs must be minimized...and justified

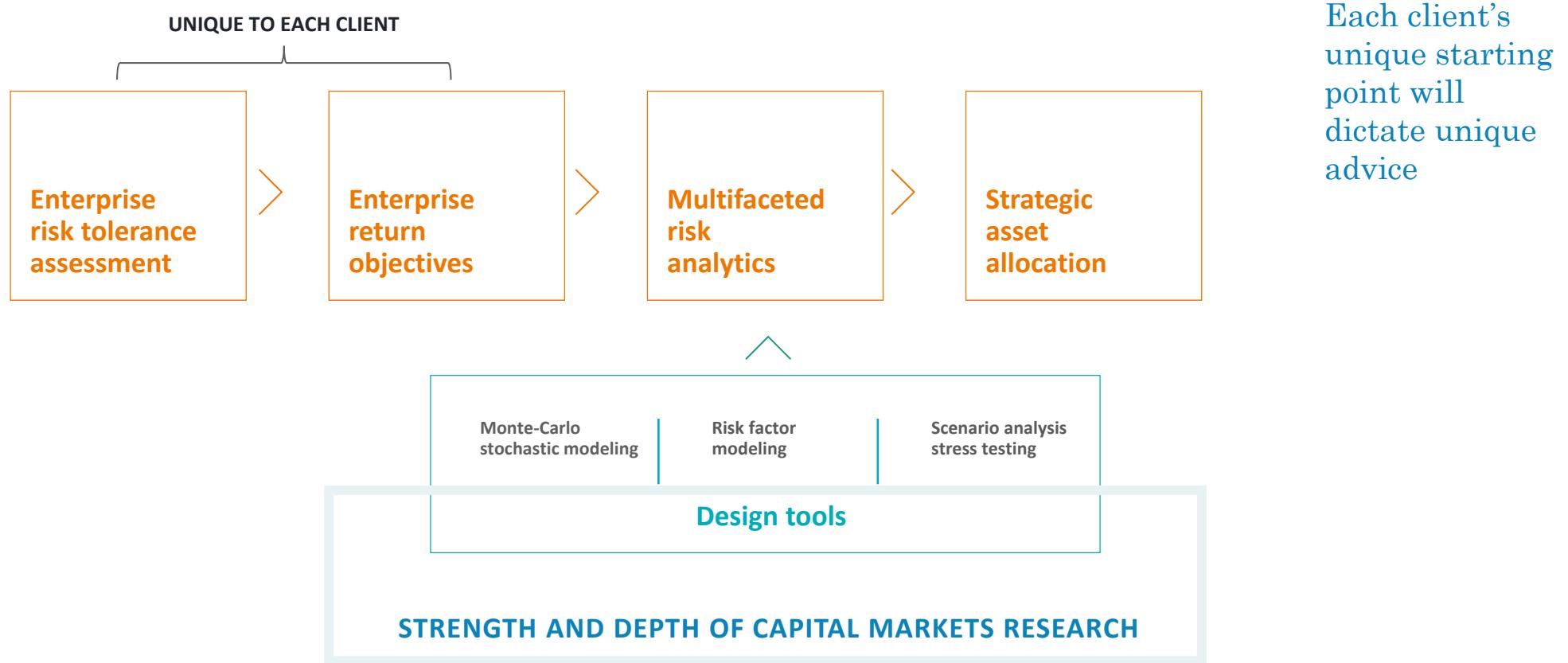
Consulting approach

- Develop a thoughtful **strategic asset allocation** based on your enterprise objectives and risk tolerance
- Effective and efficient implementation, combining **best-in-class investment managers**, low-cost passive exposures, and appropriate operations
- Identify and **capture attractive valuation-based market opportunities**
- Apply **risk management best practices** across the portfolio to maximize risk-adjusted return



Asset-liability studies

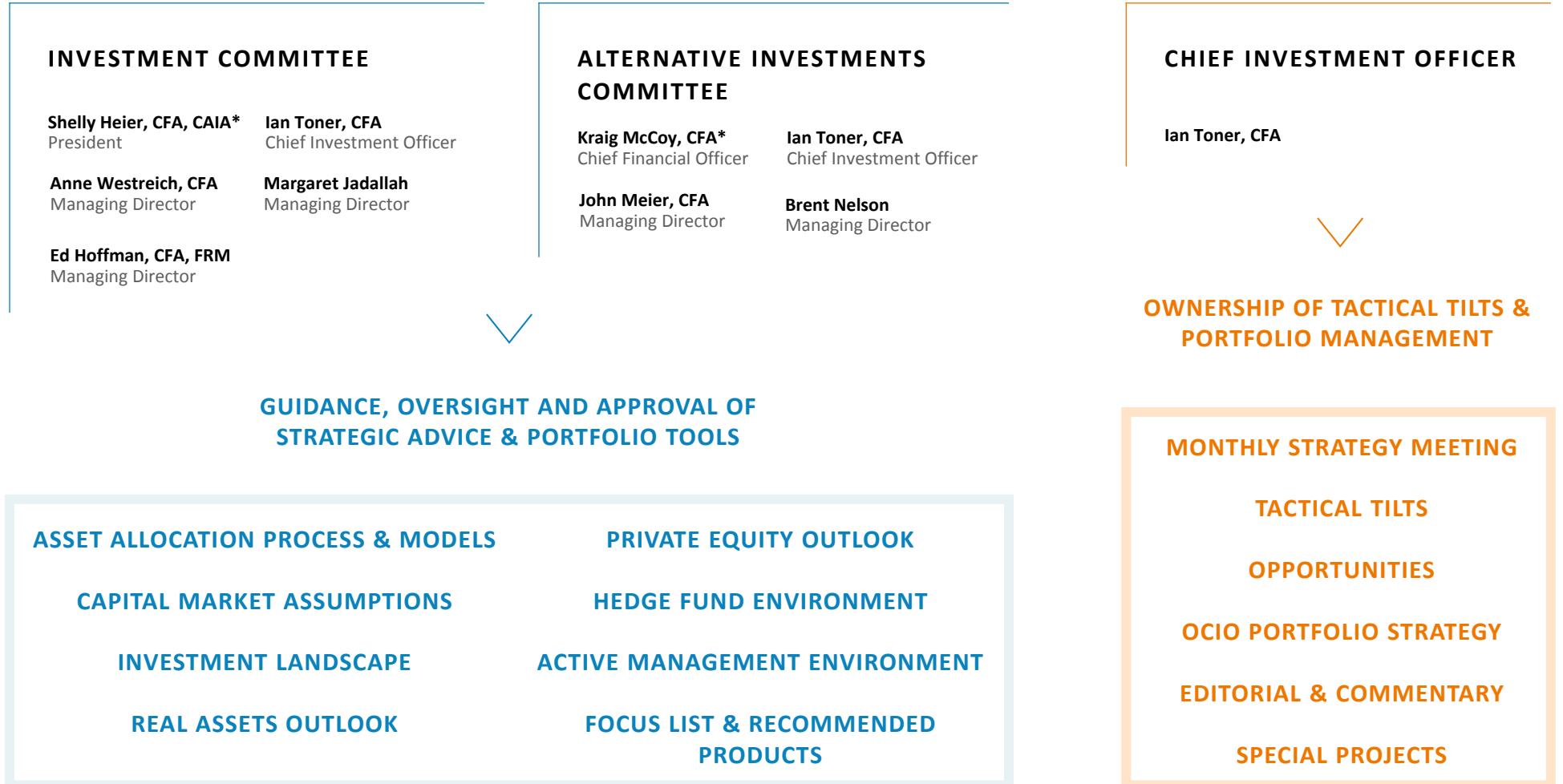
Investment strategy development is not about implementing a single “optimal portfolio”



Investment model evaluation summary

Selection Criteria	Policy	Current	Typical Peer	Investment Models				Risk-Balanced (50/25/25)	Risk-Balanced (40/30/30)	FFP
				80/20	70/30	60/40				
Risk/Return Metrics										
Expected Return	6.5%	6.4%	6.0%	6.9%	6.5%	6.0%	7.1%	6.6%	6.6%	
Volatility	11.6%	11.1%	9.6%	13.2%	11.5%	9.9%	11.0%	9.7%	9.5%	
Sharpe Ratio	0.38	0.39	0.41	0.37	0.38	0.40	0.45	0.46	0.48	
% chance of meeting 7.25%	41%	40%	35%	45%	41%	35%	47%	40%	40%	
Daily VaR (95% confidence, \$MM)	\$69.0	\$72.6	\$69.6	\$110.4	\$95.0	\$79.8	\$60.1	\$57.7	\$43.1	
Daily CVaR (95% confidence, \$MM)	\$112.0	\$112.7	\$102.3	\$149.0	\$131.9	\$114.7	\$97.9	\$92.0	\$84.4	
2007-2009 Drawdown (Simulation)	-36.0%	-35.8%	-30.4%	-38.5%	-38.0%	-32.6%	-36.3%	-33.0%	-28.8%	
1st Percentile (1 Year, MVA)	-28.7%	-28.5%	-23.3%	-33.0%	-28.6%	-24.4%	-27.2%	-24.1%	-22.2%	
Potential impact on Discount Rate	-0.74%	-0.87%	-1.26%	-0.32%	-0.77%	-1.22%	-0.14%	-0.67%	-0.62%	
Other Key Metrics (Expected Yr. 10)										
Funded Ratio	96.8	95.9	93.8	99.4	96.6	94.0	100.3	96.9	97.3	
\$MM Contributions - Employer	\$196.4	\$205.6	\$230.1	\$137.0	\$197.8	\$228.0	\$121.2	\$193.5	\$194.5	
% of Pay Cont. - Employer	24.6	25.9	29.1	17.5	25.0	28.9	15.0	24.5	24.6	
Risk Factors										
Portfolio Complexity	med	med	med	low	low	low	med	med	med	
Leverage	med	med	low	low	low	low	med	med	med	
Peer/Headline Risk	low	low	low	high	high	high	med	med	high	
Liquidity Risk	med	med	med	med	med	low	med	med	low	
Tail Risk	high	high	med	high	high	med	high	low	low	
Equity Risk Allocation	high	high	high	high	high	high	med	low	med	

Research oversight and guidance



*Committee Chair

Capital markets research

At Verus, we arm our consultants with valuable insights to help clients meet their investment objectives

Regular quarterly research reports

Macroeconomic conditions
Capital market valuations
Risk and trend analysis

In-depth annual outlooks

Capital markets expectations
Hedge fund environment
Private equity outlook
Real assets outlook
Active management environment

Timely & varied research papers

Commodities: what's changed?
High yield & the credit cycle
Death of the value premium?
Don't be so Negative
Commodities in a Low Inflation Environment
Are unconstrained bonds a substitute for core bonds?
Emerging Market Debt: Receding Capital Flows Creates Opportunities

Educating clients about the economy, markets, and portfolio construction is a key component of our service

Comprehensive asset class coverage

EQUITY	FIXED INCOME	REAL ASSETS	HEDGE FUNDS	PRIVATE MARKETS
● Vincent Francom, CFA, CAIA Sr. Associate Director	● Philip Schmitt, CIMA Sr. Associate Director	● John Wasnock Associate Director	● Senior Strategist Director	● Ping Zhu, CFA, FRM, CAIA Sr. Associate Director
● Annika Williams Sr. Manager Research Analyst	● Ping Zhu, CFA, FRM, CAIA Sr. Associate Director	● Noah Schmidt Sr. Manager Research Analyst	● Trevor Parmelee, CFA Sr. Manager Research Analyst	● Derek Kong Associate Director
● Marianne Feeley, CFA Managing Dir. Public Markets	● Maggie McRae, CFA Associate Director	● Eric Crowder Consulting Associate	● Glenn Cagan, CFA Consulting Assoc.	● Faraz Shooshani Managing Director
● Noah Schmidt Sr. Manager Research Analyst	● Matt Brady, CFA Portfolio Manager	● Joseph Abdou, CFA Consulting Associate		● Steve Hempler Managing Director
● Riley Dinnison Consulting Assoc.	● Kevin Tjernberg Sr. Consulting Assoc.	● Andrew Kogan, CFA Consulting Assoc.		● John Nicolini, CFA Managing Director
● Riley Dinnison Consulting Assoc.				● Herbert Nishii Sr. Consulting Assoc.
				● Nick Pursley Consulting Associate

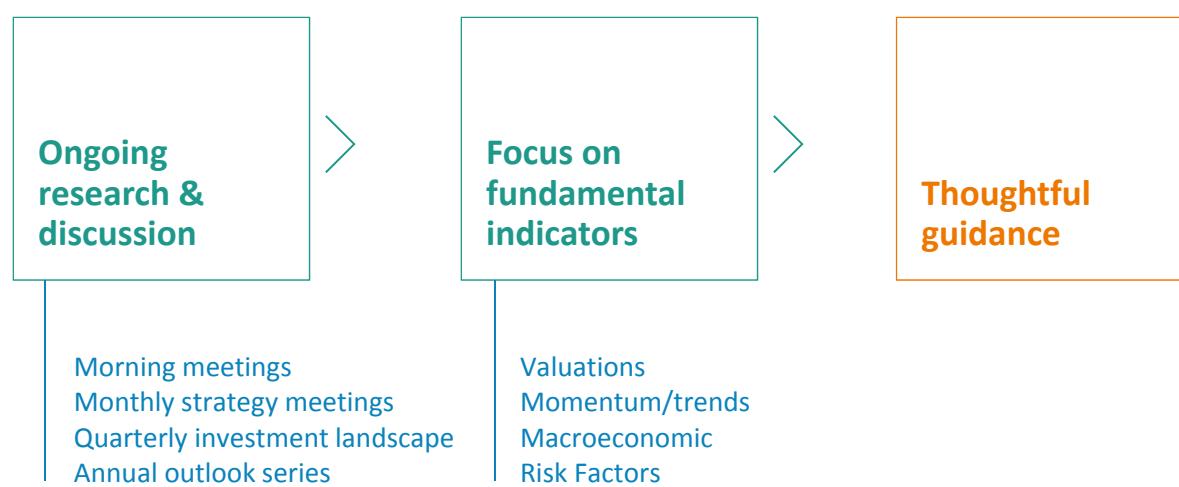
Comprehensive coverage

- Opportunity assessments based on fundamentals, risk exposures, valuations, technical trends, and investment manager environment
- Investment manager due diligence and evaluation
- Portfolio design and implementation including transition, guidelines and fee negotiations
- Continuous monitoring of personnel, performance, holdings and assets

- Research and analytics
- Portfolio management
- Consulting team

Seeking investment opportunities

Market inefficiencies create opportunities (and threats) for long-term investors. Real opportunities may be infrequent but can have a substantial impact.



The key to finding opportunities is to look for them.

DEEP RESEARCH CAPABILITIES, STRUCTURED TO FIND INEFFICIENCIES

Seeking investment opportunities

International equity - Many managers in this space are, and have been, structurally underweight to Japan. We recommend Japan be held as equal weight in portfolios, rather than underweight.

Emerging market equity - Investors with high risk tolerance and long timeframes may consider taking advantage of ongoing volatility to take mildly overweight positions when markets turn down temporarily.

Global sovereign exUS - Underweight. Record low developed market yields makes this asset class less attractive in the near term.

US credit - Neutral, while favoring higher quality securities.

High yield - Underweight, due to the maturing economic cycle

EM debt - Mild tilt towards EM debt denominated in local currency, despite expectation of US dollar strength. Local currency decreases the chance of bond defaults due to currency moves.

Real estate - Overweight to Value Add. With large amounts of capital on the sidelines supporting high quality stable assets, an opportunity still exists to "create core" through renovation, repositioning and releasing strategies.

China – from a sprint to a jog

Over recent years China has remained a key growth story, although in part due to external factors such as sponsored investment. In recent years, there has been a moderation of Chinese growth, driven by a slowdown in government spending, along with a depreciation of the yuan – the effects of which have been felt across the economies of China's trading partners.

Emerging market commodity producers are facing pain from both lower commodity prices and the Chinese slowdown.

CHINA REAL GDP

Negative interest rates

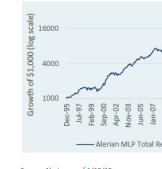
- Facing limitations of already record low policy rates, a few central banks have adopted a novel monetary policy approach phenomenon, NIRP (Negative Interest Rate Policy).
- Negative deposit rates have further suppressed yields.



MLPs – a complex set of exposures

A Master Limited Partnership (MLP) is a tax advantaged fund which derives most cash flows from investments in commodities and natural resources. These funds are often involved in midstream activities such as the transportation and storage of crude oil, natural gas, and refined products (pipelines and storage). MLPs generate toll-road type investments which are somewhat independent of commodity prices, but are subject to take-or-pay contracts with commodity firms.

ALERIAN MLP INDEX



VerusTM

As commodity prices have fallen, MLP valuations have followed. Many investors point to the fact that MLP contracts are more exposed to commodity volume than they are to commodity price, and claim that MLP

It is difficult to forecast how MLPs will perform in the future.

Sensitivity of high yield spreads to oil is much higher in a low oil price environment

Credit environment

High yield spreads and high yield energy spreads widened to begin the year, in line with a general market wide risk-off move. However, spreads retraced on the back of the oil rebound and market rally.

Credit spreads remain above average but in a normal range. A number of sectors, particularly the high yield energy space, are depending on continuing access to the credit markets. Were spreads to stay elevated or move higher, the ongoing viability of these issuance

dependent companies may be increasingly called into question.

The perceived risk of emerging market debt remains high, and country specific. The effect of lower oil prices on commodity exporters is notable, and this has contributed to spreads remaining at higher levels compared to intermediate term history. The recent increase in the oil price has brought spreads closer towards average levels.

CREDIT SPREADS



Source: Barclays Capital Indices, Bloomberg, as of 3/31/16

EMERGING MARKET SPREADS



Source: Bloomberg, as of 3/31/16

SPREADS

Market	Credit Spread (3/31/2016)	Credit Spread (3 Year Ago)
Long US Corporate	2.1%	1.8%
US Aggregate	1.1%	1.0%
US High Yield	7.0%	5.1%
US High Yield Energy	11.9%	9.3%
US Bank Loans	3.9%	3.5%

Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/16

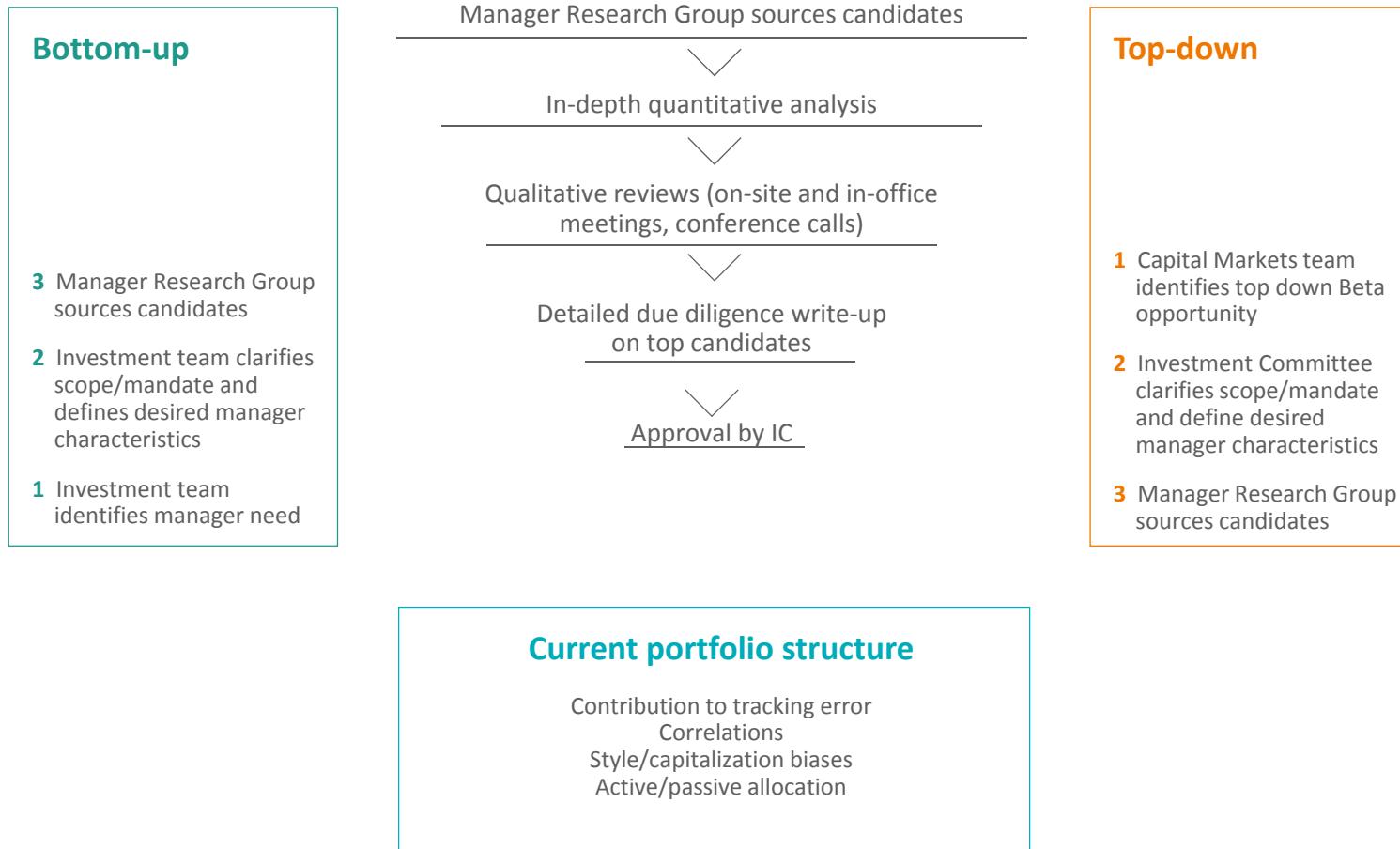
Investment Landscape
2nd Quarter 2016

Manager search and selection - understanding managers



Manager search and selection - process

Focused, nimble and collaborative team; emphasis on top-down integration



- **Consistent, rigorous process**
- **Experienced, dedicated team led by CIO**
- **Oversight and approval by Investment Committee (IC)**
- **Supported by Portfolio Analytics Group**

Emerging managers and minority and women-owned businesses

Emerging managers

*“The recommendation by Staff and the Investment Consultant to initiate a search will include the expected number of firms that may meet LACERS’ investment management search minimum criteria segregated by emerging and non-emerging investment managers. Emerging managers, as defined by LACERS’ Emerging Investment Manager Policy, will be highlighted in the active investment management candidate evaluation summary report to the Board.”**

We have two of the most experienced subject matter experts in the industry resident at Verus

Expert resources

- Margaret Jadallah, Managing Director
 - Nearly 30 years industry experience
- Stephen Quirk, CFA, Consultant
 - 20+ years industry experience

* Source: Article III. Board Investment Policies, Section 1.0 Investment Governance, Sub-section VI.B. Manager Search and Selection Criteria, p. 176

Risk management philosophy and process

- Total plan risk is defined by the investment strategy selected by the Board
- Risk management is a culture, not a system
- Risk management principles should be applied throughout the investment strategy development process
- Our unique capabilities include:
 - proprietary tool set to monitor ex ante investment risk
 - proprietary tool set to evaluate active risk
 - dedicated risk advisory service business run by a team of senior risk professionals

At Verus, we believe risk is the currency with which investors purchase returns.

Our aim is to optimize risk, not eliminate it.

Portfolio risk dashboard

The rationale for focusing on risk is not to eliminate risk entirely. The rationale is to be able to knowingly take risks and to avoid unintended risks. Risk is the currency with which we buy our investment returns

12/31/2015

1 Portfolio Risk



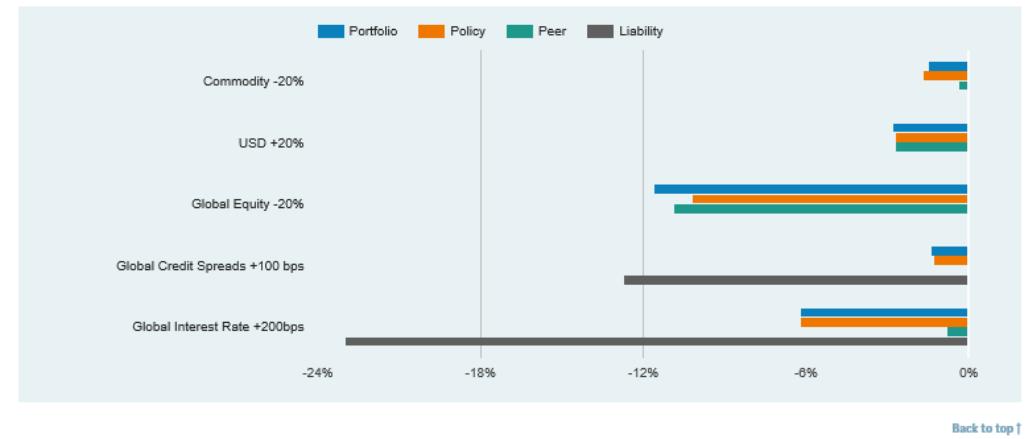
2 Portfolio Equity Beta



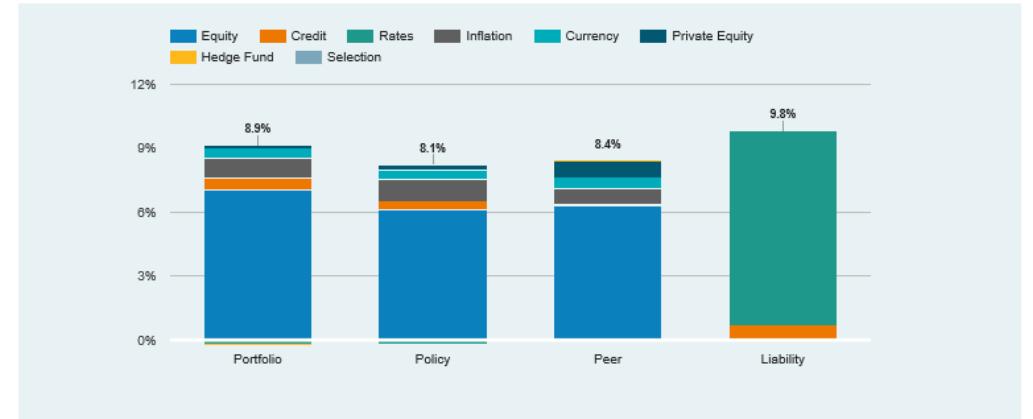
3 Portfolio Interest Rate Risk – Duration



11 Tail Risk – Stress Tests



12 Risk Contribution By Risk Factor



Sample Risk Dashboards

Alternative approaches to adding value

- Governance structure
- Asset allocation
- Risk policy
- Manager structure
- Currency management

Distinguishing factors

- 20+ years of experience consulting to large public plans
- Senior client service team with more than 85 years of combined investment experience.
- Expert resources in the areas of emerging and minority and women-owned managers
- Comprehensive, robust, and disciplined investment strategy development methodology
- Broad and deep capital markets and manager research focused on meeting the needs of our clients
- Unique, proprietary risk management capabilities
- Proximity

Verus has all the capabilities of a premier institutional consulting firm...and then some

The right consultant for your plan

STRATEGIC FIT

- Expert and highly experienced team
- Well-resourced firm with “boutique” service culture
- Broad and deep capital markets and manager research capabilities
- Unique risk management capabilities
- Deep expertise in developing emerging manager programs

ESTABLISHED RECORD OF SUCCESS

- Successfully serving our clients since 1986
- Over 147 relationships across all sponsor segments and plan types
- Consistent top quartile ranking in industry survey of investment consulting firms

UNPARALLELED STABILITY

- Distributed ownership with next generation leadership in place
- 100% employee-owned
- Very low investment professional and client turnover
- Culture of collaboration and partnership – both internally and externally – for the benefit of clients

MEANINGFUL SERVICE

- LACERS would be served by a client team made up of recognized as leaders in the public sector
- Consulting team lead is conveniently located in Los Angeles
- “Client first” culture contributes to low client-to-consultant ratio

II. Appendix

Your consulting team



SCOTT J. WHALEN, CFA

Primary Consultant for LACERS
Executive Managing Director
Senior Consultant
MBA, University of Southern California
BA, Wake Forest University
15 years experience
 Scott Whalen would act as primary consultant to LACERS. Scott serves on Verus' management committee and works with multiple California public plans. He joined Verus in 2002 following a distinguished career in management consulting.



MARGARET S. JADALLAH

Secondary Consultant for LACERS
Managing Director
MBA, University of California, Berkeley
BA, Smith College
22 years experience

Margaret Jadallah would serve as secondary consultant to LACERS. Margaret consults to several public plans, including plans in California. In addition to generalist consulting capabilities, Margaret has extensive experience in manager research, including emerging and minority and women-owned managers.



JEFFREY J. MACLEAN

Back-up Consultant for LACERS
Chief Executive Officer
MBA, University of Virginia
BBA, University of Washington
29 years experience

Jeff Maclean would act as the back-up consultant to LACERS. As CEO, Jeff is the strategic leader of Verus and also maintains several client relationships, including a \$4 billion California public plan.



HERBERT NISHII

Senior Associate Consultant
MBA, University of Southern California
BBA, University of Hawaii
16 years experience

Herbert Nishii would provide analytical support to the LACERS' client service team. Herbie works with multiple California public plans in a senior support role.

Verus is proposing a highly experienced and senior, public-focused service delivery team, ensuring LACERS will receive the attention, expertise, and high quality advice it deserves.

Biographical information



Scott Whalen, CFA

Executive Managing Director | Senior Consultant

Mr. Whalen is primarily responsible for providing strategic investment advice to ensure clients meet their long-term investment objectives. Mr. Whalen is also a Verus shareholder and a key member of the Verus leadership team, overseeing the firm's consulting staff.

Prior to joining Verus in 2002, Mr. Whalen built a distinguished career in management consulting at McKinsey & Company and Ernst & Young, where he led corporate and public sector institutions to increase efficiency and improve operational performance. Mr. Whalen has extensive experience working with multiple stakeholders across industries, where he has honed his ability to foster effective decision-making in challenging environments.

Mr. Whalen is a recognized speaker at industry conferences, where he has presented on a broad range of topics including asset allocation, alternative investing, manager oversight, attaining operational efficiencies in investment programs, the challenges and potential benefits of dynamic asset allocation, and the importance of maintaining a long-term perspective.

Mr. Whalen received a bachelor of arts (BA) in economics from Wake Forest University and a master's degree in business administration (MBA) from the University of Southern California. He is a CFA charter holder (Chartered Financial Analyst) and is a member of the CFA Institute and the CFA Society of Los Angeles.

Biographical information



Margaret S. Jadallah

Managing Director | Senior Consultant

Ms. Jadallah is primarily responsible for providing high quality strategic investment advice and ensuring that clients meet their long-term investment objectives. Ms. Jadallah focuses on public fund consulting. She is also a member of the Verus' investment committee and a Verus shareholder.

Prior to joining Verus in 2016, Ms. Jadallah spent 14 years with Strategic Investment Solutions, where she was a founding member. There she served as a generalist consultant and director of manager research. Ms. Jadallah also worked for Bivium Capital Partners where she was responsible for client service, manager research, and portfolio construction. Prior experience includes consulting to ultra-high net worth individuals at Harris myCFO and a senior manager research role at Callan Associates.

Ms. Jadallah currently sits on the investment committee for YWCA San Francisco and Marin. She also served on the board of San Mateo County Retirement Association for a three-year term.

Ms. Jadallah received a bachelor of arts (BA) in economics from Smith College and a master's degree in business administration (MBA) from the Haas School of Business, University of California, Berkeley.

Biographical information



Jeffrey MacLean

Chief Executive Officer

Mr. MacLean joined Verus in 1992 and is primarily responsible for managing the firm and providing investment advice to several clients. He has over 28 years of investment and consulting experience, working with all asset classes for a range of clients including corporate defined benefit plans, public institutions, multi-employer trusts, endowments, and foundations. He also chairs the firm's management committee.

Mr. MacLean often speaks at investment forums regarding the macro-economic environment, asset allocation, risk management, alternative investments, and industry trends. Prior to joining Verus, Mr. MacLean was Vice President of Shurgard Realty Group, a real estate advisory firm, and a consultant for Arthur Andersen & Company.

Mr. MacLean currently volunteers for Children's Hospital of Los Angeles and he serves on the advisory board for the University of Washington Foster School of Business. He holds a master's degree in business administration (MBA) from the Darden School of Business and a bachelor's degree in business administration (BBA) from the University of Washington, where he served as student body president in his senior year.

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jmacklean@verusinvestments.com

Biographical information



Herbert Nishii

Senior Consulting Associate

Mr. Nishii provides research, analysis, and consulting support to the Los Angeles based consulting team at Verus. In this role, he provides expertise to a variety of value-adding projects including: asset allocation studies, spending policy analysis, and manager fee analysis. He also assists with reviewing and revising investment policy statements.

Mr. Nishii began his career in the industry as an analyst for the Choy Kinney Wo Institutional Consulting Group at Morgan Stanley. Prior to joining Verus in 2006, Mr. Nishii worked as an Investment Specialist for the State of Hawaii Employees' Retirement System.

Mr. Nishii holds a master's degree in business administration (MBA) from the University of Southern California, Marshall School of Business and a bachelors degree in business administration (BBA) in finance and management information systems from the University of Hawaii.

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Verus workforce composition

Vendor
Address

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999 Third Ave., Suite 4200
Seattle, WA 98104

Date Completed:
4/20/17

Category

General Fund Consultant

Occupation	TOTAL COMPOSITION OF WORK FORCE							
	African American <u>Full Time</u>	Hispanic <u>Full Time</u>	Asian or Pacific Islander <u>Full Time</u>	American Indian/ Alaskan Native <u>Full Time</u>	Caucasian (Non Hispanic) <u>Full Time</u>	Total Employees <u>Full Time</u>	Percent (%) Minority <u>Full Time</u>	Gender Male <u>Full Time</u>
								Female <u>Full Time</u>
Officials & Managers	0	1	1	0	16	18	11.11%	12 6
Professionals	2	1	0	13	41	57	28.07%	41 16
Technicians	0	0	1	0	1	2	50.00%	2 0
Sales Workers	0	0	0	0	0	0	0.00%	0 0
Office/Clerical	2	0	1	0	6	9	33.33%	2 7
Semi-Skilled	0	0	0	0	0	0	0.00%	0 0
Unskilled	0	0	0	0	0	0	0.00%	0 0
Service Workers	0	0	0	0	0	0	0.00%	0 0
Other	0	0	0	0	0	0	0.00%	0 0
Total	4	2	3	13	64	86	25.58%	57 29