

Sewerage & Water Board of New Orleans



Chief Investment Officer's Presentation to the Pension Committee

December 18, 2017

December Meeting Agenda

- Ensure Compliance with Target Asset Allocation & Ranges
- Asset-Liability Consultant Search
 - Recommend Hiring Callan (Action Item)
- General Investment Consultant Search (Info Items)
 - Selection Criteria
 - Investment Manager Searches
 - Chief Investment Officer
 - FFC Capital Management
- Governance
 - Follow Up on Trustee Training – drafting policy for on-boarding new Trustees
 - Working Groups (Info Items)
- Communication



ERS Mission Statement

- *Prudently manage an actuarially sound pension fund*
- *solely in the interest of participants and beneficiaries*
- *in a cost-effective manner.*



Governance

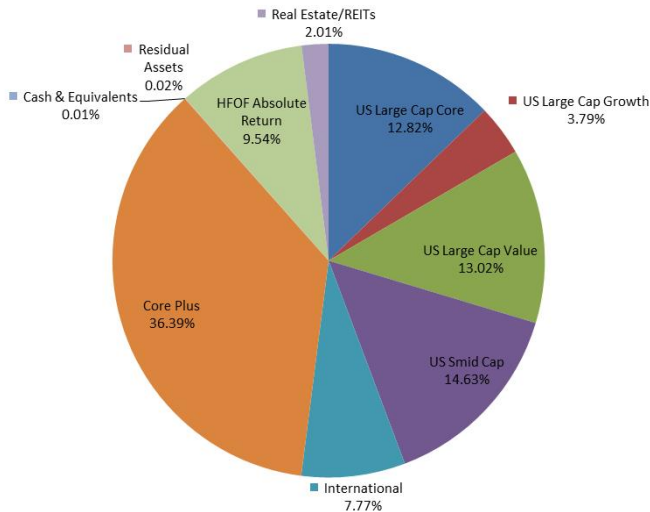
MONITORING ASSET ALLOCATION



Asset Allocation

October 31, 2017

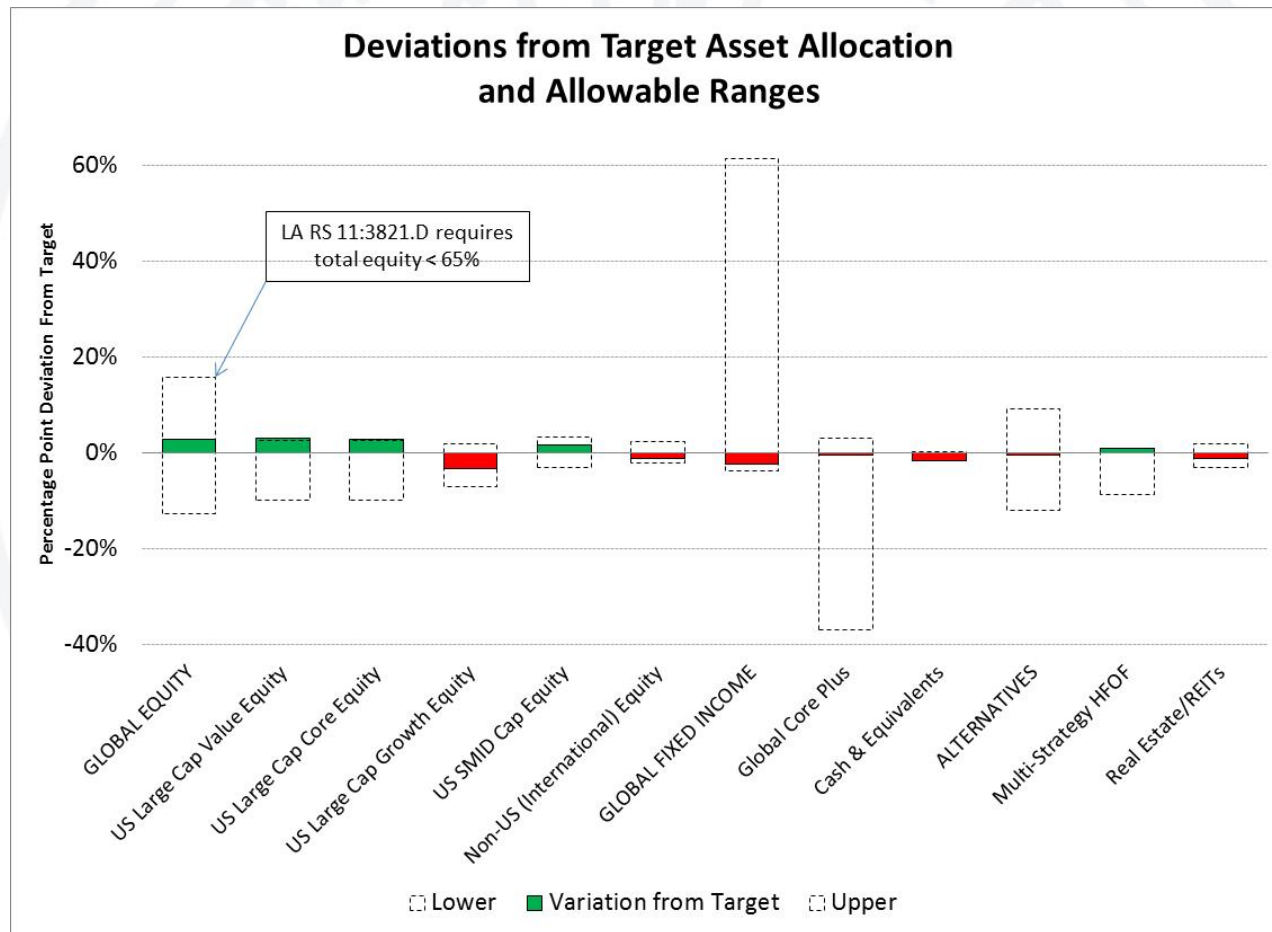
Asset Allocation



Asset Class / Sub Asset Class	Value	Actual	Target	Difference
US Large Cap Core	28,272,341	12.82%	10.00%	2.82%
US Large Cap Growth	8,355,837	3.79%	7.25%	-3.46%
US Large Cap Value	28,705,053	13.02%	10.00%	3.02%
US Smid Cap	32,241,418	14.63%	13.00%	1.63%
International	17,120,899	7.77%	9.00%	-1.23%
Total EQUITY	114,695,548	52.03%	49.25%	2.78%
Core Plus	80,229,144	36.39%	37.00%	-0.61%
Cash & Equivalents	28,429	0.01%	1.75%	-1.74%
Residual Assets	43,075	0.02%	0.00%	0.02%
Total FIXED INCOME	80,300,648	36.43%	38.75%	-2.32%
HFOF Absolute Return	21,031,859	9.54%	8.75%	0.79%
Real Estate/REITs	4,421,949	2.01%	3.25%	-1.24%
Total ALTERNATIVES	25,453,808	11.55%	12.00%	-0.45%
TOTAL	220,450,004	100.00%	100.00%	0.00%

Compliance with Asset Allocation Policy

October 31, 2017



Compliance with Policy

Asset Allocation

- In October, US Large Cap Core Equity and US Large Cap Value Equity continued to be slightly above range maximums. Otherwise, the fund was compliant with statute and IPS.
- A rebalance to target was undertaken and the last trade was completed on December 6th.
- The rebalancing was congruent with policy.
 - The IPS states that the Plan's allocation status be reviewed "at least quarterly. It is anticipated that active rebalancing will occur at least annually."
- The CIO would like to monitor the asset allocation on a monthly basis, which will require estimates from our consultant. Delegation of signature authority within S&WB is needed to ensure timely execution.



Recommendation

ASSET-LIABILITY CONSULTANT SEARCH



Recommend Hiring Callan

- Process followed the S&WB Professional Services Procurement Policy.
- The RFP was advertised nationally in Pensions & Investments.
- The Proposal Selection Committee (PSC) evaluated the four respondent RFPs and scored according to the criteria below.

Relative Weights of RFP Evaluation Criteria		
General Topic	Questions Focused On	Points
Organization	Longevity, stability, focus	5.0
Dedicated Resources	Quality, quantity	15.0
Experience	Performing A-L studies, specialized	15.0
Overall Process	Clarity, robustness, innovation, reasonable timeline	5.0
Specific Process	Asset allocation, liability modeling, liquidity modeling, stochastic simulations, scenario modeling	20.0
Customization	Scenarios	7.5
Customization	Risk Capacity	10.0
Output	Statement of risk appetite	7.5
Output	Metrics	5.0
Fees	Fees	10.0
TOTAL		100.0

Ranking of PSC Combined Scores	
Callan	422.0
RVK	418.5
Verus	414.5
Aon	413.0



Discussion

GENERAL INVESTMENT CONSULTANT SEARCH



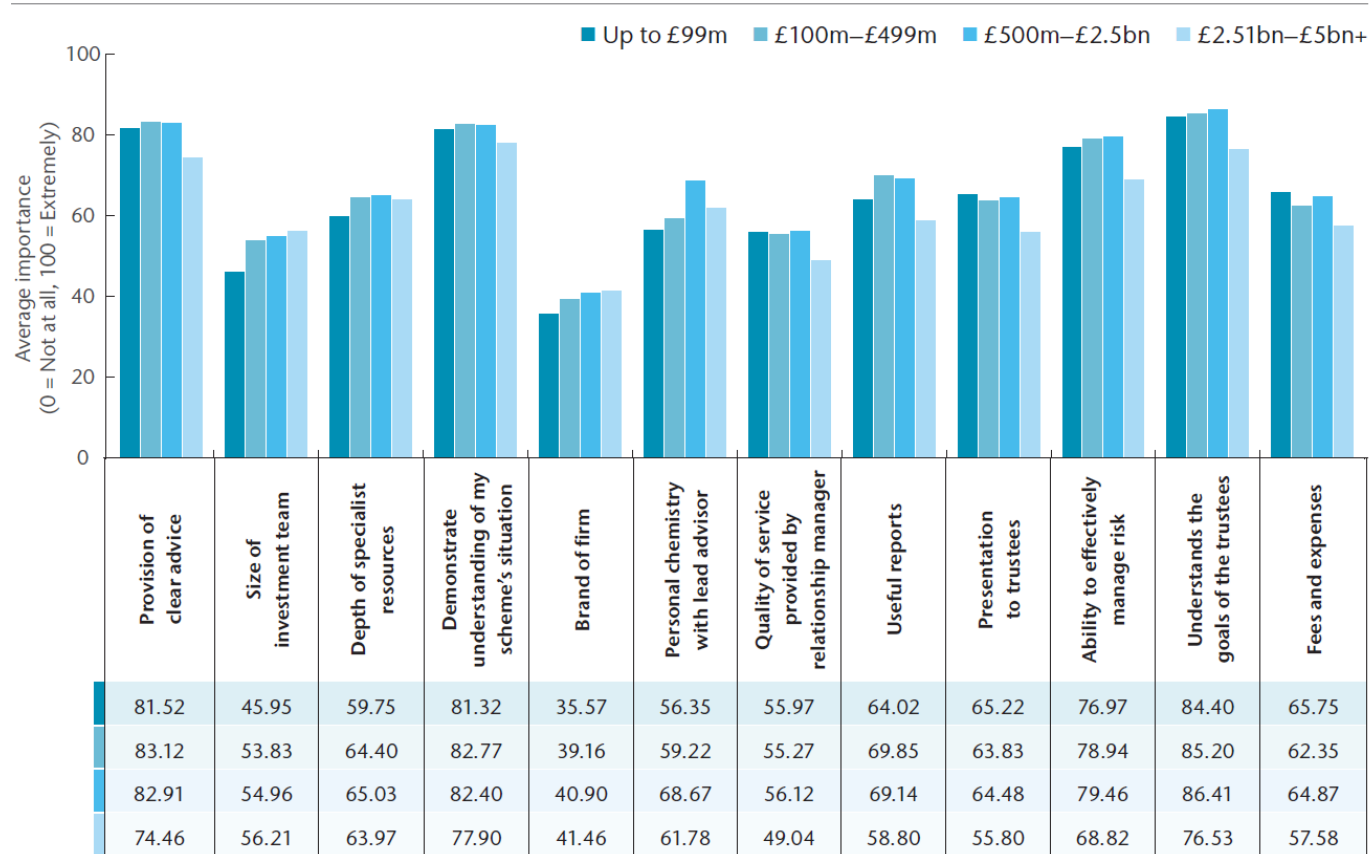
Part One – Criteria for Selecting a General Investment Consultant

GENERAL INVESTMENT CONSULTANT SEARCH



Survey of Trustee Criteria for Selecting General Investment Consultant

Figure 6 – When selecting investment consultants, what factors are important in making this decision?



University of Leeds and Aon, "Selecting Fund Managers and Consultants - What Do Trustees Look For?" 2017

Consultant Deliverables

Category	Deliverables	Characteristics
Strategic	Advice on governance (structure, decision-making, documentation).	Consulting firm that leverages experienced, knowledgeable, educated, tenured, collegial staff and that takes initiative (not just responsive). Client load provides capacity for this account.
Strategic	Board and Staff Education	Attendance at Pension Committee meetings. Workshops and conferences. Insightful, readable published research and reports.
Strategic	Asset-Liability Study	Flexible stochastic and scenario analyses that can assist articulation of risk capacity and appetite and translate into policy actions.
Strategic	Strategic and Tactical Asset Allocation, Asset Class Strategy (active/passive, hedging, benchmarks), Portfolio Structure, Risk Management	Broad and deep coverage and analysis across asset classes. Experience across implementation: DB/DC, MVO, LDI, Risk Parity, frozen plans, etc.
Implementation	Traditional and <u>Alternative</u> Manager Research and Selection	Consultant should have a cogent investment philosophy, consistently and rigorously applied by sizeable, experienced, stable, and knowledgeable team, aided by a proprietary database and state-of-the-art analytical tools. Consultant has differentiated research and opinions that result in excess return producing performance and any conflicts are sufficiently disclosed.
Implementation	Analytical Support	High-performing analysts who are curious, candid, reliably service-oriented, with advanced statistical, database, and spreadsheet abilities.
Implementation	<u>Differentiated and Useful Market Metrics</u>	Timely, differentiated (including not just market returns, but also fund flows, valuations, trading volume, etc.), and useful data and information.
Implementation	<u>Investment Operations</u>	Rebalancing and transitions. Cash flow management. Timeliness, frequency, accuracy, and relevance of reports. Compliance. Consultant is capable of quickly and seamlessly filling vacancies.
Evaluation	Performance, <u>Risk</u> , and Process Evaluation	Regular, standardized portfolio and benchmark performance analysis, attribution, and evaluation. Relevance and utility for a manager of managers.
Evaluation	<u>Peer Benchmarking</u>	Fund-level and manager comparisons of <u>structure</u> , <u>processes</u> , returns, risk, and <u>costs</u> .



Suggestion for Discussion for Investment Consultant Search

- The RFP could be divided into two contractual roles: (1) general investment consultant and (2) an investment operations consultant. There is precedent.
- Rather than a prime and subcontractor arrangement, both roles would be contracted directly with ERS. The investment operations consultant would be suitable for EDBP. Initial estimates suggest that the EDBP goal could be achieved with this arrangement.
- ERS should draft, discuss, and adopt a modified procurement policy for the investment consultant search.
 - Retain from current process:
 - RFP
 - Proposal Selection Committee
 - Add these new steps to the process:
 - CIO conduct on-site due diligence on the top 2-3 candidates as ranked by the Proposal Selection Committee. The CIO would provide a written report to the PSC.
 - Based upon the PSC Ranking, CIO due diligence, 2-3 candidates would formally present to the Pension Committee which would vote on which finalist to recommend to the Board of Trustees.



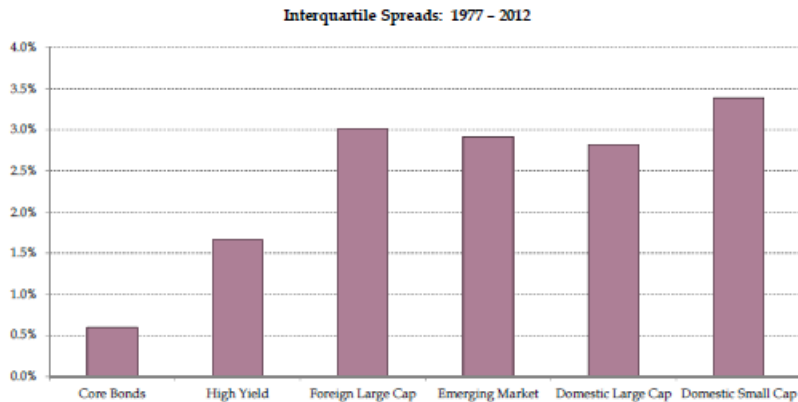
Part Two – The Use of Investment Consultant to Select Investment Managers

GENERAL INVESTMENT CONSULTANT SEARCH

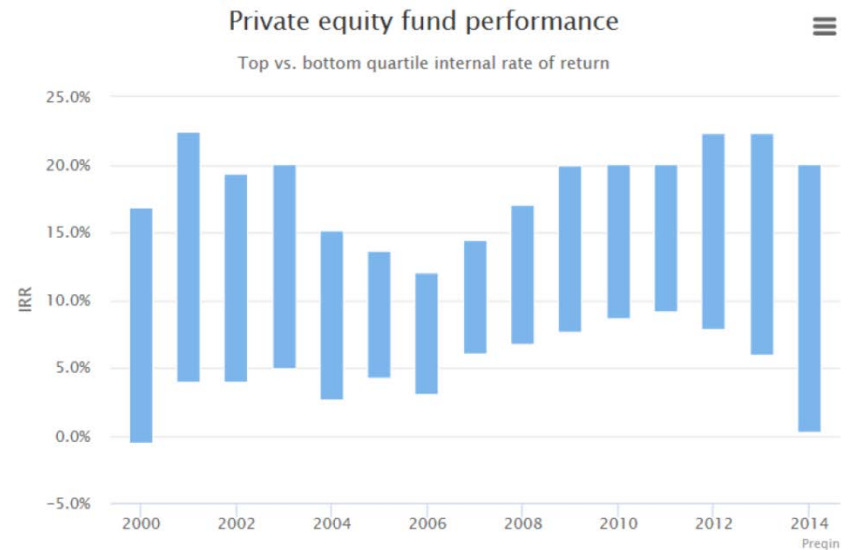


Investment Manager Selection is Important

The interquartile spread (top quartile returns minus bottom quartile returns) is a measure of dispersion of investment manager performance.



Source: Meketa Investment Group, "Active Manager Performance: Alpha and Persistence," undated.



Source: Pensions & Investments, May 2, 2017.



There Are a Lot of Managers to Sort Through to Find Future Winners

Asset Class	Approximate # of Funds
Public Equity ¹	5,574
Fixed Income ¹	2,483
Hedge Funds ¹	5,718
Private Equity ²	1,865
Real Estate ²	577

1 FFC Capital Management and PSN

2 Prequin (funds in the market)



But Past Performance Doesn't Guarantee Future Returns (1)

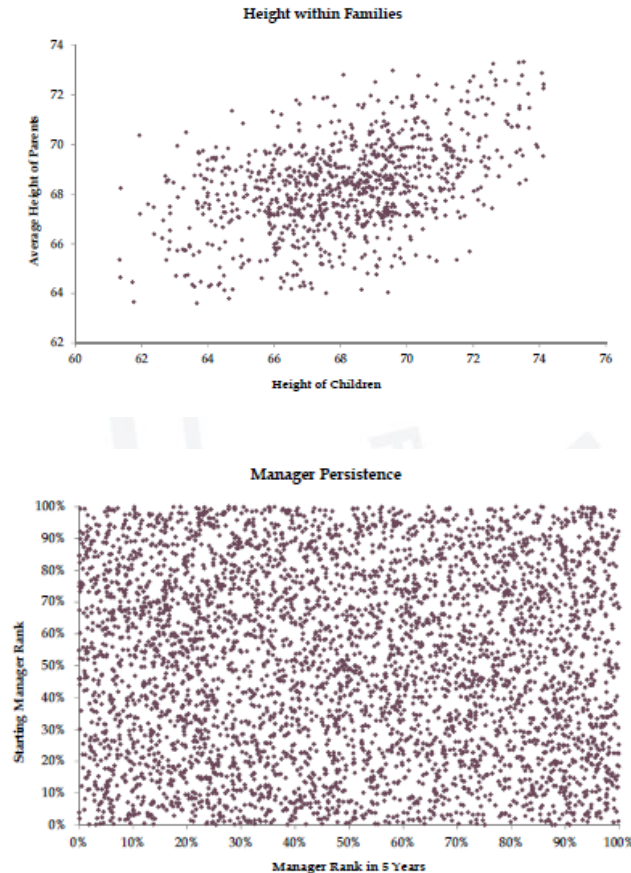


Exhibit 1
Ten-year top quartile funds^{2,3,4} that fell below median during one or more three- and five-year periods

Category	Number of Funds with 10-Year Track Records	Number of 10-Year Top Quartile Funds	Number of 10-Year Top Quartile Funds Below Median For a 3-Year Period	Percent of 10-Year Top Quartile Funds Below Median For a 3-Year Period	Average Number of Consecutive Quarters Spent In Bottom Half of Peer Group	Percent of 10-Year Top Quartile Funds Below Median For a 5-Year Period
Intermediate Bond	199	50	41	82%	4.8	36%
High Yield Bond	105	27	25	93%	4.8	44%
International/Global Bond	40	10	9	90%	6.2	50%
Large Cap Value	215	55	52	95%	6.0	67%
Large Cap Core	293	74	69	93%	6.1	62%
Large Cap Growth	312	79	73	92%	5.3	51%
Mid Cap Value	67	17	16	94%	4.9	82%
Mid Cap Core	73	19	18	95%	4.6	37%
Mid Cap Growth	155	39	35	90%	4.4	41%
Small Cap Value	72	18	18	100%	7.0	78%
Small Cap Core	142	36	34	94%	6.1	69%
Small Cap Growth	153	39	35	90%	6.4	64%
International Value	50	13	12	92%	5.7	77%
International Core	112	29	27	93%	5.0	41%
International Growth	49	13	12	92%	5.3	54%
Emerging Markets	58	15	13	87%	6.0	53%
Real Estate	49	13	13	100%	6.3	62%
Total	2144	546	502			
Weighted Average				92%	5.5	56%

² Many fund families offer multiple versions of the same fund, but with variations of the fees that are charged and investor qualifications. Morningstar's "distinct portfolio only" feature removes all duplicate options. Morningstar normally designates the oldest share class as the distinct portfolio.

³ Morningstar data is not immune to survivorship bias. Each mutual fund that survived the ten-year stretch was captured regardless of performance. In addition, the Morningstar data generates returns net of expenses.

⁴ All ten-year calculations across the paper reflect the period from 12/31/04 to 12/31/14.

Source: DiMeo Schneider & Associates, "The Next Chapter in the Active vs. Passive Debate," October 2015.

Source: Meketa Investment Group, "Active Manager Performance: Alpha and Persistence," Undated.



Past Performance Doesn't Guarantee Future Returns (2)

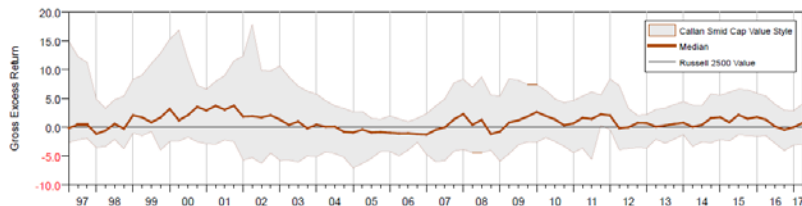
SMID Cap Value Equity Style versus Russell 2500 Value

Percent of rolling 3-year periods where Manager Beat Benchmark by more than Fee Hurdle – by Percentile

Fee Hurdle	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%	0.70%	0.75%	0.80%
Median	64%	63%	59%	56%	56%	54%	54%	53%	51%	48%
45th Percentile	76%	75%	75%	71%	69%	66%	66%	64%	64%	63%
40th Percentile	81%	81%	79%	79%	78%	78%	78%	75%	75%	74%
35th Percentile	85%	85%	85%	81%	81%	80%	80%	80%	80%	79%
30th Percentile	89%	89%	85%	85%	85%	84%	84%	81%	81%	81%
25th Percentile	96%	96%	94%	93%	93%	90%	90%	89%	86%	86%

Average Annualized 3-Year Excess Return (gross) – Median Manager: 0.82%

Rolling 12 Quarter Gross Excess Return relative to Russell 2500 Value for 20 Years ended March 31, 2017



Callan | Knowledge. Experience. Integrity.

Active versus Passive 23

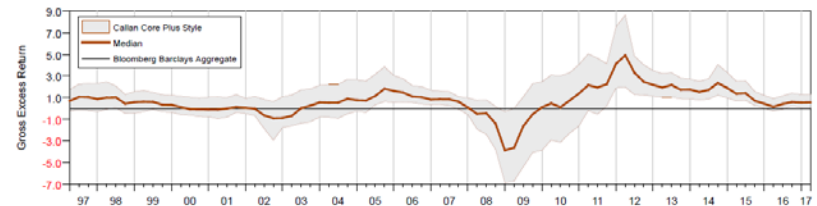
Core Plus Bond Style versus Bloomberg Barclays Aggregate

Percent of rolling 3-year periods where Manager Beat Benchmark by more than Fee Hurdle – by Percentile

Fee Hurdle	0.20%	0.25%	0.30%	0.35%	0.40%	0.45%	0.50%	0.55%	0.60%	0.65%
Median	69%	69%	68%	65%	60%	61%	60%	56%	53%	49%
45th Percentile	71%	70%	68%	68%	68%	65%	61%	61%	59%	56%
40th Percentile	76%	74%	74%	71%	71%	70%	68%	64%	64%	63%
35th Percentile	80%	79%	76%	74%	73%	73%	73%	70%	69%	64%
30th Percentile	84%	83%	83%	81%	80%	78%	75%	74%	73%	69%
25th Percentile	90%	88%	88%	88%	84%	81%	80%	79%	76%	75%

Average Annualized 3-Year Excess Return (gross) – Median Manager: 0.70%

Rolling 12 Quarter Gross Excess Return relative to Bloomberg Barclays Aggregate for 20 Years ended March 31, 2017



Callan | Knowledge. Experience. Integrity.

Active versus Passive 41



Untangling Skill and Luck*

- Skill = Observed Outcome - Luck
- “Luck is a chance occurrence that affects a person or a group; can be good or bad. Luck is out of one’s control and unpredictable.”
- “Quick and easy way to test whether an activity involves skill: ask whether you can lose on purpose.”
- “When luck has little influence, a good process will always have a good outcome. When a measure of luck is involved, a good process will have a good outcome, but only over time.”
- Complex adaptive systems effectively obscure cause and effect.

*From Michael Mauboussin, “The Success Equation: Untangling Skill and Luck in Business, Sports, and Investing,” Harvard Business Review Press, 2012, pages 13-14, 19, and 73.



So How Can We Evaluate Managers?

Qualitative Drivers

- Drivers of Future Outperformance
 - Investment Philosophy/Strategy
 - Processes
 - Resources
- Factors that Enhance or Detract Drivers
 - Organizational Culture
 - Alignment of Interests



Due Diligence Requires

- Quantitative analysis
- Qualitative
 - Insight – investment and operations (including legal)
 - Breadth of coverage
 - Depth of investigation
 - Frequent contact



FFC Capital Management

Description of Manager Search Process



Recommendation on Investment Consultant Role in Selecting Investment Managers

- Include in RFP for a General Investment Consultant
 - Responsibility for providing non-discretionary advice on investment manager selection.
 - Questions on the consultants' investment manager selection philosophy, process, resources, and alignment of interest.
- Begin drafting a investment manager procurement policy for ERS.
 - Include Procurement and Office of Special Counsel in process.
 - Incorporate
 - Complete drafting after the general investment consultant search.
 - Submit the draft policy to the Pension Committee for review and to the Board of Trustees for approval.



Governance

WORKING GROUPS



Working Groups

- The Pension Committee Chairman would like to form small (non-quorum) working groups to discuss, seek input from the Committees they represent, form a consensus, and propose answers to the following tasks:
 - Decide whether to amend the current investment objective of “*maintain flexibility in determining the future level of contributions*” to “*provide a stable funding environment which mitigates the effect of large changes in investment performance on funding contribution volatility.*” Develop a “funding policy” (GFOA Best Practice).
 - Determine the decision path for approving changes in the investment policy (e.g., asset allocation).
 - Determine the decision path for approving changes in employer contributions.
 - Determine the decision path for approving changes in employee contributions.
 - Determine the decision path for approving changes in pension benefits.
- Depending on the task a representative from the Pension, Finance and Administration, Governance, and Strategy Committees will work with the Senior Management, Chief Investment Officer, and outside advisors (e.g., Counsel, Investment Consultant, and Actuary).



Discussion

COMMUNICATION WITH PARTICIPANTS & BENEFICIARIES



Communication with Participants and Beneficiaries

- CFA Code of Conduct for Members of a Pension Scheme Governing Body: “Communicate with participants, beneficiaries, and supervisory authorities in a timely, accurate, and transparent manner.”
- Methods of Communication
 - ✓ Managers’ Meeting
 - ✓ Pipeliner
 - ✓ Intranet
 - ☐ Mass Meetings
 - Who will set up? When? Message?
 - ☐ Letter to Retirees
 - Who will set up? When? Message?

Pension Fund Intranet

http://nettest/Departments/Pension/

File Edit View Favorites Tools Help

Convert Select

nextthought Intranet Google FT WSJ NYT WP The Guardian Economist TI P&I CIO FundFire LA Law Board CFA GFOA Aon Callan FFC FEG

Text Size Webmail Swbno.org Guest

SEWERAGE & WATER BOARD
WATER METER
NEW ORLEANS, LA

INTRANET
Sewerage and Water Board of New Orleans

Home Departments Forms Reports Manuals & Training Benefits Information Business Resources

Departments

- Computer Center
- EDBP
- ERS Pension Fund
- Emergency Management
- Personnel
- Revenue Administration
- Safety

Intranet Home

- Departments
- Forms
- Reports
- Manuals & Training
- Benefits Information
- Business Resources
- External Links

Quick Links

- Emergency Plan
- Event Calendar
- Meeting Videos
- The Pipeliner Archive
- Wellness Newsletter
- Recovery Data

Home / Departments / Employees' Retirement System Pension Fund

Employees' Retirement System Pension Fund

The Mission of the Employees' Retirement System of the Sewerage & Water Board is to prudently manage an actuarially sound pension fund solely in the interest of participants and beneficiaries in a cost-effective manner.

Announcements

This is where announcements could go, but there are currently no pension-related announcements.

Contacts

- Timothy Viezer, Chief Investment Officer
- John Wilson, Employee Trustee
- Chante' Powell-Pierre, Employee Trustee
- Christopher Bergeron, Employee Trustee

Governing Documents

- La RS 11:3821
- Rules and Regulations of the ERS of the S&WB
- By-Laws of the S&WB
- Investment Policy Statement
- Resolutions
- CFA Institute's Code of Conduct for Members of a Pension Scheme Governing Board
- CFA Code of Ethics and Standards of Professional Conduct

Pension Committee Presentations

- 2017-10-18 Presentation by Chief Investment Officer
- 2017-08-14 Presentation by Chief Investment Officer



January Meeting Agenda

- Adopt Investment Philosophy
- Discuss Investment Objectives Prioritization
 - Prepare by reviewing Investment Policy Statement and A Primer for Investment Trustees “Session 4: Investment Objectives.”



Appendix A

CFA Institute's Code of Conduct for Members of a Pension Scheme Governing Body

1. Act in good faith and in the best interest of the scheme participants and beneficiaries.
2. Act with prudence and reasonable care.
3. Act with skill, competence, and diligence.
4. Maintain independence and objectivity by, among other actions, avoiding conflicts of interest, refraining from self-dealing, and refusing any gift that could reasonably be expected to affect their loyalty.
5. Abide by all applicable laws, rules, and regulations, including the terms of the scheme documents.
6. Deal fairly, objectively, and impartially with all participants and beneficiaries.
7. Take actions that are consistent with the established mission of the scheme and the policies that support that mission.
8. Review on a regular basis the efficiency and effectiveness of the scheme's success in meeting its goals, including assessing the performance and actions of scheme service providers, such as investment managers, consultants, and actuaries.
9. Maintain confidentiality of scheme, participant, and beneficiary information.
10. Communicate with participants, beneficiaries, and supervisory authorities in a timely, accurate, and transparent manner.



Appendix B

Investment Philosophy

- The goal of investing is to earn enough to meet your objectives.
- Understand what you can control (in descending order: costs, liquidity, risk, and returns).
 - While you cannot control returns, you can decide to buy low and sell high.
- We have met the enemy, and he is us.
- There are limits to prediction:
 - The future is unknowable, so diversify.
 - Market timing is generally unrewarding.
 - Markets don't just mean revert, they overshoot.
- There are trade-offs in investing:
 - More risk must be assumed to gain higher expected returns.
 - Excess returns and market efficiency are inversely related and often cyclical.
 - Too much capital is the enemy of good returns.
- Performance cannot be guaranteed, but there are some predictions:
 - Philosophy, processes, and organizational resources drive excess returns. Culture and alignment of interest can enhance or detract.
 - IR is a function of skills, breadth, and freedom.



Appendix C

Committee & Board Decisions

I. **FOUNDATIONAL DECISIONS** (October 2017 – December 2017)

A. Clarify governance focus

- ✓ Amend the current IPS to reflect 2015 decisions.
- ✓ Adopt an ERS Mission Statement
- ✓ Adopt the CFA Code of Conduct for Members of a Pension Governing Body
- ✓ Adopt a resolution to strongly encourage BOT to adhere to LA RS 11:185 Trustee Education requirements starting September 2018.

B. Decisions needed to complete Asset-Liability Study By June 2018

- 5. Amend and prioritize investment objectives
- 6. Hire Asset-Liability Consultant

C. Decisions needed to issue RFP for General Investment Consultant

- 7. Adopt Investment Philosophy
- 8. Agree upon an investment manager search process (based upon philosophy & policies)
- 9. Agree upon investment consultant duties and governance matrix



Appendix C

Committee & Board Decisions

II. **MAJOR DECISIONS** (May 2018 – September 2018)*

D. Preparation

10. Governance Matrix:

- a. Who decides (and how) benefits?
- b. Who decides (and how) employer contributions?
- c. Who decides (and how) employee contributions?
- d. Who decides (and how) investment policy?

11. Hire General Investment Consultant

12. Adopt Statement of Risk Capacity and Risk Appetite

E. The BIG THREE Decision-Making

13. Benefit Policy

14. Contribution Policy

- a. Employee
- b. Employer

15. Investment Policy – Asset Allocation



Appendix C

Committee & Board Decisions

III. **FORMALIZE CUMULATIVE DECISIONS** (September 2018 – December 2018)*

F. Update Documents

16. Amend Investment Policy Statement

17. Amend Bylaws

18. Amend Rules and Regulations

IV. **IMPLEMENT ASSET ALLOCATION** (September 2018 – March 2019)*

G. Portfolio Construction

H. Investment Managers

*Dates are tentative and subject to revision.



Sewerage & Water Board of New Orleans



Re-Building the City's Water Systems for the 21st Century



SEWERAGE AND WATER BOARD

Inter-Office Memorandum

Date: November 29, 2017

To: Chairman Joseph Peychaud and the Pension Committee

From: Timothy W. Viezer, PhD, CFA, CAIA – Chief Investment Officer

Re: Recommendation to Hire Callan LLC for Asset-Liability Study

Recommendation

I recommend that the Pension Committee of the Employees' Retirement System of the Sewerage & Water Board of New Orleans (ERS) approve the choice of the Proposal Selection Committee¹ (PSC) and forward the decision to hire Callan Associates ("Callan") to perform an asset-liability study to the Board of Trustees for endorsement.

Summary

- The process followed the Professional Services Procurement Policy.
- The Request for Proposal (RFP) was advertised nationally and four, large, well-known, qualified investment consulting firms responded.
- The PSC evaluated the four responses and scored the responses according to ranking criteria and weighting established in the RFP. The PSC selected Callan LLC.
- Callan LLC was founded in 1973 and has \$2.2 trillion in Assets Under Advisement (AUA). The firm 188 employees and is 100% employee-owned. Since 2008, Callan has performed 196 asset-liability studies or about 21 studies per year. The seven person asset-liability team has an average of 26 years of experience and 16 years tenure at Callan. Callan has proposed a one-time, all-inclusive fee of \$45,000.

Background

What is an Asset-Liability Study?

An asset-liability study is a tool for understanding the dynamic relationship between pension plan assets and liabilities over time. An asset-liability study the only standard analysis that fully links all three aspects of a pension plan's key financial drivers: benefits policy, contribution policy, and investment policy. An asset-liability study identifies *future trends* in the financial health of a pension plan based upon economic uncertainties that may not be evident from an actuarial valuation, which provides only a snapshot at a *point in time*. An asset-liability study illustrates the impact of various asset allocation targets on funded status

¹ Short biographies of the five PSC members are included in the Appendix.

and required contributions under a range of macroeconomic scenarios. An asset-liability study will help determine the appropriate level of risk in the context of the pension plan liabilities.

Why Conduct an Asset-Liability Study?

The mission of the ERS is to “prudently manage an actuarially sound pension fund solely in the interest of participants and beneficiaries in a cost-effective manner.” We want to honor S&WB pension obligations. In order to prepare to try to honor these pension obligations, we need a forward-looking tool to evaluate the pension’s key financial drivers.

The Government Finance Officers Association best practice² suggests that “retirement systems should periodically conduct asset-liability studies for use in reviewing their asset allocation policies.” It is a standard industry practice for a pension plan sponsor to conduct an asset-liability study every 3-5 years or either after or in anticipation of a significant change in demographics, plan design, sponsor circumstances, or funded status. Conversations with our consultant, former Executive Director, and Pension Committee members suggest that S&WB has not conducted an asset-liability study since before Katrina (perhaps 13 years ago). Moreover, we anticipate that about 40% of our workforce is eligible to retire within the next 5 years.

The Chief Investment Officer (CIO) recommended conducting an asset-liability study to senior management and the Pension Committee in the face of: (1) a potentially large change in the demographics of the S&WB active/retired participants, (2) the need to review the asset allocation, and (3) the desire to move the management of the pension in line with best practice.

Prior to the hiring of the CIO, FFC Capital Management also recommended conducting an asset-liability study. However, FFC does not have the internal capability to conduct an asset-liability study and would have needed to subcontract the work. As a result, the CIO recommended soliciting RFPs through S&WB’s Professional Services Procurement Policy.³

Process

The search for an asset-liability study adhered to SWB’s Professional Services Procurement Policy. The outline of steps and dates are included here to document that compliance and for the Pension Committee’s reference in discussions of the optimal search processes for investment-related vendors for the ERS.

- June 1 – CIO forwarded “Memo Recommendation on Asset-Liability Study Search” to the Deputy Director – Administration and later discussed with the Executive Director. The recommendation was accepted.

² Government Finance Officers Association, Best Practice “Sustainable Funding Practices for Defined Benefit Pensions and Other Postemployment Benefits (OPEB),” January 2016.

³ Sewerage & Water Board of New Orleans Policy Memorandum No. 95 “Professional Services Procurement Policy,” Revised October 15, 2014.

- June 19 – CIO presents an action plan that includes an asset-liability study to the Pension Committee.
- July 17 – CIO introduced asset-liabilities studies to the Pension Committee.
- July 25 – CIO forwards to the Staff Contract Review Committee a completed “Contract Description” for the review and notes a Disadvantaged Business Enterprise (DBE) allocation was neither feasible nor industry practice with respect to asset-liability studies.
- July 28 – CIO recommends to the Executive Director, five individuals for the Proposal Selection Committee.⁴
- August 9 – Staff Contract Review Committee met and set an EDBP participation goal of 0% for the asset-liability consultant search.
- September 6 – CIO completed draft RFP and forwarded it for approval to senior management.
- September 27 – The Director of Procurement issued the RFP and advertised the search nationally in Pensions & Investments, later revised removing minimum AUM
- October 2 – Procurement posted a revised RFP which removed the minimum AUA requirement.
- October 16 – CIO updated the Pension Committee on the search’s progress.
- October 20 – 4 RFPs were received by the due date.
- November 7 – The Director of Procurement reviewed the RFP evaluation process with members of the Proposal Selection Committee and received signed statements indicating each member had no conflicts of interest.
- November 27 – The PSC met in a public meeting and announced their scores for each of the four investment consultant firms. The RFP included the relative weights of evaluation criteria which are summarized below.

Table 1: Relative Weights of RFP Evaluation Criteria		
General Topic	Questions Focused On	Points
Organization	Longevity, stability, focus	5.0
Dedicated Resources	Quality, quantity	15.0
Experience	Performing A-L studies, specialized	15.0
Overall Process	Clarity, robustness, innovation, reasonable timeline	5.0
Specific Process	Asset allocation, liability modeling, liquidity modeling, stochastic simulations, scenario modeling	20.0
Customization	Scenarios	7.5
Customization	Risk Capacity	10.0
Output	Statement of risk appetite	7.5
Output	Metrics	5.0
Fees	Fees	10.0
TOTAL		100.0

The RFP (excluding appendices) was 18 pages long and contained over 70 questions.

⁴ The original PSC recommendation included Chief Financial Officer Bob Miller. However, Bob left S&WB on October 13 to become the Director of Public Works at the City of Jackson Mississippi. Based upon Bob’s suggestion for a replacement and staff availability, Tamika Hyde

Short Description of Responding Firms

- Aon Hewitt Investment Consulting, Inc. (AHIC) was founded by legacy organizations that date to 1974. AHIC is headquartered in Chicago, Illinois and is an indirect, wholly-owned subsidiary of Aon plc which is listed in the NYSE. AHIC has over 300 employees and has \$2.0 trillion in Assets Under Advisement (AUA). AHIC has performed 543 asset-liability studies over the past two years and averages 200-300 studies per year. Their investment policy team is led by an individual with 23 years of experience and 10 years tenure at AHIC. The team leverages 30 individuals in the United States. AHIC proposed a fee of \$148,000.
- Callan LLC was founded in 1973 and has \$2.2 trillion in AUA. The firm is headquartered in San Francisco, California and has 188 employees and is 100% employee-owned. Since 2008, Callan has performed 196 asset-liability studies or about 21 studies per year. The seven person asset-liability team has an average of 26 years of experience and 16 years tenure at Callan. Callan has proposed a one-time, all-inclusive fee of \$45,000.
- RVK, Inc. (formerly known as R.V. Kuhns & Associates, Inc.) was founded in 1985 and has \$2.1 trillion in AUA. The firm is headquartered in Portland, Oregon and has more than 100 employees and is 100% employee-owned. Since 2008, RVK has performed 50 asset-liability studies or about 5 studies per year. The five person project team has an average of 22 years of experience. The four employees have an average tenure of 4.5 years. The team includes a consulting actuary outside the firm. RVK proposed an all-inclusive fee of \$43,500 for Phase I of the asset-liability study. For Phase II, RVK proposed a fee of \$7,500 per additional report/output (scenario) and \$2,500 for each additional in-person meeting.
- Verus Advisory, Inc. (formerly known as Wurts & Associates, Inc.) was founded in 1986 and headquartered in Seattle, Washington. The firm has 85 employees and has \$0.3 trillion in AUA. Since 2004, Verus has performed 200 asset-liability studies or about 15 studies per year. The six person team has an average of 13 years of experience and 6 years tenure. Verus proposed an all-inclusive fee of \$95,000.

The PSC evaluated each of the 4 RFP responses and scored them using the information in Table 1. The combined scores (out of a possible total of 500; higher is better) of the PSC for each of the four firms are ranked below in Table 2. The PSC scored Callan the highest and therefore is the firm recommended.

Table 2: Ranking of PSC Combined Scores	
Callan	422.0
RVK	418.5
Verus	414.5
Aon	413.0

Next Steps

Contingent upon the Pension Committee's acceptance of this recommendation and Board of Trustee approval, the CIO and Legal will negotiate a contract and circulate the contract to the

Departments listed in the Professional Services Procurement Policy to ascertain that it complies with all policies, regulations, and requirements under their jurisdiction.

Appendix: Short Biographies of Proposal Selection Committee Members

Jesse Evans, Jr. is the Director of the City of New Orleans Employees' Retirement System. Jesse has managed the daily operations of that pension plan over the past 10 years. Prior to his employment with the City of New Orleans, Jesse worked for 13 years in both banking and investments. Jesse earned 2 bachelor's degrees (Accounting and Management Information Science) and an MBA with a concentration in Finance from Louisiana Tech University. He was formerly licensed with FINRA where he held Series 7, 24, 53, 63, and 65 licenses.

Tamika Hyde is a Management Development Specialist at the Sewerage & Water Board of New Orleans. Prior to joining S&WB 2.5 years ago, she worked in accounting. Tamika has earned a bachelor's degree in Accounting from Southern University at New Orleans and an MS in Accounting from the University of Phoenix.

Mohammed Owusu is an Administration Project Manager at the Sewerage & Water Board of New Orleans. Prior to joining S&WB, his 29 years of experience working in state and local government included roles as Deputy Director to the Deputy Chief Administrative Officer for Finance and Administration for the City of Richmond, Virginia, Associate Treasurer for the District of Columbia, and Debt/Innovative Finance Manager for the Virginia Department of Transportation. Mohammed earned a bachelor's degree in Philosophy and English from the University of Ghana, Legon and an MBA with a concentration in Finance from Texas A&M.

James Thompson is currently an attorney in the Office of Special Counsel of the Sewerage & Water Board of New Orleans. Prior to joining the Office of Special Counsel in 2015, James was in private practice for six years advising governmental pension plans on tax and other related matters. Of particular note, he has represented the Louisiana State Employees Retirement System, the Louisiana Sheriffs' Retirement and Relief Fund, the Louisiana Assessors' Retirement Fund, the Louisiana Clerks of Court Retirement System, the Louisiana Municipal Employees Retirement System and the New Orleans Firefighters Pension and Relief Fund. He earned a bachelor's degree in Economics and International Business from Penn State University, JD from Loyola University New Orleans, and LLM in Taxation from Villanova University's Charles Widger School of Law. James also sits on the Board of Directors of the Louisiana Trustee Education Council.

Tim Viezer is the Chief Investment Officer at the Sewerage & Water Board of New Orleans. Prior to joining S&WB, he had 23 years of experience working for public pensions in Ohio and North Carolina and as a Managing Director and Acting Chief Investment Officer at the University of Cincinnati endowment. He also taught economics, finance, and statistics for 14 years as an adjunct professor. Tim earned 4 degrees at Kent State University: BBA and MAE in Economics and BA and MA in Political Science; as well as a PhD in Agricultural (applied) Economics with a concentration in finance from The Ohio State University. He is a Chartered Financial Analyst (CFA) and Chartered Alternative Investment Analyst (CAIA) charter holder.

RECOMMENDATION TO HIRE CALLAN LLC TO CONDUCT AN ASSET-LIABILITY STUDY

WHEREAS, the Government Finance Officers Association considers it a best practice that retirement systems periodically conduct asset-liability studies;

WHEREAS, a Request For Proposal was issued and four consulting firms responded by October 20, 2017; and

WHEREAS, in accordance with the Sewerage & Water Board's Professional Services Procurement Policy, a Proposal Selection Committee was formed and evaluated responses from Aon Hewitt Investment Consulting, Inc., Callan LLC, RVK, Inc., and Verus Advisory, Inc.; and

WHEREAS, the Proposal Selection Committee scored these responses in accordance to the criteria and weights outlined in the Request For Proposal in an open meeting on November 27, 2017 and this scoring resulted in Callan LLC receiving the highest score; and

WHEREAS, the Chief Investment Officer presented the Pension Committee at its December 18, 2017 meeting a recommendation outlining the search process and result; and

WHEREAS, the Pension Committee recommends the selection of Callan LLC to conduct an asset-liability study.

NOW, THEREFORE, BE IT RESOLVED by Board of Trustees of the Employees' Retirement System of Sewerage and Water Board of New Orleans that the Chief Investment Officer be authorized to negotiate and enter into an agreement with Callan LLC to conduct an asset-liability study subject to the contract reviews outlined in the Professional Services Procurement Policy.

This resolution shall be incorporated into the By-Laws of the Sewerage and Water Board of New Orleans.

I, _____, Executive Director,
Employees' Retirement System of the Sewerage and Water Board of New Orleans,
do hereby

certify that the above and foregoing is a true and
correct copy of a Resolution adopted at the Meeting of the
Board of Trustees of the Employees' Retirement System
of Sewerage and Water Board of New Orleans, duly called and held,
according to law, on [December 20, 2017](#).

_____, EXECUTIVE DIRECTOR
EMPLOYEES' RETIREMENT SYSTEM OF THE SEWERAGE AND WATER BOARD OF NEW ORLEANS



October 20, 2017

Sewerage and Water Board of New Orleans

Request for Proposal: Asset-Liability Study
Consulting Services

Prepared by **Callan LLC**

300 Galleria Parkway, Suite 950

Atlanta, GA 30339

www.callan.com

Cody Chapman, CFA, CAIA

Vice President

Weston Lewis, CFA, CAIA

Senior Vice President



Callan
300 Galleria Parkway
Suite 950
Atlanta, GA 30339

Main 770.618.2140
Fax 770.618.2141

www.callan.com

October 20, 2017

Willie M. Mingo Jr.
Director of Procurement
Sewerage and Water Board of New Orleans
625 St. Joseph Street Room 133
New Orleans, Louisiana 70165

Dear Mr. Mingo,

On behalf of Callan Associates, thank you for the opportunity to submit our response to the Sewerage and Water Board of New Orleans Request for Proposal for asset-liability study consulting services for the Employees' Retirement System of the Sewerage and Water Board of New Orleans. As a firm whose primary business is investment consulting, our success relies on our ability to deliver excellent products and services to our clients.

Over the years, our clients have benefited from many qualities which differentiate our firm from its competition:

- *A Singular Focus on Consulting* - Complete objectivity is central to our client service philosophy. We do not engage in any business that might distract our attention or compromise our advice and guidance to the Board.
- *Leadership in Global Investment Consulting* - Callan Associates is one of the oldest firms in investment consulting, bringing 44 years of investment expertise to each client relationship. While many firms have followed our lead in providing consulting services, there is one asset they cannot duplicate – our people. Callan consultants are widely known, highly experienced, innovative investment professionals. Many of our practical, analytical “firsts” have become standards for the industry.
- *A Dynamic Team Approach to Client Service* - A carefully selected team of Callan consultants work with each client to create a true investment partnership. To ensure that S&WB receives the full, collective wisdom of our consultants and the full benefit of Callan's unparalleled resources, oversight committees comprised of senior consultants carefully review all projects.
- *Valuable, Timely Education and Research* - Callan is the leading educator of institutional investors. Through our timely educational programs and meticulous, practical research, we help clients stay abreast of the latest investment trends. And, to ensure the quality of the knowledge we share, our associates' continuing education is a priority for us as well.

Callan

- *100% Employee-owned* – Now in our 44th year, Callan has remained an employee-owned company throughout our history. We have a financially strong firm whose ownership structure aligns our interests with our client's interests, especially during the current challenging market environment.

We can confirm that Callan meets all of the minimum requirements laid out in Section V and are willing and able to provide all of the services described in Section II "Description of the Work to be Performed" of this RFP.

We do not believe there to be any conflicts of interest that would arise out of us serving this relationship. We have not identified any relationships that would impair our ability to perform if awarded the contract. We do not utilize subcontractors.

We appreciate your time and consideration in reviewing our capabilities. If you have any questions, please contact me at (770) 618-2147 or chapman@callan.com.

Kind regards,



Cody Chapman, CFA, CAIA
Vice President



Weston Lewis, CFA, CAIA
Senior Vice President

Enclosure(s)

Table of Contents

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Representations and Warranties

- i. Firm warrants that it meets or will meet before the award of the Investment Consultant Services Agreement ("Agreement"), the bonding requirement provided by the Employment Retirement Income Security Act of 1974 (ERISA) or that it carries at least an equivalent fidelity bond that will be applicable to proposer's actions under the Agreement (unless exempt and explanation of exemption is attached).

Include in Section V of our response is our Certificate of Liability Insurance which includes information on our fidelity bond.

- ii. Firm warrants that it maintains errors and omissions insurance as well as fiduciary liability insurance providing a prudent amount of coverage for negligent acts or omissions and that such coverage will be applicable to proposer's action under Agreement.

Include in Section V of our response is our Certificate of Liability Insurance which includes information on our errors and omissions and fiduciary liability insurance.

- iii. Firm warrants that it will not delegate its fiduciary responsibilities assumed under the Agreement.
- iv. Firm warrants that it has completed, obtained and performed all registrations, filings, approvals, authorizations, consents or examinations required by a government or governmental authority for acts contemplated by the Agreement.
- v. Firm warrants that it meets all of the minimum qualifications applicable to the firm under the RFP as follows:
 1. Firm must have at least \$50 billion (fifty billion dollars) in Assets Under Advisement (AUA). Please state your most recently published AUA.

Our Assets under Advisement as of 9/30/2017 is \$ \$2.2 trillion.

2. Firm must have completed at least 5 (five) asset-liability studies for a (corporate, public, or Taft-Hartley) pension fund. If selected, S&WB will ask for contact information to verify the accuracy of the response. Please complete the table below:

Date Completed	Pension Name	Type	Asset Size (millions)
09/2017	Denver Water	Public	\$303
11/2017	American Water Works Company	Corporate	\$1,527
09/2017	Utah Retirement System	Public	\$29,700
12/2016	Entergy Corporation	Corporate	\$5,641
10/2015	Harris Corporation	Corporate	\$4,664

- 3. Firm must have at least 5 (five) years of experience in conducting assetliability studies in-house for (corporate, public, or Taft-Hartley) pensions. What year did your firm first conduct an asset-liability study? (Firms with over 5 years of asset-liability study experience may provide an approximate date).**

Callan has been conducting asset/liability studies since the inception of our firm in 1973.

- 4. Individual leading the asset-liability study efforts at your firm must have:**
 - a. at least 10 (ten) years of investment/actuarial experience;**
 - b. at least 5 (five) years of asset-liability study experience; and**
 - c. at least 3 (three) years of tenure at your firm.**

We can confirm that whichever individual(s) from our Capital Markets Research Group responsible for conducting the asset-liability study for S&WB will meet the above qualifications.

- 5. Your firm must be able to provide customized scenarios similar to those described in section II.B.1.a.iv.(b) and section II.B.1.a.iv.(c).**

(Continued from previous page)

Callan LLC
Name of Firm

10/19/17
Date


Signature

Vice President
Title

FIRM NAME: Callan LLC
300 Galleria Parkway
ADDRESS: Suite 950
Atlanta, GA 30339

TELEPHONE #: 770 618 2140

E-MAIL ADDRESS: Chapman@callan.com

CLIENT CONTACT: Cody Chapman

SIGNED: 

PRINT NAME: Cody Chapman

TITLE: Vice President

DATE: 10/19/17

A. Organizational Background:

1. Give a brief history of your organization including the following:

a. Year of organization;

Callan was founded as an employee-owned investment consulting firm in 1973.

b. Year of initiation of investment consulting business;

We have been providing investment consulting services to institutional clients since our inception in 1973.

c. Development of significant business lines;

In addition to our core fund sponsor consulting and investment research areas, our business includes dedicated teams that consult with investment managers (Institutional Consulting Group, since 1988) as well as boutique consulting firms and independent financial advisors (Independent Adviser Group, since 1991). These services include providing research, education, performance measurement, data, and analytical tools. In 2006, we launched our discretionary consulting and asset management group to address the need for customized OCIO services (Trust Advisory Group).

d. Nature of firm's ownership;

Callan LLC is a limited liability company incorporated in the State of California, and is 100% privately owned by 90 professionals.

e. Nature of relationships with affiliated companies or joint ventures;

Callan does not have any parent company, affiliated companies, strategic partnerships or joint ventures.

f. Organizational issues/changes within the last three years.

Effective January 1, 2017, Inga Sweet became Chief Operating Officer of the firm, a role previously held by Ann DeLuce, who retains her role as Chief Compliance Officer. Also, effective September 2017, President and Director of Research, Greg Allen, assumed the title of CEO and President as well as Chief Research Officer. Current Chairman and CEO, Ron Peyton, became Executive Chairman and current Executive Vice President, Butch Cliff assumed the title of Director of Research. These changes formalized our long-standing leadership succession plan.

2. Describe the current structure of your organization. Provide an organizational chart(s) showing the relationships and authority within the consultant services unit and within the organization.

While general consulting is our primary business, Callan does take an integrated approach to consulting. This approach allows us to best serve the needs of all participants along the institutional investment spectrum. We have chosen this structure because we feel it results in the highest level of consultation possible. Our model

creates a diversified revenue stream that allows for consistent reinvestment in the people, systems and tools required to meet the needs of today's institutional investors. The net benefit to our clients is a richer data set, a more robust suite of analytical tools, and a deeper, stronger consulting team to help them make smarter and more confident investment decisions. These are our four lines of business:

Fund Sponsor Consulting: Our fund sponsor clients are among the most highly regarded organizations in the U.S., overseeing more than \$2.2 trillion in combined assets. Our investment consulting services address the totality of a fund sponsor's needs. Our consulting approach is custom and holistic. Fund Sponsor Consulting serves sponsors of defined benefit plans, defined contribution plans, endowments, foundations, insurance, hospitals, healthcare systems, and nuclear decommissioning trusts as well as other large institutional asset pools. Supported by a deep team of research professionals, this division is organized to deliver customized solutions that meet the needs of even the most sophisticated institutional investment programs. Services include strategic planning, plan implementation, monitoring and evaluation, and continuing education. The services to the S&WB Plan would be provided by this division.

Independent Adviser Group (IAG): IAG delivers consulting resources and services to a select group of independent consulting firms and financial intermediaries. We give IAG clients the tools to provide fiduciaries, trustees, and high-net-worth individuals with objective investment solutions that were previously available to only the largest of institutions. These solutions include strategic planning, plan implementation, monitoring and evaluation, and continuing education.

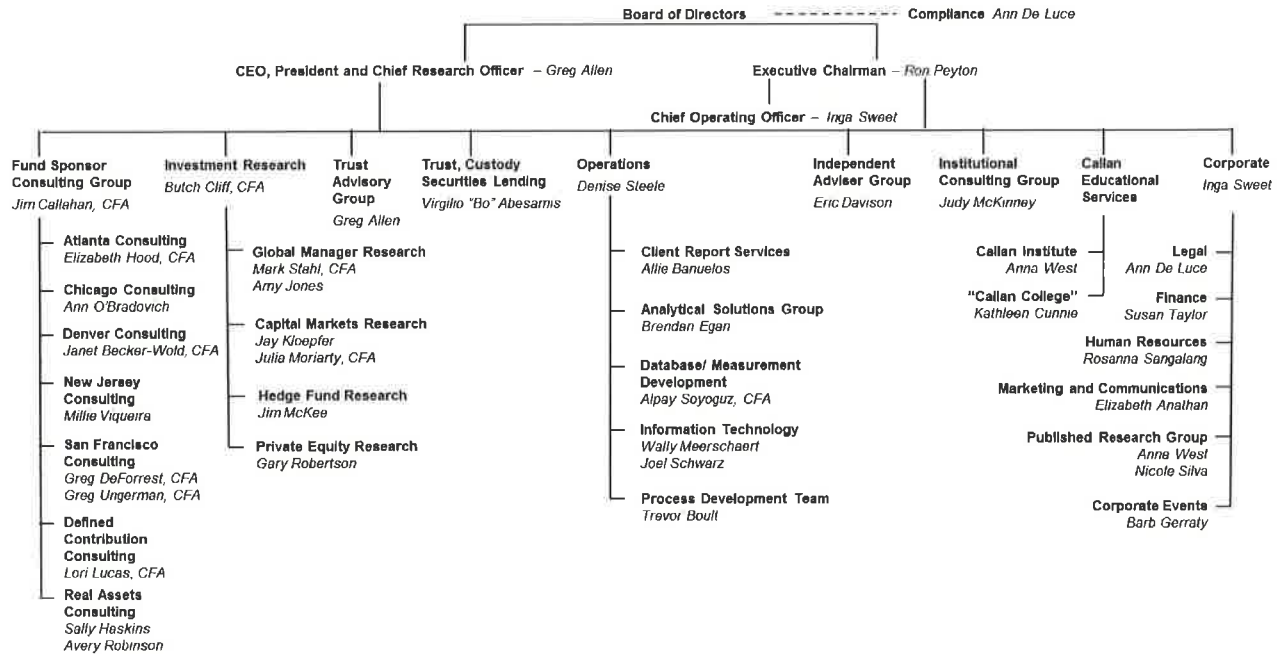
Institutional Consulting Group (ICG): ICG provides investment manager clients with research, education, performance measurement, and database and analytical tools that help them better serve the needs of institutional investors. Our ICG team lends critical insight to the investment management and product issues confronting many clients today.

Trust Advisory Group (TAG): TAG is our asset management and implemented consulting division. It specializes in the design, implementation, and ongoing management of multi-manager and discretionary portfolios for institutional investors. TAG applies a process-driven approach to building efficient, low-cost portfolios with clearly articulated goals and objectives. It serves as the sponsor and advisor to multi-manager small cap and micro cap value funds, as well as the non-discretionary advisor to a series of target date funds known as Callan GlidePath® Funds. TAG also serves as the discretionary advisor for several outsourced CIO clients.

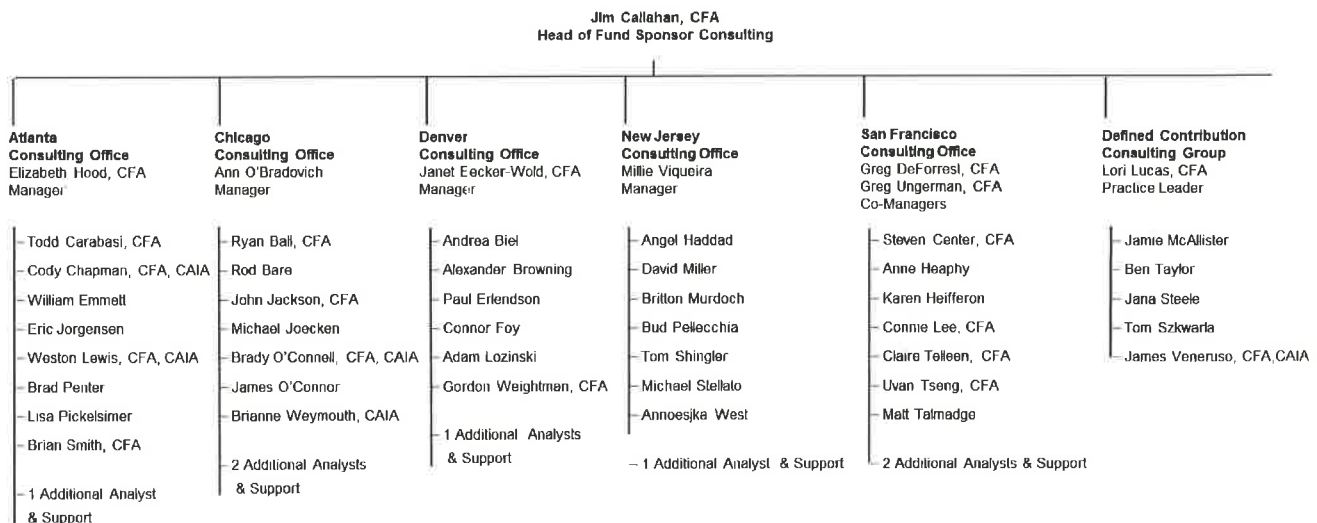
A chart of our organization is included on the following page.

SEWERAGE AND WATER BOARD OF NEW ORLEANS

October 20, 2017



Below is a chart of our Fund Sponsor Consulting group.



3. List the percentage of total firm revenues derived from investment consulting services for the five most recent fiscal years and projection for the current year.

Fund Sponsor Consulting Revenue as % of Total					
2012	2013	2014	2015	2016	2017 Projection
69%	68%	67%	64%	65%	65%

4. Complete the following table:

Client Profile							
	Public Pensions	Corporate Pensions	Taft Hartley Plans	Endowments & Foundations	Family Offices	Other	Total
Assets (\$millions)	\$1,420,907	\$184,797	\$7,835	\$32,672	\$13,821	\$553,391	\$2,213,423
# of Clients	65	57	8	49	8	217	404

B. Describe your firm's resources for conducting asset-liability studies.

Our Capital Markets Research Group is responsible for conducting all asset-liability studies. This seven-person team comprises seasoned professionals with backgrounds in finance, accounting, investments, actuarial science, economics and statistics. The CMR team averages 26 years of industry experience, with more than 15 years at Callan. Each group member is an expert at articulating complicated analysis in very practical terms.

We also subject every study to formal oversight review by our Client Policy Review Committee. This committee, comprised of senior level consultants and specialists, reviews all strategic planning studies. In addition to providing necessary oversight, the Committee brings valuable experience to bear on each study. Weston Lewis, one of the proposed team members for our relationship with S&WB, is a member of our Client Policy Review Committee.

1. List the members of your asset-liability team and provide brief biographies, including education, professional designations, professional experience, and tenure with your organization.

Biographies for our Capital Markets Research Group are listed below.

Jay V. Kloepfer is an Executive Vice President and the Director of Capital Markets Research. The Capital Markets Research group helps Callan's fund sponsor clients with their strategic planning, conducting asset allocation and asset-liability studies, developing optimal investment manager structures, evaluating defined contribution plan investment lineups and providing custom research on a variety of investment topics.

Jay is the author of the "Callan Periodic Table of Investment Returns," which he created in 1999. He is a member of Callan's Management and Institute Advisory Committees and is a shareholder of the firm.

Prior to joining Callan, Jay was a Senior Economist and the Western Regional Manager for Standard & Poor's DRI. Jay earned an MA in Economics from Stanford and a BS with honors in Economics from the University of Oregon.

Jason L. Ellement, FSA, CFA, MAAA, is a Senior Vice President and a consultant in the Capital Markets Research group. He is responsible for assisting plan sponsor clients with strategic planning, conducting asset-liability studies, developing optimal investment manager structures, and providing custom research on a variety of investment topics. Jason is a regular instructor at the "Callan College" and a shareholder of the firm.

Jason joined Callan in 2002 and has over 23 years of experience in the pensions and investments industry. Prior to joining Callan, Jason practiced as a pension actuary for a prominent public retirement system and an international consulting firm.

Jason is a Fellow of the Society of Actuaries and a member of the Academy of Actuaries. He earned the right to use the Chartered Financial Analyst designation and is a member of the CFA Society of San Francisco. Jason graduated with First Class Honors from the University of Manitoba, Canada with a BSc in Actuarial Science & Statistics.

Karen M. Harris, ASA, CFA, is a Senior Vice President and a consultant in the Capital Markets Research group. Karen joined Callan in May 2000. She is responsible for assisting clients with their strategic investment planning, conducting asset allocation studies, developing optimal investment manager structures, and providing custom research on a variety of investment topics. She consults to a wide range of asset pools, including defined benefit plans – corporate and public, endowments, hospitals, and insurance companies in areas such as workers comp, health care and casualty. Karen is also an instructor at the "Callan College" and has spoken frequently at the Callan Investments Institute. She is a shareholder of the firm.

Prior to joining the firm, she spent eight years as a consultant with Watson Wyatt Worldwide, an employee benefits consulting firm. Her duties included consulting to plan sponsor clients on pension plan design, funding, accounting, regulatory, and investment issues. She also spent four years in Jakarta assisting the Indonesian government to develop and implement a private employer pension law.

Karen has earned the designation of Associate of the Society of Actuaries (ASA) and earned the right to use the Chartered Financial Analyst designation. Karen has a Bachelor of Mathematics from the University of Waterloo in Ontario, Canada.

Julia A. Moriarty, CFA, is a Senior Vice President and Co-Manager of Callan's Capital Markets Research group. The Capital Markets group helps Callan's fund sponsor clients with their strategic planning, conducting asset-liability studies, developing optimal investment manager structures, and providing custom research on a variety of investment topics. The group consults to a wide range of clients, including defined benefit and defined contribution employee-benefit plans (corporate, public, and Taft-Hartley), endowments, foundations, insurance, hospitals, health-care systems, and nuclear decommissioning trusts. Julia also conducts target date and diversified real return manager research and publishes Callan's annual Nuclear Decommissioning Funding Study. Julia is a shareholder of the firm and is a member of Callan's Management Committee.

Julia earned an MBA from the University of California at Berkeley's Haas School of Business and a BS in Finance from California Polytechnic State University at San Luis Obispo. She earned the right to use the Chartered Financial Analyst designation and is a member of the CFA Society of San Francisco and CFA Institute.

John Pirone, CFA, FRM, CAIA, is a Senior Vice President and a consultant in the Capital Markets Research group. He is responsible for assisting clients with their strategic investment planning, conducting asset allocation studies, developing optimal investment manager structures, and providing custom research on a variety of investment topics. John is a member of Callan's Alternatives Review Committee.

Prior to joining Callan in 2015, John was a Managing Director at BlackRock in the Client Solutions Group, advising major institutional clients throughout the Americas on total portfolio strategy issues.

From 1997 to 2009, John was a Client Advisory Strategist at Barclays Global Investors. Previously, he was a Fixed Income Analyst at Gifford Fong Associates.

John is co-author of "Optimizing Manager Structure and Budgeting Manager Risk" which received the Bernstein Fabozzi/Jacobs Levy award from The Journal of Portfolio Management.

John earned a MSc in Finance from the London Business School, a MA in Economics from the University of California at Santa Barbara and a BA in Biology from Washington University in St. Louis. He earned the right to use the Chartered Financial Analyst, Financial Risk Manager and Chartered Alternative Investment Analyst designations and is a member of the CFA Society of San Francisco and CFA Institute.

Eugene L. Podkaminer, CFA, is a Senior Vice President and a consultant in the Capital Markets Research group. Eugene is responsible for assisting clients with their strategic investment planning, conducting asset allocation studies, developing optimal investment manager structures, and providing custom research on a variety of investment topics. Eugene is a member of Callan's Institute Advisory Committee and is a shareholder of the firm.

Prior to joining Callan in 2010 Eugene spent nearly a decade with Barclays Global Investors. As a Senior Strategist in the Client Advisory Group he advised some of the world's largest and most sophisticated pension plans, non-profits, and sovereign wealth funds in the areas of strategic asset allocation, liability driven investing, manager structure optimization, and risk budgeting. As Chief Strategist of Barclays' CIO-outsourcing platform Eugene executed CIO-level functions for corporate pension plans and endowments. Eugene was also a Senior Investment Consultant with Alan Biller and Associates.

Eugene received a BA in Economics from the University of San Francisco and an MBA from Yale University. He earned the right to use the Chartered Financial Analyst designation and is a member of the CFA Society of San Francisco and CFA Institute, where he consults on curriculum development. He is a frequent speaker on investment related topics and has been featured in numerous publications; in 2014 he was named CIO Magazine's "Consultant of the Year". His paper on risk premia investing, "Risk Factors as Building Blocks for Portfolio Diversification: The Chemistry of Asset Allocation," was published by the CFA Institute and his

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article on smart beta, "The Education of Beta: Can Alternative Indices Make Your Portfolio Smarter," was featured in the Journal of Investing, and "Smart Beta is the Gateway Drug to Risk Factor Investing" appears in the Journal of Portfolio Management.

James W. Van Heuit is a Senior Vice President and a consultant in the Capital Markets Research group. He is responsible for assisting clients with their strategic investment planning, conducting asset allocation studies, developing optimal investment manager structures, and providing custom research on a variety of investment topics. Jim speaks regularly at both the "Callan College" and the Callan Institute. Jim is a shareholder of the firm.

Jim was originally with Callan in the Capital Markets Research group from 1989 to 1997 and returned in 2001. From 2001 through 2004, he was a general consultant in the San Francisco office. From 1997 to 2001 Jim was with consulting firms Watson Wyatt and R.V. Kuhns.

Prior to joining Callan in 1989, Jim participated in the Ph.D. program in Economics at the University of Michigan where he studied microeconomics and international economics. Jim's previous experience includes four years as an independent consulting engineer and two years as a design engineer for Ford Aerospace and Communications Corp.

He earned an MA in Economics from the University of Michigan and received a BA in Economics from California State University at Sacramento. He also earned a BS in Mechanical/Aeronautical Engineering from the University of California.

In addition to our Capital Markets Research Group listed above, Cody Chapman and Weston Lewis from our Fund Sponsor Consulting group will serve as liaisons to the relationship with S&WB.

2. Please translate the team biographies into the table below:

Asset-Liability Team Summary							
Name	Title	Bachelor's Degree	Master's Degree	Advanced Degree	Professional Designation	Professional Experience	Firm Tenure
Jay Kloepfer	Executive Vice President	BS	MA	-	-	30 yrs	19 yrs
Jason Ellement	Senior Vice President	BSc	-	-	FSA, CFA, MAAA	23 yrs	15 yrs
Karen Harris	Senior Vice President	BS	-	-	ASA, CFA	29 yrs	17 yrs
Julia Moriarty	Senior Vice President	BS	MBA	-	CFA	27 yrs	27 yrs
John Pirone	Senior Vice President	BA	MA, MSc	-	CFA, FRM, CAIA	21 yrs	2 yrs
Eugene Podkaminer	Senior Vice President	BA	MBA	-	CFA	18 yrs	7 yrs
Jim Van Heuit	Senior Vice President	BA, BS	MA	-	-	36 yrs	24 yrs

C. Describe your experience performing asset-liability studies for pension plans in general and specifically:

Callan has been conducting asset-liability studies since the inception of our firm. Callan's proprietary asset allocation/liability modeling capabilities originated in the late 1970s and have been continually enhanced. We have worked with a variety of client types through a myriad of market environments. Each of these diverse client experiences has enriched our knowledge, and after four-plus decades, it is safe to say there is little we haven't seen. Our Capital Markets Research team, the group responsible for conducting asset-liability studies, averages 26 years of industry experience and more than 15 years at Callan.

1. How many studies have you performed on average per year?

Since 2008, we have averaged 21 asset-liability studies completed each year.

2. How many total studies have you cumulatively performed?

Since 2008, we have completed 196 asset-liability studies.

3. How many studies have been for pensions smaller than \$500 million in assets?

We have completed a number of asset-liability studies for mid-sized pension plans. Since 12/31/2013, we have completed 23 asset-liability studies for pension plans smaller than \$500 million in assets.

4. What is your experience in performing asset-liability studies for "closed [to new entrants]" and "frozen" pension plans?

Callan has worked with many pension plans that are closed to new participants and in several instances accruals to existing participants were frozen, imposing a finite maturity on the liabilities. In all cases, the plans retained fixed rates to discount the liabilities, which limits the interest rate sensitivity of the liabilities and changes the focus of a liability driven investing solution from one of matching asset interest rate sensitivity to the liabilities to a strategy of limiting the volatility of the asset portfolio around a target return. As a result, we typically focus on mitigating portfolio risk through diversification and a focus on risk aware strategies, both within asset classes such as equity and fixed income, and with the addition of diversifying strategies to dampen the volatility from raw market beta, including hedge funds, multi-asset class absolute return strategies, and where appropriate, private market investments, including real assets. Unless the plan is willing to reduce the discount rate as the liabilities mature, taking exposure to growth assets off the table and therefore reducing expected return can be problematic for many of these public fund sponsors.

5. Please provide three references from clients (past or present) for whom you conducted an asset-liability study. Include contact name, contact's title, organization's name, phone number, and e-mail address.

SEWERAGE AND WATER BOARD OF NEW ORLEANS

October 20, 2017

References				
Contact Name	Title	Organization	Phone	Email
Johnna Morris	Director of Finance	Fort Pierce Retirement & Benefits System	(772) 460-2200	jmorris@city-ftpierce.com
Paul Wright	Interim Clerk of the Pension, Employee Services Manager	DeKalb County Georgia	(404) 371-2296	pcwright@dekalbcountyga.gov
Paula Henry	Financial Analyst	Entergy Corporation	(504) 576-7428	phenry@entergy.com

D. Describe your overall asset-liability study process.

Our asset-liability process is outlined in the questions below.

1. Describe your process.

At the outset of our process we address the following questions:

- What are the client's specific investment objectives?
- What are the client's long-term assumptions of return, risk, and correlation for broad asset classes?
- What is the client's risk tolerance?
- What practical implementation issues are at hand? (These might include size of the asset pool; the investment sophistication of the staff and committee; the client's investment philosophy, preferences, and biases; liquidity needs, legislative or regulatory issues; and custodial capabilities.)

Once these inputs are articulated, we embark with the client on a five-step journey as we collaborate on their asset allocation strategy:

Step One:

We establish the capital market expectations for each broad asset class under consideration. All of the projections are for five- and ten-year time horizons. We use this period because it is long enough to cover most market cycles. Callan integrates information on past capital market performance, key economic indicators, and the market insights of Callan professionals to develop projections that are sound, defensible, and consistent with financial theory for each asset class. We review these with the client to ensure comfort with the methodology and resulting assumptions. The end product of Step One is a description of the range of investment results that might realistically be expected to occur, from the best to the worst case.

Callan's capital market projections for the 2017 to 2026 timeframe are shown in the following table.

SEWERAGE AND WATER BOARD OF NEW ORLEANS

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Asset Class	Index	PROJECTED RETURN			PROJECTED RISK	
		1-Year Arithmetic	10-Year Geometric*	Real	Standard Deviation	Projected Yield
Equities						
Broad Domestic Equity	Russell 3000	8.30%	6.85%	4.60%	18.25%	2.00%
Large Cap	S&P 500	8.05%	6.75%	4.50%	17.40%	2.10%
Small/Mid Cap	Russell 2500	9.30%	7.00%	4.75%	22.60%	1.55%
Global ex-US Equity	MSCI ACWI ex USA	8.95%	7.00%	4.75%	21.00%	3.10%
International Equity	MSCI World ex USA	8.45%	6.75%	4.50%	19.70%	3.25%
Emerging Markets Equity	MSCI Emerging Markets	10.50%	7.00%	4.75%	27.45%	2.65%
Fixed Income						
Short Duration	Bloomberg Barclays 1-3 Yr G/C	2.60%	2.60%	0.35%	2.10%	2.85%
Domestic Fixed	Bloomberg Barclays Aggregate	3.05%	3.00%	0.75%	3.75%	3.50%
Long Duration	Bloomberg Barclays Long G/C	3.75%	3.20%	0.95%	10.90%	4.50%
TIPS	Bloomberg Barclays TIPS	3.10%	3.00%	0.75%	5.25%	3.35%
High Yield	Bloomberg Barclays High Yield	5.20%	4.75%	2.50%	10.35%	7.75%
Non-US Fixed	Bloomberg Barclays Gbl Agg xUSD	1.80%	1.40%	-0.85%	9.20%	2.50%
Emerging Market Debt	EMBI Global Diversified	4.85%	4.50%	2.25%	9.60%	5.75%
Other						
Real Estate	Callan Real Estate Database	6.90%	5.75%	3.50%	16.35%	4.75%
Private Equity	TR Post Venture Capital	12.45%	7.35%	5.10%	32.90%	0.00%
Hedge Funds	Callan Hedge FoF Database	5.35%	5.05%	2.80%	9.15%	2.25%
Commodities	Bloomberg Commodity	4.25%	2.65%	0.40%	18.30%	2.25%
Cash Equivalents	90-Day T-Bill	2.25%	2.25%	0.00%	0.90%	2.25%
Inflation	CPI-U		2.25%		1.50%	

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

Step Two:

Capital market assumptions are used to develop a range of "efficient" portfolio asset mixes. The selected asset classes are combined into Callan's optimization process to determine the most efficient portfolios. Policy and/or legal restrictions are incorporated into the analysis.

For this step, our Capital Markets Research group uses proprietary models for fixed income, equities, and the projection of economic variables. The group is able to leverage Callan's large stable of specialists for knowledge on asset classes that are difficult to model like real assets, hedge funds, and private equity. The end value to the client is a series of credible projections that feature enduring solutions and are free of investment fads.

Step Three:

We conduct a comprehensive analysis of the plan's liabilities and the future financial status of the program. We develop an actuarial model of the plan today, as well as projections of its liabilities five and ten years in the future.

A thorough understanding of liabilities is a key component in determining an appropriate asset allocation strategy. This strategy can be tailored to reflect the nature of the liabilities and their sensitivity to capital market uncertainty. Factors to consider include the amount and timing of future cash flows; the methodology for calculating liabilities; and the expected (and unexpected) growth rate of the liabilities and cash flows.

This liability model is then integrated with the asset allocation model in a simulation exercise that examines the fund's potential financial condition five and ten years in the future over a range of economic scenarios.

Step Four:

Using a liability-driven approach, we simulate thousands of possible future capital market outcomes and observe the interaction of assets and liabilities across all potential scenarios.

By simulating thousands of potential capital market outcomes and observing the interaction of assets and liabilities across all of these scenarios, we can begin to understand the effect that each asset mix might have on a fund's future and the sponsor entity.

Step Five:

Every strategic planning project undertaken for a Callan client is a collective effort involving the client, general consultant, a team of specialists, and ultimately a peer review committee. We subject every study to formal oversight review by our Client Policy Review Committee (CPRC). In addition to providing necessary oversight, the CPRC brings valuable experience to bear on each study lending a qualitative overlay to the quantitative approach enabling our clients to benefit from the collective wisdom of the firm.

The CPRC, which is comprised of 13 senior consultants, evaluates all reports before they are submitted to the client. This environment of complete transparency requires a thoroughly documented process that is free of unsupported personal opinions and biases. CPRC calls are open to all Callan employees via conference call enabling them to attend and ask questions.

The Final Challenge:

Once all of the aforementioned has been accomplished, the final challenge is to distill these inputs into meaningful information that can be used to support an asset allocation decision. Working together, we will ultimately design a document that most directly addresses our clients' specific concerns. The focus of the document will be to distill the large amount of data from this complex process into meaningful, defensible policy recommendations. The result will be a blueprint for fund management at both the broad asset class level, as well as the individual manager level.

It is in this final phase that Callan is particularly distinct. Our team is the greatest resource that we can bring to bear for our clients. While other firms may similarly provide assistance with structure studies and investment policies, our group is singular in its ability to absorb these inputs and collaborate with the client to make sound judgments on the construction of an investment strategy that stands the test of time. This strategy is supported by a process that prevents emotion, political cycles, and market volatility from overwhelming financial decisions – all while being customized to the client's specific objectives.

2. What information/time do you need from the client to complete the study?

We will work closely with your actuary to accurately portray the present actuarial valuation model and to project expected liability levels. It has been our experience that actuaries have this "valuation data set" ready to go and that providing this data is neither a particular burden to the actuary nor a large cost to the sponsor.

Typically a study takes between 10 to 12 weeks from when we receive the liability data, provided that it is received in a timely manner.

3. What do you consider to be the advantages and limitations of your process?

How is Callan's method for conducting asset-liability studies different from our competitors? Simply put, the answer is: people, philosophy, and process.

People

Our asset-liability modeling is conducted by our dedicated Capital Markets Research (CMR) Group. This team averages 26 years of industry experience, and more than 15 years at Callan. Each group member is an expert at articulating complicated analysis in very practical terms. This allows our clients to make informed decisions with confidence, while arriving at a plan that is durable, timeless, and can endure changes to the board and staff.

CMR's primary focus is on strategic planning, which incorporates capital market expectations, asset allocation, and manager structure. This group has a long history working with public funds – assessing their objectives and simulating their performance within the context of countless market environments.

CMR's goal for each client engagement is to arrive at the creation and adoption of a strategic, long-term asset allocation that will meet the future funding needs of the plan without creating distress on the contribution side.

We provide our clients access to knowledgeable, experienced investment professional to help them with each phase of the asset-liability process. From our perspective, this leads to an intimate awareness of our clients' concerns and objectives.

Philosophy

Callan maintains a series of baseline investment philosophies that are fundamental to all of our consultation.

The following beliefs are core to the advice we provide to public funds:

- *Focus on the ultimate purpose of the assets:* Every institutional investor faces a different set of circumstances. Developing a clear understanding of the goals and objectives for the asset pool, informed by the obligations or associated liability structure, is the starting point for developing an appropriate asset allocation
- *Invest for the long term:* We recommend a planning cycle of five to ten years and develop capital market expectations that look out over a ten year time horizon.
- *Incorporate diversification:* Diversification is a potent tool in controlling risk and curbing the effects of cyclicity.
- *Rely on proven investments:* Callan's strong conviction is that a reliance on proven investments is essential to building portfolios and reaching long-term goals.

Process

We believe the development of an appropriate asset allocation policy for a public fund requires the integration of a number of factors. We address the following questions at the outset of our process:

- What are the client's specific investment objectives?
- What are the client's long-term assumptions of return, risk, and correlation for broad asset classes?
- What is the client's risk tolerance?
- What practical implementation issues are at hand? (These might include size of the asset pool; the investment sophistication of the staff and committee; the client's investment philosophy, preferences, and biases; liquidity needs, legislative or regulatory issues; and custodial capabilities.)

In terms of areas of improvement, our customized approach to each client requires greater resources and therefore a more significant time commitment to evaluate each client's specific circumstances and develop appropriate recommendations. This process takes time, which could be perceived as a weakness by clients looking for a quick answer. However, we strive to respond to our client's requests with urgency.

4. How has your process evolved over the years?

After 2008, we observed that our range of simulated scenarios encapsulated a 2008 event but at the 99.5th percentile. In other words, 2008 was a very bad year yet very unlikely to repeat anytime soon. Prior to 2008 we defined a worst case scenario as a 95th percentile event. While we believe that a repeat of the 2008 credit crisis or something similar is highly unlikely, we have begun to analyze and communicate results that are deeper in the tail such as a 97.5th percentile outcome.

Finally, we have also begun supplementing our simulation analysis with scenario testing to "shock-test" the portfolio against possible economic climates. The pre-defined scenarios typically represent low probability events – very high inflationary environment, a Japan-esque deflationary spiral, and a prolonged period of stagflation – that fall somewhere in the tail of the simulated distribution of results.

5. What are the most recent enhancements to your model and/or process?

While the fundamental methodology used to develop strategic policy recommendations (which employs mean-variance optimization and Monte Carlo simulation) has not changed, recent market events have caused us to place greater emphasis on examining the reaction of different asset allocation policies to specific extreme market outcomes. In particular we have placed an increasing emphasis on examining "flight-to-quality" outcomes (where correlations of financial assets increase dramatically), high and rapidly rising inflation outcomes, and high or rapidly rising interest rate outcomes. This approach allows clients to evaluate the relative costs and benefits of building complete or partial hedges into their policy portfolios to protect against specific market outcomes that may adversely affect their funded status or ultimately their viability.

In addition to examining outcome-specific hedging strategies, we are increasingly being asked to evaluate dynamic asset allocation approaches where the level of risk in the policy portfolio varies through time in reaction to achieving specific funding targets based on the liabilities. There is an increasing appetite to

consider policies that explicitly de-risk the portfolio as the funded status improves. Our Monte Carlo asset-liability simulation framework is particularly well-suited to evaluating these policies across the full range of potential capital market outcomes.

E. Describe the timeline to complete a typical asset-liability study.

Below is the typical timeline of our asset-liability process. As mentioned previously, this process typically takes between 10 to 12 weeks to complete after receiving the data.

1. Request data from actuary (Callan, with assistance from client)
2. Establish risk and return assumptions for capital markets and determine which asset classes will be included in modeling (Callan and client)
3. Initiate discussion of the end game and investment goals for plan (Callan and client)
4. Begin modeling optimal asset allocation mixes (Callan)
5. Receive data from actuary and begin loading actuarial data into software (Callan with assistance from actuary)
6. Build actuarial liability model (Callan)
7. Integrate asset mix projections with actuarial model of the Plan (Callan)
8. Present initial findings of asset-liability study (Callan and client)
9. Rewrite investment policy statement to include new targets and rebalancing ranges (Callan)
10. Implement changes to investment policy (Client)

Callan will be in contact with the client and actuary throughout the entire process, and will adjust the timing of the process based on client needs/preferences.

1. What are the major factors that affect your ability to complete the process according to schedule?

We believe that receiving the data in a timely manner, the level of complexity, and the communication level with the actuary are critical factors to completing the study according to schedule. We have several points of contact with the actuary:

- **Data Request:** Callan will request data from the actuary as the basis of the liability portion of the asset-liability study.
- **Valuation Match:** Callan will work with the actuary so that the initial liabilities modeled in the Callan study will be consistent with the actuarial valuation. There will be no discrepancies between our report and the valuation to be resolved by staff or the Board.

-
- **Projection Verification:** Callan will work with the actuary to match the actuary's projections of future liabilities to the extent that they are available. When projections are not available from the actuary we will have the actuary review our projections. Again, any differences with the actuary will be resolved before the study is presented to the client.

Callan has professional actuaries on staff to review data, model liabilities, and consult with the client's actuary on a peer-to-peer basis. Using our own actuaries streamlines the communication process with the client's actuary saving the client time and money.

Callan has extensive experience interacting with actuaries in the course of completing asset-liability studies. We have worked with all of the actuarial consulting firms with a national presence as well as smaller boutique firms that focus on specific regions of the country.

Throughout the asset-liability study we will maintain effective, clear and professional communications with the actuary.

F. Describe your asset allocation models.

Our clients entrust us with the enormous responsibility of helping them meet their obligations. We honor this trust by employing a long-term focus, leaning on established investment theory, and relying on proven institutional-quality investments.

Five beliefs are core to the way we service institutional clients:

1. Focus on the ultimate purpose of the assets;
2. Invest for the long term by using a planning cycle of five to ten years;
3. Incorporate diversification across asset classes;
4. Strategically add value through active management;
5. Rely on institutional-quality investments;

Callan uses a combination of proprietary tools and external models to conduct our asset allocation client work. Managing these capabilities ourselves affords us levels of control and accuracy that are impossible to preserve when a company solely utilizes outsourced solutions. Our clients benefit because we are able to reinvest in our resources and proprietary evaluation tools, and do not have to compromise our advice based on the priorities of outside shareholders.

The theory and methodology behind our tools and models include:

Capital Market Projections

We develop long-term projections for capital market performance at the start of each year. These projections are for a 10-year time period, as this timeframe is long enough to cover most market cycles.

We integrate information on past capital market performance, key economic indicators, and the market insights of Callan professionals to develop projections that are sound and defensible.

Our projections consist of forecasted returns and standard deviations for each asset class and correlations between asset classes.

Mean-Variance Optimization

We use our capital market expectations to construct "optimal" strategic asset mixes i.e. asset mixes that generate the maximum expected return for a given level of risk. We use our proprietary optimization model to create the optimal asset mixes.

We look across the range of optimal asset mixes (the "efficient frontier") to identify mixes that could potentially improve upon the existing target asset allocation. The range we evaluate generally includes more conservative mixes which emphasize greater levels of capital preservation, a mix with the same expected return as the existing target if the existing target is not optimal, and more aggressive mixes which focus on higher levels of capital appreciation.

Monte Carlo Simulation

We use Monte Carlo simulation to evaluate the expected behavior of each of the efficient mixes in the context of the Fund's future assets and liabilities. By simulating thousands of possible future capital market outcomes and observing the interaction of assets and liabilities across all of these potential scenarios, we can begin to understand the effect that each asset mix might have on the future of the plan.

The plan's actuarial information is combined with the range of potential outcomes across the current and alternative asset mixes to evaluate the projected financial condition of the Fund over several time horizons (typically five, and ten years) and across various capital market scenarios.

1. Describe how you forecast capital market inputs for the asset allocation models.

Our capital market expectations are developed internally by Callan's Capital Markets Research group. Capital Markets Research characterizes the expected performance of the major asset classes over a five- to 10-year period, as this timeframe is long enough to cover most market cycles. These assumptions are reviewed on an ongoing basis and are updated annually.

Our projections consist of forecasted return, yield, and standard deviation (of returns) for each asset class, as well as projected correlations between asset class returns. We employ standard indices to represent each asset class.

There are four distinct steps we use to create our capital market projections:

1. **Develop medium and long-term economic outlooks for the U.S. and other major industrial economies.** This is a blend of science and art, as it incorporates objective and subjective inputs. When developing expectations about future performance of an asset class, it is important to understand the major factors influencing its variations, including inflation, interest rates, and growth and profitability. Callan's economic outlook is derived from a combination of in-house empirical models and consensus forecasts from the business economics industry.
2. **Examine historical relationships between key economic variables and asset class performance patterns.** This step includes the development and maintenance of empirical models which embody these relationships. A different group of empirical models is used for this step. These models have been specifically designed to link projections of important economic variables to the medium-term asset performance characteristics that will be used in the portfolio optimization procedures.

It may seem that we are constrained to thinking that history will repeat itself when using statistical models to characterize the past and forecast the future. By modeling underlying relationships in economic and financial markets, we are able to bring historical relationships between variables (independent of the situation) to bear on a scenario that is different from any encountered before.

3. **Create comprehensive asset class performance projections by blending descriptive asset class characteristics with the capital market insight and economic analyses developed in Steps 1 and 2.** The third step in our process is to create five- to ten-year performance projections that include total annualized returns, annualized standard deviation of returns, and correlation of asset class returns. The object of these return projections is not to try to pinpoint the exact return for each asset class, but to estimate a central point around which future returns are likely to fall.
4. **Test performance projections for reasonable results with an optimization model and fine tune preliminary estimates when necessary.** The final step in our process involves fine-tuning these preliminary estimates within specified ranges so that they behave rationally in a standard optimization environment. This step is an iterative process where preliminary return, risk, and correlation values are chosen for each asset class and entered into the optimization program. The resulting optimal portfolios are subjected to a careful examination to determine:
 - No asset class is under- or over-weighted in any of the optimal portfolios for multiple levels of risk, including standard deviation, liquidity, and other implementation considerations.
 - There is continuity moving from safer to riskier portfolios, so that a small movement along the efficient frontier does not cause a large change in the portfolio weightings.
 - Return, risk, and correlation values are adjusted on the basis of this analysis until reasonable portfolios are produced.

By using this four-stage process, we are able to develop values that A) are consistent with historical, economic, and financial market behavior; B) incorporate important information about the projected capital market environment; and C) behave well in a standard optimization environment.

2. List the asset classes, sub-asset classes or strategies for which your forecast returns.

	Asset Class	Benchmark
Equities	Broad Domestic	Russell 3000
	Large Cap	S&P 500
	Small/Mid Cap	Russell 2500
	International	MSCI EAFE
	Emerging Markets	MSCI EM
	Global ex-U.S.	MSCI ACWI ex-U.S.
Fixed Income	Domestic	Bloomberg Barclays Aggregate
	Long Duration	Bloomberg Barclays Long Gov't/Credit
	Defensive	Bloomberg Barclays Gov't/Credit 1-3 Year
	TIPS	Bloomberg Barclays TIPS
	High Yield	Bloomberg Barclays High Yield
	Non-U.S.\$	Bloomberg Barclays Global Aggregate ex-U.S.
	Emerging Mkt. Debt	JPM EMBI Global Diversified
Other	Real Estate	Callan Total Real Estate Database
	Private Equity	Venture Economics Post-Venture Capital
	Absolute Return	Callan Hedge Fund-of-Fund Database
	Commodities	Bloomberg Commodity
	Cash Equivalents	90-Day U.S. Treasury Bill
	Inflation	CPI - All Urban Consumers

The benchmarks above are investable (for the most part), measurable and representative of the markets they cover. In addition, we can and have modeled more specialized strategies (i.e. natural resources, infrastructure, etc.) as requested/needed by our clients.

3. Do you use mean-variance analysis?

Yes, we use our capital market expectations to construct "optimal" strategic asset mixes i.e. asset mixes that generate the maximum expected return for a given level of risk. We use our proprietary optimization model to create the optimal asset mixes.

We look across the range of optimal asset mixes (the "efficient frontier") to identify mixes that could potentially improve upon the existing target asset allocation. The range we evaluate generally includes more conservative mixes which emphasize greater levels of capital preservation, a mix with the same expected

return as the existing target if the existing target is not optimal, and more aggressive mixes which focus on higher levels of capital appreciation.

4. Do you use multi-moment optimization?

We assume a normal distribution for optimization purposes and only use the first and second moments. The motivation for not using higher moments is that we do not believe that we can properly parameterize given the data available for three reasons. First, non-symmetrical distributions are often developed in the context of a regime switching environment. The data available (especially for newer asset classes such as emerging markets) are too limited to estimate parameters for these distributions with confidence. Second, in the course of parameterizing expectations it is difficult to maintain the convexity of the set of potential outcomes. In the absence of convexity the optimization process can terminate at local risk minimums for a targeted return that may not be global risk minimums. Finally, from a practical standpoint optimization is essentially a way to maximize diversification. The additional information introduced by higher moments is both limited and uncertain.

5. Have you developed proprietary in-house models or do you use a vendor's product? Please explain your choice.

We use both proprietary and in-house models. We have optimization and simulation models that have been developed in house, but we primarily use ProVal for performing asset-liability studies. While we do dozens of these studies every year that is still insufficient revenue to justify developing and maintaining a model for defined benefit pension plans. ProVal is a sophisticated model that the vendor continuously updates to stay current with pension rules and requirements. In addition, actuarial firms often use ProVal to perform valuations which potentially allows us to use some or all of the files they have created for the valuation on our asset-liability study.

6. Can you incorporate dynamic asset allocation into the asset-liability study? Have you done so in the past? Describe a study or studies where you incorporated dynamic asset allocation in an asset-liability study.

We can do dynamic asset allocation in two ways. First, we can change the allocation from year to year over the projection period of the asset-liability study. Second, portfolios are automatically rebalanced to a target asset allocation at the beginning of each year of the study. This has the effect of "buying low and selling high" which is a form of dynamic asset allocation.

Our models do not allow us to change the asset allocation based on parameters such as simulated returns or valuation data. We do not view this as a limitation because we believe that dynamic asset allocation is challenging to implement successfully thus clients are better served by sticking with long-term strategic allocations. To the extent that clients would like to pursue dynamic asset allocation we recommend that they implement it using tactical managers measured against static target allocations.

G. Describe your liability modeling.

Callan has been leasing a well-known actuarial/forecasting software application called ProVal from Winklevoss Technologies for over 15 years. ProVal is used by several major global employee benefits consulting firms as its sole platform for delivering actuarial valuations. This wide distribution ensures that it is fully capable of handling virtually any plan's benefit formulas and actuarial assumptions, no matter how complex. ProVal is considered the industry standard for forecasting and ALM work within the investment consultant and pension actuarial communities. Furthermore, ProVal was primarily built as a forecasting tool and enables users to employ Monte Carlo simulation for projections of inflation, interest rates and asset class returns. ProVal uses Monte Carlo simulation to evaluate the expected behavior of each of the efficient mixes within the context of a fund's future assets and liabilities. By simulating thousands of potential capital market outcomes and observing the interaction of assets and liabilities across all of these scenarios, we can begin to understand the effect that each asset mix might have on a fund's future. ProVal facilitates capital market simulation via a utility that Callan parameterizes each year based on regression analysis and revised ten-year capital market assumptions for risk, return and correlations. We are able to simulate over 20 asset classes along with price inflation, wage inflation, interest rates and credit premiums which drive liabilities. The capital market simulator begins by simulating inflation and one-year U.S. Treasury bill real rates as long-term mean-reverting autoregressive processes. A no-arbitrage stochastic process is applied to bootstrap the rest of the Treasury curve. Curves can vary by shape, steepness and level of rates. Next, a mean-reverting credit spread model is layered on top of the stochastic Treasury curve. Simulated nominal returns on one-year T-bills, 1-year credit bills, 30-year U.S. Treasury bonds and 30-year credit bonds are calculated based on the changes in the appropriate curve. The last step is to parameterize multiple regression equations to the four variables for the Treasury and Credit Curve. Bonds are calibrated to have high correlation to the yield curves while equities will exhibit meaningful correlation only to the credit curve.

H. Have you developed a proprietary in-house model or do you use an outside vendor's product?

As mentioned previously, we use the industry-leading ProVal software for our liability modeling. ProVal possesses all the necessary modeling capabilities and flexibility required to thoroughly analyze our client's pension plan liabilities and asset allocation. ProVal allows us to customize the liability modeling according to our client's specific benefit formulas, funding methods, actuarial assumptions, etc. The ability to customize the liability modeling allows us to age the Fund to produce workable valuations for future years. The ProVal term structure model has been in use for more than ten years and is continually tuned and revised as necessary.

I. How do you model and forecast liquidity?

Analyzing client liabilities, short-and long-term objectives, and policy or regulatory considerations, Callan customizes asset allocation and portfolio structure to their specific needs. As part of this customization, we address liquidity issues through both asset allocation and implementation, including manager structure and rebalancing.

Liquidity analysis gauges the balance between the fund's liquidity needs and its liquidity sources. We test potential portfolios by simulating situations of heightened need for liquidity combined with constricted access to liquidity sources.

Callan's liquidity analysis consists of four steps:

1. Define liquidity needs

For context, let us step back for a moment and explain the foundation of our thinking. A fund will have fewer liquidity needs to pay benefits and rebalance if its time horizon is relatively long. This means the fund does not require the ability to withdraw at any time with reasonable certainty of value. A time horizon starts when the investment portfolio is implemented and ends when funds are removed. This time span is important because it can directly affect the fund's risk tolerance.

We explore each fund individually to understand its liquidity needs, which are a reflection of the size of the fund relative to the sponsor, its maturity, and its funding policy. For example:

- A mature, closed fund with large expected net-cash out-flows relative to assets may have to dedicate a portion of the liquidity needed for annual benefits to short-term securities.
- An open fund with net cash outflows that are less than five percent of fund assets will not likely need to explicitly acknowledge liquidity in the strategic asset allocation policy.

2. Incorporate liabilities

Our asset allocation process incorporates comprehensive models, both quantitative and qualitative. The projections that result provide an assessment of how a portfolio might perform in various economic environments. When integrated with liabilities, this analysis assesses risk factors across both sides of the fund's balance sheet.

We explicitly address liquidity needs by integrating into our analysis a comprehensive model of the fund's liabilities, including expected benefit payments and administration costs. This simulation shows the potential range of liquidity needs, which are important in gauging an appropriate investment time horizon. They are also critical in determining tolerance for higher-returning, higher-risk asset classes, as well as the ability to commit to illiquid investments.

3. Examine manager structure

Manager structure looks at decisions within asset classes, such as the appropriate mixture of active/passive, and the right blend of value/growth. It extends our liquidity analysis and subsequent modeling to potential manager strategies. Manager structure provides the critical link between asset allocation and actual manager selection.

During this process, we take into consideration transition costs and fees for implementing the new structure, which may influence liquidity. If there are new asset classes for the fund, we will explore a

pricing analysis for less liquid areas, alternative vehicles and make clear any additional expenses and resulting liquidity concerns.

On the implementation side, solutions can include holding passive exposures in all major liquid asset classes to ensure benefit payments are made and rebalancing is done without any disruption to active manager strategies. For both the active and passive managers, we evaluate the expected liquidity for each manager and include this evaluation in designing the appropriate combination of managers.

4. Determine rebalancing ranges

Thoughtful, disciplined rebalancing is essential to setting and sticking to a strategic asset allocation and managing cash flow. Over time, rebalancing has generally reduced overall portfolio volatility and increased total return. Optimal rebalancing ranges will depend on the underlying strategic asset allocation. The rebalancing range for a particular asset class will depend on its allocation, volatility, correlation, transaction costs, and the average length of performance cycles.

We periodically evaluate the current allocation against the strategic target, liquidity needs, and the related rebalancing ranges. If the fund's allocation exceeds the strategic ranges, we propose an implementation plan for returning the fund back to the strategic target.

J. Describe your stochastic simulation process.

Using our proprietary Monte Carlo model, we simulate thousands of possible future capital market outcomes and observe the interaction of assets and liabilities across all potential scenarios. Our model uses our own capital market assumptions to proxy asset classes during these simulations. We focus on evaluating the reward, or improvement in expected case versus the risk, defined as the worsening in the worst case outcome, when we look at the potential asset allocation. We initially define the "worst case" as the 95th percentile result, or comparable in concept to a two-standard deviation event. By simulating thousands of potential capital market outcomes and observing the interaction of assets and liabilities across all of these scenarios, we can begin to understand the effect that each asset mix might have on a fund's future and the sponsor entity.

1. Do your Monte Carlo simulations use normal distributions or non-normal distributions? If you use normal distributions, how do you account for probability distributions in financial markets that often appear to be heavytailed (i.e., exhibiting skewness or kurtosis)?

All of our Monte Carlo simulation models assume normal distributions. This is necessary to be consistent with our optimization process which assumes normal distributions. It is also appropriate because of the limited amount of data available to parameterize non-normal distributions. In order to account for return distributions with fat tails we increase the size of the forecast standard deviations. This has the benefit of increasing the probability of more extreme events without having to estimate higher moments.

K. Can your model/process accommodate specific market scenarios such as the 1994 bond market crash, 2000-2002 bear market, or 2007-2009 financial crisis in a specific period (e.g., the next five years)?

Yes, our model can simulate thousands of potential economic scenarios, including those specified above with some caveats. The market crises above occurred in different fixed income interest rate environments, which factors into the how we model a future crisis would unfold. Callan routinely conducts scenario analyses to shed light on possible future outcomes and to better understand various factors that can lead to risk. Typically, we perform scenario analysis via the ProVal software.

1. Describe examples of studies you have conducted in the past that incorporated similar scenarios.

As an example, we recently conducted scenario analysis for a large public pension fund that was underfunded and considering a proposed funding policy to better fund the Plan. Of course, over the long run, a more aggressive asset allocation is expected to improve funded status as well. Risk was evaluated using funded ratio drawdown analysis (i.e. how much the unfunded liability could grow) and the resulting impact on contribution rates. Multiple scenarios were analyzed with the goal of achieving a deep understanding of the impact of capital market risk and return on each factor over a 10-year planning horizon.

L. Describe your experience customizing asset-liability studies for clients.

Callan has been conducting customized asset-liability and asset allocation studies since the inception of our firm. We typically complete 20-25 full asset-liability studies each year and 20-25 asset allocation only studies. Importantly to S&WB, we work with a diverse set of clients on custom asset-liability framework, including a number of public defined benefit plans. Callan's proprietary asset allocation-liability modeling capabilities originated in the late 1970s and have been continually enhanced. These enhancements encompass Callan's state-of-the-art modeling technologies, as well as more than thirty years of experience in asset allocation modeling for major institutional investors.

We maintain a dedicated Capital Markets Consulting specialty group that is responsible for conducting all asset allocation work. This seven-person team comprises seasoned professionals with backgrounds in finance, accounting, investments, actuarial science, economics and statistics. The CMR team averages 26 years of industry experience, with more than 15 years at Callan. Each group member is an expert at articulating complicated analysis in very practical terms.

We also subject every study to formal oversight review by our Client Policy Review Committee. This committee, comprised of senior level consultants and specialists, reviews all strategic planning studies. In addition to providing necessary oversight, the Committee brings valuable experience to bear on each study.

1. Can your model/process evaluate specific scenarios determined by the client? To what extent?

Yes, we are able to run specific scenarios provided by the client. Our process for conducting scenario analysis begins with defining the problem in terms of the time horizon and factors to be assessed like funded ratio or contribution rates. Most factors are known once the problem is defined. For example, current state of

the economy, capital market uncertainty, funding policy (e.g. changes to contribution rates), regulation, adjustments to active member wages, flexibility to employ actuarial smoothing techniques and the financial ability of the Plan Sponsor to make actuarial contributions among other factors. Some factors are known while others may be highly uncertain.

- 2. Specifically, the S&WB would like to evaluate two main scenarios: (a) defined benefit plan remains open to new entrants and (b) defined benefit plan is closed to new entrants. Can you run these scenarios? Please describe a previous project in which you ran a similar analysis.**

Yes, Callan is able to handle a wide range modeling scenario including the impact of keeping open or closing the plan, freezing the plan, and any changes in benefit levels or funding policy. As an example of a previous project, we recently worked with three large public funds that have added new tiers of benefit levels. What that means is an existing tier of benefits “closes” to new entrants, and those new entrants are directed to a new level of benefits or “open” tier. These studies also included changing future actuarial assumptions and increasing employee contribution rates into the future.

- a. In scenario (b), we would like to estimate the pension costs with an assumed employer contribution for the employees in the defined contribution plan. Could you provide the excluded employee’s projected wages for such a purpose?**

Yes, Callan has the flexibility to model this scenario using custom programming to simulate unique funding policy’s such as the one described above.

M. What metrics do you provide in the analysis? Please provide an example report output.

The final report provides a number of key metrics for clients including, but not limited to project annualized returns and risk, drawdown, projected market values of assets and liabilities, funded status forecasts, projected contributions, and net costs. A sample asset-liability report for a public plan has been included with our response.

N. The S&WB would like to develop a Statement of Risk Capacity and Risk Appetite. We believe that the asset-liability study will provide information to help articulate the Pension Committee’s risk appetite.

- 1. Can you provide probabilities of outcomes to assist in the development of a statement of risk appetite, such as “over the next 5 years, the funded ratio should have less than a __% probability of being lower than __%”? What are the most important statements of probability in the context of an asset-liability study?**

Yes, Callan can provide outcome probabilities for the funded ratio and other variables that can help measure risk appetite. One area to consider is where in the distribution of outcomes is risk defined – should it be 2 standard deviations from the expected case or something higher? The 2008 Great Recession scenario was arguably a 3 or 4 standard deviation event. A second area to consider is the distribution of outcomes, such as defining risk in different economic regimes. Other important statements of probability we have found that

resonate included the impact on contributions as the funded ratio declines, and the impact on the plan's liquidity needs.

2. ERS's current Investment Objectives are listed below. How would your study results combined with the Investment Objectives translate into a Statement of Risk Appetite? Have you done this in previous studies?

a. ERS Investment Objectives

- I. Have the ability to pay all benefit and expense obligations when due.**
- II. Achieve a fully funded status with regard to the Accumulated Benefit Obligations and 100% of the Projected Benefit Obligation.**
- III. Maintain the purchasing power of the current assets and all future contributions by producing positive real rates of return on Plan assets.**
- IV. Maximize returns within reasonable and prudent levels of risk in order to minimize contributions.**
- V. Control costs of administering the Plan and managing the investments.**
- VI. Maintain flexibility in determining the future level of contributions.**

Callan regularly helps clients develop risk appetites for their appropriate situation and we have been actively conducting asset-liability studies for over 25 years. To help develop a Statement of Risk Appetite, an important element of our asset-liability studies is to articulate the targeted level of return for the Plan as embedded in the liability value (such as the ABO and PBO referenced above). That is, the value of the actuarial liability is derived using a discount rate and other economic assumptions like inflation. Hence, these economic assumptions indicate how much investment risk in the portfolio is necessary in order to achieve the return objectives that keep the plan on its course to full funding. Another important area of our asset-liability studies is to ensure sufficient liquidity in the investment strategy to best manage the ability to pay benefits, particularly in times of market stress.

3. The Chief Investment Officer wants to incorporate "risk capacity" into this asset-liability study and has identified a paper by PPCmetrics2 which he believes will be useful given the current and near-term profile of ERS. Can you incorporate the paper's measures of "structural risk capacity," "financial risk capacity," and the "risk-bearing funding ratio" into the assetliability study?

Callan has typically performed this type of analysis for corporate plans whose liability discount rate is driven by a high quality corporate yield curve rather than a long-term return assumption. We can evaluate this for S&WB, but as highlighted earlier, it would mean lowering the discount rate for this portion of the liability into the 3-3.5% range based on current yield levels. Since our models are able to partition the liability between

groups of participants like active employee, terminated vested or retiree, we are able to incorporate the measurements discussed in the paper and to help articulate the risk dimensions favored by your organization.

- a. If your response is “yes,” please outline briefly whether you have done this or something similar before or if you have not used the concept before, how you might do so here.**

Yes, Callan is able to incorporate the research discussed in the paper with some additional thoughts for consideration. One concept that the paper advances is that discount rate for the retiree liabilities of the plan should reflect fixed income yields rather than a long-term return assumption. That would mean lowering the discount rate for this portion of the liability into the 3-3.5% range based on current yield levels. Since our models are able to partition the liability between groups of participants like active employee, terminated vested or retiree, we are able to incorporate the measurements discussed in the paper and to help articulate the risk dimensions favored by your organization.

- b. If your response is “no,” please outline briefly, what concept(s)/measure(s) you believe are more appropriate and whether you would incorporate your preferred measures into the asset-liability study.**

As articulated above, Callan would like to incorporate other measures of the risk and reward tradeoff analysis into the asset-liability study. In addition to examining accrued funded ratios, there are a number of other variables to consider in developing a long-term investment strategy. As mentioned earlier, contribution volatility, liquidity needs, net cash flows (i.e. contributions – benefit payments) and actuarial assumptions are important areas to include the analysis.

N. Fees and Costs for Proposed Service

- 1. Please state the proposed cost in dollars to provide all the work to be performed as described in Section II (Phases I and II).**

- a. As an alternative, the respondent may propose:**

- I. A total dollar amount for Phase I as described in Section II and**
- II. A cost per hour and estimated hours to complete Phase II as described in Section II.**

Callan proposes a one-time, all-inclusive fee of \$45,000 for the services requested by the Board in Section II of the RFP. This fee is inclusive of all incidental and travel-related costs for Callan personnel for the duration of this engagement. Our fee includes the following services:

- Comprehensive asset-liability study that incorporates Callan’s capital market projections, liability data provided by the Board actuary and any modeling/scenario analysis requested by staff or the Board
- Cooperation with the plan actuary to gather all data necessary to conduct the study
- Detailed report describing Callan’s forecast and simulations and metrics for evaluating plan outcomes

SEWERAGE AND WATER BOARD OF NEW ORLEANS

October 20, 2017

- Up to four in-person meetings with staff, the CIO and ERS Pension Committee and unlimited meetings via telephone to discuss key results, revisions to the study and/or assumptions and any modeling changes requested by staff or the Board
- Access to all Callan research for the duration of the engagement

FORM ADV**UNIFORM APPLICATION FOR INVESTMENT ADVISER REGISTRATION AND REPORT BY
EXEMPT REPORTING ADVISERS****Primary Business Name: CALLAN****CRD Number: 107687****Other-Than-Annual Amendment - All Sections****Rev. 10/2012****9/12/2017 1:00:53 PM**

WARNING: Complete this form truthfully. False statements or omissions may result in denial of your application, revocation of your registration, or criminal prosecution. You must keep this form updated by filing periodic amendments. See Form ADV General Instruction 4.

Item 1 Identifying Information

Responses to this Item tell us who you are, where you are doing business, and how we can contact you.

A. Your full legal name (if you are a sole proprietor, your last, first, and middle names):

CALLAN LLC

B. Name under which you primarily conduct your advisory business, if different from Item 1.A.:

CALLAN

List on Section 1.B. of Schedule D any additional names under which you conduct your advisory business.

C. If this filing is reporting a change in your legal name (Item 1.A.) or primary business name (Item 1.B.), enter the new name and specify whether the name change is of

☐ your legal name or ☐ your primary business name:

D. (1) If you are registered with the SEC as an investment adviser, your SEC file number: **801-9219**

(2) If you report to the SEC as an *exempt reporting adviser*, your SEC file number:

E. If you have a number ("CRD Number") assigned by the *FINRA's CRD* system or by the IARD system, your CRD number: **107687**

If your firm does not have a CRD number, skip this Item 1.E. Do not provide the CRD number of one of your officers, employees, or affiliates.

F. *Principal Office and Place of Business*

(1) Address (do not use a P.O. Box):

Number and Street 1:

600 MONTGOMERY STREET

City:

SAN FRANCISCO

State:

California

Number and Street 2:

SUITE 800

Country:

United States

ZIP+4/Postal Code:

94111

If this address is a private residence, check this box: ☐

List on Section 1.F. of Schedule D any office, other than your principal office and place of business, at which you conduct investment advisory business. If you are applying for registration, or are registered, with one or more state securities authorities, you must list all of your offices in the state or states to

which you are applying for registration or with whom you are registered. If you are applying for SEC registration, if you are registered only with the SEC, or if you are reporting to the SEC as an exempt reporting adviser, list the largest five offices in terms of numbers of employees.

(2) Days of week that you normally conduct business at your *principal office and place of business*:

☒ Monday - Friday ☐ Other:

Normal business hours at this location:

8 AM - 5 PM

(3) Telephone number at this location:

415-974-5060

(4) Facsimile number at this location:

415-291-4019

G. Mailing address, if different from your *principal office and place of business* address:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

H. If you are a sole proprietor, state your full residence address, if different from your *principal office and place of business* address in Item 1.F.:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

Yes No

I. Do you have one or more websites?

☒ ☐

If "yes," list all website addresses on Section 1.I. of Schedule D. If a website address serves as a portal through which to access other information you have published on the web, you may list the portal without listing addresses for all of the other information. Some advisers may need to list more than one portal address. Do not provide individual electronic mail (e-mail) addresses in response to this Item.

J. Provide the name and contact information of your Chief Compliance Officer: If you are an *exempt reporting adviser*, you must provide the contact information for your Chief Compliance Officer, if you have one. If not, you must complete Item 1.K. below.

Name:

ANN C. DE LUCE

Other titles, if any:

CHIEF COMPLIANCE OFFICER

Telephone number:

415-974-5060

Facsimile number:

415-291-4114

Number and Street 1:

600 MONTGOMERY STREET

Number and Street 2:

SUITE 800

City:

SAN FRANCISCO

State:

California

Country:

United States

ZIP+4/Postal Code:

94111

Electronic mail (e-mail) address, if Chief Compliance Officer has one:

DELUCE@CALLAN.COM

- K. Additional Regulatory Contact Person: If a person other than the Chief Compliance Officer is authorized to receive information and respond to questions about this Form ADV, you may provide that information here.

Name:		Titles:	
ROSANNA SANGALANG		SVP HUMAN RESOURCES & COMPLIANCE	
Telephone number:		Facsimile number:	
415-974-5060		415-291-4114	
Number and Street 1:		Number and Street 2:	
600 MONTGOMERY STREET		SUITE 800	
City:	State:	Country:	ZIP+4/Postal Code:
SAN FRANCISCO	California	United States	94111

Electronic mail (e-mail) address, if contact person has one:
SANGALANG@CALLAN.COM

Yes No

- L. Do you maintain some or all of the books and records you are required to keep under Section 204 of the Advisers Act, or similar state law, somewhere other than your *principal office and place of business*? ☒ ☐

If "yes," complete Section 1.L. of Schedule D.

Yes No

- M. Are you registered with a *foreign financial regulatory authority*? ☐ ☒

Answer "no" if you are not registered with a foreign financial regulatory authority, even if you have an affiliate that is registered with a foreign financial regulatory authority. If "yes," complete Section 1.M. of Schedule D.

Yes No

- N. Are you a public reporting company under Sections 12 or 15(d) of the Securities Exchange Act of 1934? ☐ ☒

If "yes," provide your CIK number (Central Index Key number that the SEC assigns to each public reporting company):

Yes No

- O. Did you have \$1 billion or more in assets on the last day of your most recent fiscal year? ☐ ☒

- P. Provide your *Legal Entity Identifier* if you have one:

A *legal entity identifier* is a unique number that companies use to identify each other in the financial marketplace. In the first half of 2011, the *legal entity identifier* standard was still in development. You may not have a *legal entity identifier*.

SECTION 1.B. Other Business Names

List your other business names and the jurisdictions in which you use them. You must complete a separate Schedule D Section 1.B. for each business name.

Name: CALLAN ASSOCIATES INC.

Jurisdictions

<input type="checkbox"/> AL	<input checked="" type="checkbox"/> IL	<input checked="" type="checkbox"/> NE	<input type="checkbox"/> SC
<input checked="" type="checkbox"/> AK	<input checked="" type="checkbox"/> IN	<input checked="" type="checkbox"/> NV	<input type="checkbox"/> SD
<input checked="" type="checkbox"/> AZ	<input type="checkbox"/> IA	<input checked="" type="checkbox"/> NH	<input checked="" type="checkbox"/> TN
<input type="checkbox"/> AR	<input checked="" type="checkbox"/> KS	<input checked="" type="checkbox"/> NJ	<input checked="" type="checkbox"/> TX
<input checked="" type="checkbox"/> CA	<input type="checkbox"/> KY	<input type="checkbox"/> NM	<input type="checkbox"/> UT
<input checked="" type="checkbox"/> CO	<input checked="" type="checkbox"/> LA	<input checked="" type="checkbox"/> NY	<input checked="" type="checkbox"/> VT
<input checked="" type="checkbox"/> CT	<input type="checkbox"/> ME	<input checked="" type="checkbox"/> NC	<input type="checkbox"/> VI
<input type="checkbox"/> DE	<input checked="" type="checkbox"/> MD	<input type="checkbox"/> ND	<input checked="" type="checkbox"/> VA
<input type="checkbox"/> DC	<input checked="" type="checkbox"/> MA	<input checked="" type="checkbox"/> OH	<input checked="" type="checkbox"/> WA
<input checked="" type="checkbox"/> FL	<input checked="" type="checkbox"/> MI	<input type="checkbox"/> OK	<input type="checkbox"/> WV
<input checked="" type="checkbox"/> GA	<input checked="" type="checkbox"/> MN	<input type="checkbox"/> OR	<input checked="" type="checkbox"/> WI
<input type="checkbox"/> GU	<input type="checkbox"/> MS	<input checked="" type="checkbox"/> PA	<input type="checkbox"/> WY
<input checked="" type="checkbox"/> HI	<input checked="" type="checkbox"/> MO	<input type="checkbox"/> PR	<input type="checkbox"/> Other:
<input type="checkbox"/> ID	<input type="checkbox"/> MT	<input type="checkbox"/> RI	

SECTION 1.F. Other Offices

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest five offices (in terms of numbers of *employees*).

Number and Street 1:

1 DEFOREST AVENUE

Number and Street 2:

SUITE 101

City:

SUMMIT

State:

New Jersey

Country:

United States

ZIP+4/Postal Code:

07901

If this address is a private residence, check this box: ☐

Telephone Number:

908-522-3880

Facsimile Number:

908-277-1503

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest five offices (in terms of numbers of *employees*).

Number and Street 1:

120 N. LA SALLE STREET

Number and Street 2:

SUITE 2400

City:	State:	Country:	ZIP+4/Postal Code:
CHICAGO	Illinois	United States	60602-2424

If this address is a private residence, check this box: ☐

Telephone Number:	Facsimile Number:
312-346-3536	312-346-1356

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest five offices (in terms of numbers of *employees*).

Number and Street 1:	Number and Street 2:		
300 GALLERIA PARKWAY	SUITE 950		
City:	State:	Country:	ZIP+4/Postal Code:
ATLANTA	Georgia	United States	30339-3153

If this address is a private residence, check this box: ☐

Telephone Number:	Facsimile Number:
770-618-2140	770-618-2141

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest five offices (in terms of numbers of *employees*).

Number and Street 1:	Number and Street 2:		
1900 16TH STREET	SUITE 1175		
City:	State:	Country:	ZIP+4/Postal Code:
DENVER	Colorado	United States	80202-1115

If this address is a private residence, check this box: ☐

Telephone Number:	Facsimile Number:
303-861-1900	303-832-8230

Complete the following information for each office, other than your *principal office and place of business*, at which you conduct investment advisory business. You must complete a separate Schedule D Section 1.F. for

each location. If you are applying for SEC registration, if you are registered only with the SEC, or if you are an *exempt reporting adviser*, list only the largest five offices (in terms of numbers of *employees*).

Number and Street 1:

4550 FINCH STREET

Number and Street 2:

City:

MUKILTEO

State:

Washington

Country:

United States

ZIP+4/Postal Code:

98275

If this address is a private residence, check this box: ☒

Telephone Number:

415-274-3052

Facsimile Number:

415-291-4014

SECTION 1.I. Website Addresses

List your website addresses. You must complete a separate Schedule D Section 1.I. for each website address.

Website Address: HTTP://WWW.CALLAN.COM/

SECTION 1.L. Location of Books and Records

Complete the following information for each location at which you keep your books and records, other than your *principal office and place of business*. You must complete a separate Schedule D Section 1.L. for each location.

Name of entity where books and records are kept:

THE BANK OF NEW YORK MELLON

Number and Street 1:

135 SANTILLI HIGHWAY

Number and Street 2:

City:

EVERETT

State:

Massachusetts

Country:

United States

ZIP+4/Postal Code:

02149

If this address is a private residence, check this box: ☐

Telephone Number:

617-382-2676

Facsimile number:

This is (check one):

- ☐ one of your branch offices or affiliates.
☐ a third-party unaffiliated recordkeeper.
☒ other.

Briefly describe the books and records kept at this location:

A PORTION OR SOME OF THE PRIVATE TRUSTS RECORDS ARE KEPT AT THE GROUP TRUSTEE, THE BANK OF NEW YORK MELLON.

SECTION 1.M. Registration with Foreign Financial Regulatory Authorities

No Information Filed

Item 2 SEC Registration/Reporting

Responses to this Item help us (and you) determine whether you are eligible to register with the SEC. Complete this Item 2.A. only if you are applying for SEC registration or submitting an *annual updating amendment* to your SEC registration.

- A. To register (or remain registered) with the SEC, you must check **at least one** of the Items 2.A.(1) through 2.A.(12), below. If you are submitting an *annual updating amendment* to your SEC registration and you are no longer eligible to register with the SEC, check Item 2.A.(13). Part 1A Instruction 2 provides information to help you determine whether you may affirmatively respond to each of these items.

You (the adviser):

- ☒ (1) are a **large advisory firm** that either:
- (a) has regulatory assets under management of \$100 million (in U.S. dollars) or more, or
 - (b) has regulatory assets under management of \$90 million (in U.S. dollars) or more at the time of filing its most recent *annual updating amendment* and is registered with the SEC;
- ☐ (2) are a **mid-sized advisory firm** that has regulatory assets under management of \$25 million (in U.S. dollars) or more but less than \$100 million (in U.S. dollars) and you are either:
- (a) not required to be registered as an adviser with the *state securities authority* of the state where you maintain your *principal office and place of business*, or
 - (b) not subject to examination by the *state securities authority* of the state where you maintain your *principal office and place of business*;
- Click **HERE** for a list of states in which an investment adviser, if registered, would not be subject to examination by the state securities authority.*
- ☐ (3) have your *principal office and place of business* **in Wyoming** (which does not regulate advisers);
- ☐ (4) have your *principal office and place of business* **outside the United States**;
- ☒ (5) are an **investment adviser (or sub-adviser) to an investment company** registered under the Investment Company Act of 1940;
- ☐ (6) are an **investment adviser to a company which has elected to be a business development company** pursuant to section 54 of the Investment Company Act of 1940 and has not withdrawn the election, and you have at least \$25 million of regulatory assets under management;
- ☒ (7) are a **pension consultant** with respect to assets of plans having an aggregate value of at least \$200,000,000 that qualifies for the exemption in rule 203A-2(a);
- ☐ (8) are a **related adviser** under rule 203A-2(b) that *controls*, is *controlled* by, or is under common control with, an investment adviser that is registered with the SEC, and your *principal office and place of business* is the same as the registered adviser;
- If you check this box, complete Section 2.A.(8) of Schedule D.*
- ☐ (9) are a **newly formed adviser** relying on rule 203A-2(c) because you expect to be eligible for SEC registration within 120 days;
- If you check this box, complete Section 2.A.(9) of Schedule D.*
- ☐ (10) are a **multi-state adviser** that is required to register in 15 or more states and is relying on rule 203A-2(d);
- If you check this box, complete Section 2.A.(10) of Schedule D.*

- ☐ (11) are an **Internet adviser** relying on rule 203A-2(e);
- ☐ (12) have **received an SEC order** exempting you from the prohibition against registration with the SEC;

If you check this box, complete Section 2.A.(12) of Schedule D.

- ☐ (13) are **no longer eligible** to remain registered with the SEC.

State Securities Authority Notice Filings and State Reporting by Exempt Reporting Advisers

- C. Under state laws, SEC-registered advisers may be required to provide to *state securities authorities* a copy of the Form ADV and any amendments they file with the SEC. These are called *notice filings*. In addition, *exempt reporting advisers* may be required to provide *state securities authorities* with a copy of reports and any amendments they file with the SEC. If this is an initial application or report, check the box(es) next to the state(s) that you would like to receive notice of this and all subsequent filings or reports you submit to the SEC. If this is an amendment to direct your *notice filings* or reports to additional state(s), check the box(es) next to the state(s) that you would like to receive notice of this and all subsequent filings or reports you submit to the SEC. If this is an amendment to your registration to stop your *notice filings* or reports from going to state(s) that currently receive them, uncheck the box(es) next to those state(s).

Jurisdictions

<input type="checkbox"/> AL	<input checked="" type="checkbox"/> IL	<input checked="" type="checkbox"/> NE	<input type="checkbox"/> SC
<input checked="" type="checkbox"/> AK	<input checked="" type="checkbox"/> IN	<input checked="" type="checkbox"/> NV	<input type="checkbox"/> SD
<input checked="" type="checkbox"/> AZ	<input type="checkbox"/> IA	<input checked="" type="checkbox"/> NH	<input checked="" type="checkbox"/> TN
<input type="checkbox"/> AR	<input checked="" type="checkbox"/> KS	<input checked="" type="checkbox"/> NJ	<input checked="" type="checkbox"/> TX
<input checked="" type="checkbox"/> CA	<input type="checkbox"/> KY	<input type="checkbox"/> NM	<input type="checkbox"/> UT
<input checked="" type="checkbox"/> CO	<input checked="" type="checkbox"/> LA	<input checked="" type="checkbox"/> NY	<input checked="" type="checkbox"/> VT
<input checked="" type="checkbox"/> CT	<input type="checkbox"/> ME	<input checked="" type="checkbox"/> NC	<input type="checkbox"/> VI
<input type="checkbox"/> DE	<input checked="" type="checkbox"/> MD	<input type="checkbox"/> ND	<input checked="" type="checkbox"/> VA
<input type="checkbox"/> DC	<input checked="" type="checkbox"/> MA	<input checked="" type="checkbox"/> OH	<input checked="" type="checkbox"/> WA
<input checked="" type="checkbox"/> FL	<input checked="" type="checkbox"/> MI	<input type="checkbox"/> OK	<input type="checkbox"/> WV
<input checked="" type="checkbox"/> GA	<input checked="" type="checkbox"/> MN	<input type="checkbox"/> OR	<input checked="" type="checkbox"/> WI
<input type="checkbox"/> GU	<input type="checkbox"/> MS	<input checked="" type="checkbox"/> PA	<input type="checkbox"/> WY
<input checked="" type="checkbox"/> HI	<input checked="" type="checkbox"/> MO	<input type="checkbox"/> PR	
<input type="checkbox"/> ID	<input type="checkbox"/> MT	<input type="checkbox"/> RI	

If you are amending your registration to stop your notice filings or reports from going to a state that currently receives them and you do not want to pay that state's notice filing or report filing fee for the coming year, your amendment must be filed before the end of the year (December 31).

SECTION 2.A.(8) Related Adviser

If you are relying on the exemption in rule 203A-2(b) from the prohibition on registration because you *control*, are *controlled by*, or are under common *control* with an investment adviser that is registered with the SEC and your *principal office and place of business* is the same as that of the registered adviser, provide the following information:

Name of Registered Investment Adviser

CRD Number of Registered Investment Adviser

SEC Number of Registered Investment Adviser

801 -

SECTION 2.A.(9) Newly Formed Adviser

If you are relying on rule 203A-2(c), the newly formed adviser exemption from the prohibition on registration, you are required to make certain representations about your eligibility for SEC registration. By checking the appropriate boxes, you will be deemed to have made the required representations. You must make both of these representations:

- ☐ I am not registered or required to be registered with the SEC or a *state securities authority* and I have a reasonable expectation that I will be eligible to register with the SEC within 120 days after the date my registration with the SEC becomes effective.
- ☐ I undertake to withdraw from SEC registration if, on the 120th day after my registration with the SEC becomes effective, I would be prohibited by Section 203A(a) of the Advisers Act from registering with the SEC.

SECTION 2.A.(10) Multi-State Adviser

If you are relying on rule 203A-2(d), the multi-state adviser exemption from the prohibition on registration, you are required to make certain representations about your eligibility for SEC registration. By checking the appropriate boxes, you will be deemed to have made the required representations.

If you are applying for registration as an investment adviser with the SEC, you must make both of these representations:

- ☐ I have reviewed the applicable state and federal laws and have concluded that I am required by the laws of 15 or more states to register as an investment adviser with the *state securities authorities* in those states.
- ☐ I undertake to withdraw from SEC registration if I file an amendment to this registration indicating that I would be required by the laws of fewer than 15 states to register as an investment adviser with the *state securities authorities* of those states.

If you are submitting your *annual updating amendment*, you must make this representation:

- ☐ Within 90 days prior to the date of filing this amendment, I have reviewed the applicable state and federal laws and have concluded that I am required by the laws of at least 15 states to register as an investment adviser with the *state securities authorities* in those states.

SECTION 2.A.(12) SEC Exemptive Order

If you are relying upon an SEC *order* exempting you from the prohibition on registration, provide the following information:

Application Number:

803-

Date of *order*:

Item 3 Form of Organization

A. How are you organized?

- ☐ Corporation
- ☐ Sole Proprietorship
- ☐ Limited Liability Partnership (LLP)
- ☐ Partnership
- ☒ Limited Liability Company (LLC)
- ☐ Limited Partnership (LP)
- ☐ Other (specify):

If you are changing your response to this Item, see Part 1A Instruction 4.

B. In what month does your fiscal year end each year?
DECEMBER

C. Under the laws of what state or country are you organized?
State Country
California United States

If you are a partnership, provide the name of the state or country under whose laws your partnership was formed. If you are a sole proprietor, provide the name of the state or country where you reside.

If you are changing your response to this Item, see Part 1A Instruction 4.

Item 4 Successions**Yes No**

A. Are you, at the time of this filing, succeeding to the business of a registered investment adviser? ☒ ☐

If "yes", complete Item 4.B. and Section 4 of Schedule D.

B. Date of Succession: (MM/DD/YYYY)

09/01/2017

If you have already reported this succession on a previous Form ADV filing, do not report the succession again. Instead, check "No." See Part 1A Instruction 4.

SECTION 4 Successions

Complete the following information if you are succeeding to the business of a currently registered investment adviser. If you acquired more than one firm in the succession you are reporting on this Form ADV, you must complete a separate Schedule D Section 4 for each acquired firm. See Part 1A Instruction 4.

Name of Acquired Firm

CALLAN

Acquired Firm's SEC File No. (if any)

801 - 9219

Acquired Firm's CRD Number (if any)

107687

Item 5 Information About Your Advisory Business - Employees, Clients, and Compensation

Responses to this Item help us understand your business, assist us in preparing for on-site examinations, and provide us with data we use when making regulatory policy. Part 1A Instruction 5.a. provides additional guidance to newly formed advisers for completing this Item 5.

Employees

If you are organized as a sole proprietorship, include yourself as an employee in your responses to Item 5.A. and Items 5.B.(1), (2), (3), (4), and (5). If an employee performs more than one function, you should count that employee in each of your responses to Items 5.B.(1), (2), (3), (4), and (5).

- A. Approximately how many *employees* do you have? Include full- and part-time *employees* but do not include any clerical workers.

188

- B. (1) Approximately how many of the *employees* reported in 5.A. perform investment advisory functions (including research)?
- 155
- (2) Approximately how many of the *employees* reported in 5.A. are registered representatives of a broker-dealer?
- 0
- (3) Approximately how many of the *employees* reported in 5.A. are registered with one or more *state securities authorities* as *investment adviser representatives*?
- 0
- (4) Approximately how many of the *employees* reported in 5.A. are registered with one or more *state securities authorities* as *investment adviser representatives* for an investment adviser other than you?
- 0
- (5) Approximately how many of the *employees* reported in 5.A. are licensed agents of an insurance company or agency?
- 0
- (6) Approximately how many firms or other *persons* solicit advisory *clients* on your behalf?
- 1

In your response to Item 5.B.(6), do not count any of your employees and count a firm only once – do not count each of the firm's employees that solicit on your behalf.

Clients

In your responses to Items 5.C. and 5.D. do not include as "clients" the investors in a private fund you advise, unless you have a separate advisory relationship with those investors.

- C. (1) To approximately how many *clients* did you provide investment advisory services during your most recently completed fiscal year?

☒ 0

☐ 1-10

☐ 11-25

☐ 26-100☒ More than 100

If more than 100, how many?

(round to the nearest 100)

600

- (2) Approximately what percentage of your
- clients*
- are non-United States persons?

0%

D. For purposes of this Item 5.D., the category "individuals" includes trusts, estates, and 401(k) plans and IRAs of individuals and their family members, but does not include businesses organized as sole proprietorships. The category "business development companies" consists of companies that have made an election pursuant to section 54 of the Investment Company Act of 1940. Unless you provide advisory services pursuant to an investment advisory contract to an investment company registered under the Investment Company Act of 1940, check "None" in response to Item 5.D.(1)(d) and do not check any of the boxes in response to Item 5.D.(2)(d).

- (1) What types of *clients* do you have? Indicate the approximate percentage that each type of *client* comprises of your total number of *clients*. If a *client* fits into more than one category, check all that apply.

	None	<u>Up to</u> 10%	11-25%	26-50%	51-75%	76-99%	100%
(a) Individuals (other than <i>high net worth individuals</i>)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(b) <i>High net worth individuals</i>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(c) Banking or thrift institutions	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(d) Investment companies	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(e) Business development companies	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(f) Pooled investment vehicles (other than investment companies)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(g) Pension and profit sharing plans (but not the plan participants)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(h) Charitable organizations	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(i) Corporations or other businesses not listed above	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(j) State or municipal <i>government entities</i>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(k) Other investment advisers	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(l) Insurance companies	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(m) Other:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- (2) Indicate the approximate amount of your regulatory assets under management (reported in Item 5.F. below) attributable to each of the following type of *client*. If a *client* fits into more than one category, check all that apply.

	None	<u>Up to</u> 25%	<u>Up to</u> 50%	<u>Up to</u> 75%	>75%
(a) Individuals (other than <i>high net worth individuals</i>)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- | | | | | | |
|--|----------------------------------|----------------------------------|-----------------------|----------------------------------|-----------------------|
| (b) <i>High net worth individuals</i> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (c) Banking or thrift institutions | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (d) Investment companies | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (e) Business development companies | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (f) Pooled investment vehicles (other than investment companies) | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (g) Pension and profit sharing plans (but not the plan participants) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| (h) Charitable organizations | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (i) Corporations or other businesses not listed above | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (j) State or municipal <i>government entities</i> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (k) Other investment advisers | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (l) Insurance companies | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (m) Other: | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Compensation Arrangements

E. You are compensated for your investment advisory services by (check all that apply):

- ☒ (1) A percentage of assets under your management
- ☒ (2) Hourly charges
- ☐ (3) Subscription fees (for a newsletter or periodical)
- ☐ (4) Fixed fees (other than subscription fees)
- ☐ (5) Commissions
- ☐ (6) *Performance-based fees*
- ☒ (7) Other (specify): A PERCENTAGE OF ASSETS ON WHICH WE CONSULT

Item 5 Information About Your Advisory Business - Regulatory Assets Under Management**Regulatory Assets Under Management**

- | | | Yes | No |
|---|-----------------------|----------------------------------|-----------------------|
| F. (1) Do you provide continuous and regular supervisory or management services to securities portfolios? | | <input checked="" type="radio"/> | <input type="radio"/> |
| (2) If yes, what is the amount of your regulatory assets under management and total number of accounts? | | | |
| | U.S. Dollar Amount | Total Number of Accounts | |
| Discretionary: | (a) \$ 20,635,005,248 | (d) 8 | |
| Non-Discretionary: | (b) \$ 2,030,248,461 | (e) 2 | |
| Total: | (c) \$ 22,665,253,709 | (f) 10 | |

Part 1A Instruction 5.b. explains how to calculate your regulatory assets under management. You must follow these instructions carefully when completing this Item.

Item 5 Information About Your Advisory Business - Advisory Activities

Advisory Activities

G. What type(s) of advisory services do you provide? Check all that apply.

- ☐ (1) Financial planning services
- ☐ (2) Portfolio management for individuals and/or small businesses
- ☒ (3) Portfolio management for investment companies (as well as "business development companies" that have made an election pursuant to section 54 of the Investment Company Act of 1940)
- ☐ (4) Portfolio management for pooled investment vehicles (other than investment companies)
- ☒ (5) Portfolio management for businesses (other than small businesses) or institutional *clients* (other than registered investment companies and other pooled investment vehicles)
- ☒ (6) Pension consulting services
- ☒ (7) Selection of other advisers (including *private fund* managers)
- ☐ (8) Publication of periodicals or newsletters
- ☐ (9) Security ratings or pricing services
- ☐ (10) Market timing services
- ☐ (11) Educational seminars/workshops
- ☒ (12) Other(specify): INVESTMENT & ASSET MANAGEMENT CONSULTING AND EDUCATION

Do not check Item 5.G.(3) unless you provide advisory services pursuant to an investment advisory contract to an investment company registered under the Investment Company Act of 1940, including as a subadviser. If you check Item 5.G.(3), report the 811 or 814 number of the investment company or investment companies to which you provide advice in Section 5.G.(3) of Schedule D.

H. If you provide financial planning services, to how many *clients* did you provide these services during your last fiscal year?

- ☐ 0
- ☐ 1 - 10
- ☐ 11 - 25
- ☐ 26 - 50
- ☐ 51 - 100
- ☐ 101 - 250
- ☐ 251 - 500
- ☐ More than 500

If more than 500, how many?
(round to the nearest 500)

In your responses to this Item 5.H., do not include as "clients" the investors in a private fund you advise, unless you have a separate advisory relationship with those investors.

I. If you participate in a *wrap fee program*, do you (check all that apply):

- ☐ (1) sponsor the *wrap fee program*?
- ☐ (2) act as a portfolio manager for the *wrap fee program*?

If you are a portfolio manager for a wrap fee program, list the names of the programs and their sponsors in Section 5.I.(2) of Schedule D.

If your involvement in a wrap fee program is limited to recommending wrap fee programs to your clients, or you advise a mutual fund that is offered through a wrap fee program, do not check either Item 5.I.(1) or 5.I.(2).

Yes No

- J. In response to Item 4.B. of Part 2A of Form ADV, do you indicate that you provide investment advice only with respect to limited types of investments?

☐ ☒**SECTION 5.G.(3) Advisers to Registered Investment Companies and Business Development Companies**

If you check Item 5.G.(3), what is the SEC file number (811 or 814 number) of each of the registered investment companies and business development companies to which you act as an adviser pursuant to an advisory contract? You must complete a separate Schedule D Section 5.G.(3) for each registered investment company and business development company to which you act as an adviser.

SEC File Number 811-22838

SECTION 5.I.(2) Wrap Fee Programs

No Information Filed

Item 6 Other Business Activities

In this Item, we request information about your firm's other business activities.

A. You are actively engaged in business as a (check all that apply):

- ☐ (1) broker-dealer (registered or unregistered)
- ☐ (2) registered representative of a broker-dealer
- ☐ (3) commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- ☐ (4) futures commission merchant
- ☐ (5) real estate broker, dealer, or agent
- ☐ (6) insurance broker or agent
- ☐ (7) bank (including a separately identifiable department or division of a bank)
- ☐ (8) trust company
- ☐ (9) registered municipal advisor
- ☐ (10) registered security-based swap dealer
- ☐ (11) major security-based swap participant
- ☐ (12) accountant or accounting firm
- ☐ (13) lawyer or law firm
- ☐ (14) other financial product salesperson (specify):

If you engage in other business using a name that is different from the names reported in Items 1.A. or 1.B, complete Section 6.A. of Schedule D.

Yes No

- B. (1) Are you actively engaged in any other business not listed in Item 6.A. (other than giving investment advice)? ☐ ☐
- (2) If yes, is this other business your primary business? ☐ ☐

If "yes," describe this other business on Section 6.B.(2) of Schedule D, and if you engage in this business under a different name, provide that name.

Yes No

- (3) Do you sell products or provide services other than investment advice to your advisory clients? ☐ ☐

If "yes," describe this other business on Section 6.B.(3) of Schedule D, and if you engage in this business under a different name, provide that name.

SECTION 6.A. Names of Your Other Businesses

No Information Filed

SECTION 6.B.(2) Description of Primary Business

Describe your primary business (not your investment advisory business):

If you engage in that business under a different name, provide that name:

SECTION 6.B.(3) Description of Other Products and Services

Describe other products or services you sell to your *client*, You may omit products and services that you listed in Section 6.B.(2) above.

If you engage in that business under a different name, provide that name.

Item 7 Financial Industry Affiliations

In this Item, we request information about your financial industry affiliations and activities. This information identifies areas in which conflicts of interest may occur between you and your *clients*.

- A. This part of Item 7 requires you to provide information about you and your *related persons*, including foreign affiliates. Your *related persons* are all of your *advisory affiliates* and any *person* that is under common *control* with you.

You have a *related person* that is a (check all that apply):

- ☐ (1) broker-dealer, municipal securities dealer, or government securities broker or dealer (registered or unregistered)
- ☒ (2) other investment adviser (including financial planners)
- ☐ (3) registered municipal advisor
- ☐ (4) registered security-based swap dealer
- ☐ (5) major security-based swap participant
- ☐ (6) commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- ☐ (7) futures commission merchant
- ☐ (8) banking or thrift institution
- ☐ (9) trust company
- ☐ (10) accountant or accounting firm
- ☐ (11) lawyer or law firm
- ☐ (12) insurance company or agency
- ☐ (13) pension consultant
- ☐ (14) real estate broker or dealer
- ☒ (15) sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
- ☒ (16) sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

For each *related person*, including foreign affiliates that may not be registered or required to be registered in the United States, complete Section 7.A. of Schedule D.

You do not need to complete Section 7.A. of Schedule D for any *related person* if: (1) you have no business dealings with the *related person* in connection with advisory services you provide to your *clients*; (2) you do not conduct shared operations with the *related person*; (3) you do not refer *clients* or business to the *related person*, and the *related person* does not refer prospective *clients* or business to you; (4) you do not share supervised persons or premises with the *related person*; and (5) you have no reason to believe that your relationship with the *related person* otherwise creates a conflict of interest with your *clients*.

You must complete Section 7.A. of Schedule D for each *related person* acting as qualified custodian in connection with advisory services you provide to your *clients* (other than any mutual fund transfer agent pursuant to rule 206(4)-2(b)(1)), regardless of whether you have determined the *related person* to be operationally independent under rule 206(4)-2 of the Advisers Act.

SECTION 7.A. Financial Industry Affiliations

Complete a separate Schedule D Section 7.A. for each *related person* listed in Item 7.A.

1. Legal Name of *Related Person*:
SHARPE 4 CAPITAL, LLC

2. Primary Business Name of *Related Person*:

SHARPE 4 CAPITAL, LLC

3. *Related Person's* SEC File Number (if any) (e.g., 801-, 8-, 866-, 802-)

801 - 71478

or

Other

4. *Related Person's* CRD Number (if any):

133627

5. *Related Person* is: (check all that apply)

- (a) ☐ broker-dealer, municipal securities dealer, or government securities broker or dealer
- (b) ☒ other investment adviser (including financial planners)
- (c) ☐ registered municipal advisor
- (d) ☐ registered security-based swap dealer
- (e) ☐ major security-based swap participant
- (f) ☐ commodity pool operator or commodity trading advisor (whether registered or exempt from registration)
- (g) ☐ futures commission merchant
- (h) ☐ banking or thrift institution
- (i) ☐ trust company
- (j) ☐ accountant or accounting firm
- (k) ☐ lawyer or law firm
- (l) ☐ insurance company or agency
- (m) ☐ pension consultant
- (n) ☐ real estate broker or dealer
- (o) ☐ sponsor or syndicator of limited partnerships (or equivalent), excluding pooled investment vehicles
- (p) ☒ sponsor, general partner, managing member (or equivalent) of pooled investment vehicles

Yes No

6. Do you *control* or are you *controlled* by the *related person*?☐ ☒7. Are you and the *related person* under common *control*?☐ ☒8. (a) Does the *related person* act as a qualified custodian for your *clients* in connection with advisory services you provide to *clients*?☐ ☒

- (b) If you are registering or registered with the SEC and you have answered "yes," to question 8(a) above, have you overcome the presumption that you are not operationally independent (pursuant to rule 206(4)-(2)(d)(5)) from the *related person* and thus are not required to obtain a surprise examination for your *clients'* funds or securities that are maintained at the *related person*?

☐ ☒

- (c) If you have answered "yes" to question 8.(a) above, provide the location of the *related person's* office responsible for *custody* of your *clients'* assets:

Number and Street 1:

Number and Street 2:

City:

State:

Country:

ZIP+4/Postal Code:

If this address is a private residence, check this box: ☐

Yes No

9. (a) If the *related person* is an investment adviser, is it exempt from registration?☐ ☒

(b) If the answer is yes, under what exemption?

10. (a) Is the *related person* registered with a *foreign financial regulatory authority* ?



(b) If the answer is yes, list the name and country, in English, of each *foreign financial regulatory authority* with which the *related person* is registered.

No Information Filed

11. Do you and the *related person* share any *supervised persons*?



12. Do you and the *related person* share the same physical location?



Item 7 Private Fund Reporting

Yes No

B. Are you an adviser to any *private fund*?



If "yes," then for each *private fund* that you advise, you must complete a Section 7.B.(1) of Schedule D, except in certain circumstances described in the next sentence and in Instruction 6 of the Instructions to Part 1A. If another adviser reports this information with respect to any such *private fund* in Section 7.B.(1) of Schedule D of its Form ADV (e.g., if you are a subadviser), do not complete Section 7.B.(1) of Schedule D with respect to that *private fund*. You must, instead, complete Section 7.B.(2) of Schedule D.

In either case, if you seek to preserve the anonymity of a *private fund* client by maintaining its identity in your books and records in numerical or alphabetical code, or similar designation, pursuant to rule 204-2(d), you may identify the *private fund* in Section 7.B.(1) or 7.B.(2) of Schedule D using the same code or designation in place of the fund's name.

SECTION 7.B.(1) Private Fund Reporting

A. PRIVATE FUND

Information About the Private Fund

1. (a) Name of the *private fund*:

DIVERSIFIED ALPHA GROUP TRUST

(b) *Private fund* identification number:

(include the "805-" prefix also)

805-1186792519

2. Under the laws of what state or country is the *private fund* organized:

State:

Pennsylvania

Country:

United States

3. Name(s) of General Partner, Manager, Trustee, or Directors (or persons serving in a similar capacity):

Name of General Partner, Manager, Trustee, or Director
CALLAN ASSOCIATES INC.

4. The *private fund* (check all that apply; you must check at least one):

☒ (1) qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940

☒ (2) qualifies for the exclusion from the definition of investment company under section 3(c)(7) of the Investment Company Act of 1940

5. List the name and country, in English, of each *foreign financial regulatory authority* with which the *private fund* is registered.

No Information Filed

Yes No

6. (a) Is this a "master fund" in a master-feeder arrangement?

☐ ☒

(b) If yes, what is the name and *private fund* identification number (if any) of the feeder funds investing in this *private fund*?

No Information Filed

Yes No

- (c) Is this a "feeder fund" in a master-feeder arrangement?

☐ ☒

(d) If yes, what is the name and *private fund* identification number (if any) of the master fund in which this *private fund* invests?

Name of the *Private Fund*:

Private Fund Identification Number:

(include the "805-" prefix also)

NOTE: You must complete question 6 for each master-feeder arrangement regardless of whether you are filing a single Schedule D, Section 7.B.(1). for the master-feeder arrangement or reporting on the funds separately.

7. If you are filing a single Schedule D, Section 7.B.(1) for a master-feeder arrangement according to the instructions to this Section 7.B.(1), for each of the feeder funds answer the following questions:

No Information Filed

NOTE: For purposes of questions 6 and 7, in a master-feeder arrangement, one or more funds ("feeder funds") invest all or substantially all of their assets in a single fund ("master fund"). A fund would also be a "feeder fund" investing in a "master fund" for purposes of this question if it issued multiple classes

(or series) of shares or interests, and each class (or series) invests substantially all of its assets in a single master fund.

Yes No

8. (a) Is this *private fund* a "fund of funds"? ☒ Yes ☐ No
- (b) If yes, does the *private fund* invest in funds managed by you or by a *related person*? ☐ Yes ☒ No

NOTE: For purposes of this question only, answer "yes" if the fund invests 10 percent or more of its total assets in other pooled investment vehicles, whether or not they are also *private funds*, or registered investment companies.

Yes No

9. During your last fiscal year, did the *private fund* invest in securities issued by investment companies registered under the Investment Company Act of 1940 (other than "money market funds," to the extent provided in Instruction 6.e.)? ☒ Yes ☐ No

10. What type of fund is the *private fund*?

☐ hedge fund ☐ liquidity fund ☐ private equity fund ☐ real estate fund ☐ securitized asset fund
☐ venture capital fund ☒ Other *private fund* A COMMON TRUST FUND OF FUNDS DOMESTIC SMALL CAP PUBLICLY TRADED SECURITIES

NOTE: For funds of funds, refer to the funds in which the *private fund* invests. For definitions of these fund types, please see Instruction 6 of the Instructions to Part 1A.

11. Current gross asset value of the *private fund*:
 \$ 502,205,594

Ownership

12. Minimum investment commitment required of an investor in the *private fund*:
 \$ 50,000,000

NOTE: Report the amount routinely required of investors who are not your *related persons* (even if different from the amount set forth in the organizational documents of the fund).

13. Approximate number of the *private fund's* beneficial owners:
 3

14. What is the approximate percentage of the *private fund* beneficially owned by you and your *related persons*:
 0%

15. What is the approximate percentage of the *private fund* beneficially owned (in the aggregate) by funds of funds:
 0%

16. What is the approximate percentage of the *private fund* beneficially owned by non-*United States* persons:
0%

Your Advisory Services

17. (a) Are you a subadviser to this *private fund*? Yes No
☐ ☒

(b) If the answer to question 17(a) is "yes," provide the name and SEC file number, if any, of the adviser of the *private fund*. If the answer to question 17(a) is "no," leave this question blank.

No Information Filed

18. (a) Do any other investment advisers advise the *private fund*? Yes No
☐ ☒

(b) If the answer to question 18(a) is "yes," provide the name and SEC file number, if any, of the other advisers to the *private fund*. If the answer to question 18(a) is "no," leave this question blank.

No Information Filed

19. Are your *clients* solicited to invest in the *private fund*? Yes No
☐ ☒

20. Approximately what percentage of your *clients* has invested in the *private fund*?
0%

Private Offering

21. Does the *private fund* rely on an exemption from registration of its securities under Regulation D of the Securities Act of 1933? Yes No
☐ ☒

22. If yes, provide the *private fund's* Form D file number (if any):

No Information Filed

B. SERVICE PROVIDERS**Auditors**

23. (a) (1) Are the *private fund's* financial statements subject to an annual audit? Yes No
☒ ☐
(2) Are the financial statements prepared in accordance with U.S. GAAP? ☒ ☐

If the answer to 23(a)(1) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

Additional Auditor Information : 1 Record(s) Filed.

If the answer to 23(a)(1) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

(b) Name of the auditing firm:

GRANT THORNTON LLP

(c) The location of the auditing firm's office responsible for the *private fund*'s audit (city, state and country):

City:

NEW YORK

State:

New York

Country:

United States

Yes No

(d) Is the auditing firm an *independent public accountant*?

☒ ☐

(e) Is the auditing firm registered with the Public Company Accounting Oversight Board?

☒ ☐

(f) If "yes" to (e) above, is the auditing firm subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?

☒ ☐

Yes No

(g) Are the *private fund*'s audited financial statements distributed to the *private fund*'s investors?

☒ ☐

(h) Does the report prepared by the auditing firm contain an unqualified opinion?

☒ Yes ☐ No ☐ Report Not Yet Received

If you check "Report Not Yet Received," you must promptly file an amendment to your Form ADV to update your response when the report is available.

Prime Broker

Yes No

24. (a) Does the *private fund* use one or more prime brokers?



☐ ☒

If the answer to 24(a) is "yes," respond to questions (b) through (e) below for each prime broker the *private fund* uses. If the *private fund* uses more than one prime broker, you must complete questions (b) through (e) separately for each prime broker.

No Information Filed

Custodian

Yes No

25. (a) Does the *private fund* use any custodians (including the prime brokers listed above) to hold some or all of its assets?  

If the answer to 25(a) is "yes," respond to questions (b) through (f) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (f) separately for each custodian.

Additional Custodian Information : 1 Record(s) Filed.

If the answer to 25(a) is "yes," respond to questions (b) through (f) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (f) separately for each custodian.

(b) Legal name of custodian:
BNY MELLON

(c) Primary business name of custodian:
BNY MELLON

(d) The location of the custodian's office responsible for *custody* of the *private fund's* assets (city, state and country):

City:
EVERETT

State:
Massachusetts

Country:
United States

Yes No



(e) Is the custodian a *related person* of your firm?  

(f) If the custodian is a broker-dealer, provide its SEC registration number (if any)

CRD Number (if any):

Administrator

Yes No

26. (a) Does the *private fund* use an administrator other than your firm?  

If the answer to 26(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

Additional Administrator Information : 1 Record(s) Filed.

If the answer to 26(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

(b) Name of the administrator:

BNY MELLON

(c) Location of administrator (city, state and country):

City:

EVERETT

State:

Massachusetts

Country:

United States

Yes No

(d) Is the administrator a *related person* of your firm?

☐ Yes ☒ No

(e) Does the administrator prepare and send investor account statements to the *private fund's* investors?

☒ Yes (provided to all investors) ☐ Some (provided to some but not all investors) ☐ No (provided to no investors)

(f) If the answer to 26(e) is "no" or "some," who sends the investor account statements to the (rest of the) *private fund's* investors? If investor account statements are not sent to the (rest of the) *private fund's* investors, respond "not applicable."

27. During your last fiscal year, what percentage of the *private fund's* assets (by value) was valued by a *person*, such as an administrator, that is not your *related person*?

100%

Include only those assets where (i) such person carried out the valuation procedure established for that asset, if any, including obtaining any relevant quotes, and (ii) the valuation used for purposes of investor subscriptions, redemptions or distributions, and fee calculations (including allocations) was the valuation determined by such person.

Marketers

Yes No

28. (a) Does the *private fund* use the services of someone other than you or your *employees* for marketing purposes?

☐ Yes ☒ No

You must answer "yes" whether the person acts as a placement agent, consultant, finder, introducer, municipal advisor or other solicitor, or similar person. If the answer to 28(a) is "yes", respond to questions (b) through (g) below for each such marketer the *private fund* uses. If the *private fund* uses more than one marketer you must complete questions (b) through (g) separately for each marketer.

No Information Filed

A. PRIVATE FUND

Information About the Private Fund

1. (a) Name of the
- private fund*
- :

MICRO CAP VALUE FUND

- (b)
- Private fund*
- identification number:

(include the "805-" prefix also)

805-8863264280

2. Under the laws of what state or country is the
- private fund*
- organized:

State:

Delaware

Country:

United States

3. Name(s) of General Partner, Manager, Trustee, or Directors (or persons serving in a similar capacity):

No Information Filed

4. The
- private fund*
- (check all that apply; you must check at least one):

☒ (1) qualifies for the exclusion from the definition of investment company under section 3(c)(1) of the Investment Company Act of 1940☒ (2) qualifies for the exclusion from the definition of investment company under section 3(c)(7) of the Investment Company Act of 1940

5. List the name and country, in English, of each
- foreign financial regulatory authority*
- with which the
- private fund*
- is registered.

No Information Filed

6. (a) Is this a "master fund" in a master-feeder arrangement?

Yes No

☐ ☐

- (b) If yes, what is the name and
- private fund*
- identification number (if any) of the feeder funds investing in this
- private fund*
- ?

No Information Filed

- (c) Is this a "feeder fund" in a master-feeder arrangement?

Yes No

☐ ☐

- (d) If yes, what is the name and
- private fund*
- identification number (if any) of the master fund in which this
- private fund*
- invests?

Name of the *Private Fund*:*Private Fund* Identification Number:

(include the "805-" prefix also)

NOTE: You must complete question 6 for each master-feeder arrangement regardless of whether you are filing a single Schedule D, Section 7.B.(1). for the master-feeder arrangement or reporting on the funds separately.

7. If you are filing a single Schedule D, Section 7.B.(1) for a master-feeder arrangement according to the instructions to this Section 7.B.(1), for each of the feeder funds answer the following questions:

No Information Filed

NOTE: For purposes of questions 6 and 7, in a master-feeder arrangement, one or more funds ("feeder funds") invest all or substantially all of their assets in a single fund ("master fund"). A fund would also be a "feeder fund" investing in a "master fund" for purposes of this question if it issued multiple classes (or series) of shares or interests, and each class (or series) invests substantially all of its assets in a single master fund.

- | | Yes | No |
|---|-----------------------|-----------------------|
| 8. (a) Is this <i>private fund</i> a "fund of funds"? | <input type="radio"/> | <input type="radio"/> |
| (b) If yes, does the <i>private fund</i> invest in funds managed by you or by a <i>related person</i> ? | <input type="radio"/> | <input type="radio"/> |

NOTE: For purposes of this question only, answer "yes" if the fund invests 10 percent or more of its total assets in other pooled investment vehicles, whether or not they are also *private funds*, or registered investment companies.

- | | Yes | No |
|---|-----------------------|-----------------------|
| 9. During your last fiscal year, did the <i>private fund</i> invest in securities issued by investment companies registered under the Investment Company Act of 1940 (other than "money market funds," to the extent provided in Instruction 6.e.)? | <input type="radio"/> | <input type="radio"/> |
10. What type of fund is the *private fund*?

☐ hedge fund ☐ liquidity fund ☐ private equity fund ☐ real estate fund ☐ securitized asset fund
☐ venture capital fund ☒ Other *private fund* A DELAWARE STATUTORY TRUST OF PUBLICLY TRADED EQUITY SECURITIES.

NOTE: For funds of funds, refer to the funds in which the *private fund* invests. For definitions of these fund types, please see Instruction 6 of the Instructions to Part 1A.

11. Current gross asset value of the *private fund*:
 \$ 160,536,675

Ownership

12. Minimum investment commitment required of an investor in the *private fund*:
 \$ 25,000,000

NOTE: Report the amount routinely required of investors who are not your *related persons* (even if different from the amount set forth in the organizational documents of the fund).

13. Approximate number of the *private fund's* beneficial owners:

1

14. What is the approximate percentage of the *private fund* beneficially owned by you and your *related persons*:

0%

15. What is the approximate percentage of the *private fund* beneficially owned (in the aggregate) by funds of funds:

0%

16. What is the approximate percentage of the *private fund* beneficially owned by non-*United States persons*:

0%

Your Advisory Services

Yes No

17. (a) Are you a subadviser to this *private fund*?

☐ ☒

(b) If the answer to question 17(a) is "yes," provide the name and SEC file number, if any, of the adviser of the *private fund*. If the answer to question 17(a) is "no," leave this question blank.

No Information Filed

Yes No

18. (a) Do any other investment advisers advise the *private fund*?

☐ ☒

(b) If the answer to question 18(a) is "yes," provide the name and SEC file number, if any, of the other advisers to the *private fund*. If the answer to question 18(a) is "no," leave this question blank.

No Information Filed

Yes No

19. Are your *clients* solicited to invest in the *private fund*?

☐ ☒

20. Approximately what percentage of your *clients* has invested in the *private fund*?

0%

Private Offering

Yes No

21. Does the *private fund* rely on an exemption from registration of its securities under Regulation D of the Securities Act of 1933?

☒ ☐

22. If yes, provide the *private fund's* Form D file number (if any):

Form D file number

021-196548

B. SERVICE PROVIDERS**Auditors****Yes No**23. (a) (1) Are the *private fund's* financial statements subject to an annual audit?☒ ☐

(2) Are the financial statements prepared in accordance with U.S. GAAP?

☒ ☐

If the answer to 23(a)(1) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

Additional Auditor Information : 1 Record(s) Filed.

If the answer to 23(a)(1) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one auditing firm, you must complete questions (b) through (f) separately for each auditing firm.

(b) Name of the auditing firm:

GRANT THORNTON LLP

(c) The location of the auditing firm's office responsible for the *private fund's* audit (city, state and country):

City:

NEW YORK

State:

New York

Country:

United States

Yes No(d) Is the auditing firm an *independent public accountant*?☒ ☐

(e) Is the auditing firm registered with the Public Company Accounting Oversight Board?

☒ ☐

(f) If "yes" to (e) above, is the auditing firm subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?

☒ ☐**Yes No**(g) Are the *private fund's* audited financial statements distributed to the *private fund's* investors?☒ ☐

(h) Does the report prepared by the auditing firm contain an unqualified opinion?

☒ Yes ☐ No ☐ Report Not Yet Received

If you check "Report Not Yet Received," you must promptly file an amendment to your Form ADV to update your response when the report is available.

Prime Broker**Yes No**

24. (a) Does the
- private fund*
- use one or more prime brokers?

☐ ☐

If the answer to 24(a) is "yes," respond to questions (b) through (e) below for each prime broker the *private fund* uses. If the *private fund* uses more than one prime broker, you must complete questions (b) through (e) separately for each prime broker.

No Information Filed

Custodian**Yes No**

25. (a) Does the
- private fund*
- use any custodians (including the prime brokers listed above) to hold some or all of its assets?

☐ ☐

If the answer to 25(a) is "yes," respond to questions (b) through (f) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (f) separately for each custodian.

Additional Custodian Information : 1 Record(s) Filed.

If the answer to 25(a) is "yes," respond to questions (b) through (f) below for each custodian the *private fund* uses. If the *private fund* uses more than one custodian, you must complete questions (b) through (f) separately for each custodian.

(b) Legal name of custodian:
BNY MELLON

(c) Primary business name of custodian:
BNY MELLON

(d) The location of the custodian's office responsible for *custody* of the *private fund*'s assets (city, state and country):

City:	State:	Country:
EVERETT	Massachusetts	United States

Yes No

(e) Is the custodian a *related person* of your firm?

☐ ☐

(f) If the custodian is a broker-dealer, provide its SEC registration number (if any)

-

CRD Number (if any):

Administrator**Yes No**

26. (a) Does the
- private fund*
- use an administrator other than your firm?

☒ ☐

If the answer to 26(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

Additional Administrator Information : 1 Record(s) Filed.

If the answer to 26(a) is "yes," respond to questions (b) through (f) below. If the *private fund* uses more than one administrator, you must complete questions (b) through (f) separately for each administrator.

- (b) Name of the administrator:

BNY MELLON

- (c) Location of administrator (city, state and country):

City:

EVERETT

State:

Massachusetts

Country:

United States

Yes No

- (d) Is the administrator a
- related person*
- of your firm?

☐ ☒

- (e) Does the administrator prepare and send investor account statements to the
- private fund's*
- investors?

☒ Yes (provided to all investors) ☐ Some (provided to some but not all investors) ☐ No (provided to no investors)

- (f) If the answer to 26(e) is "no" or "some," who sends the investor account statements to the (rest of the)
- private fund's*
- investors? If investor account statements are not sent to the (rest of the)
- private fund's*
- investors, respond "not applicable."

27. During your last fiscal year, what percentage of the
- private fund's*
- assets (by value) was valued by a
- person*
- , such as an administrator, that is not your
- related person*
- ?

100%

Include only those assets where (i) such person carried out the valuation procedure established for that asset, if any, including obtaining any relevant quotes, and (ii) the valuation used for purposes of investor subscriptions, redemptions or distributions, and fee calculations (including allocations) was the valuation determined by such person.

Marketers

Yes No

28. (a) Does the *private fund* use the services of someone other than you or your *employees* for marketing purposes? ☐ ☒

You must answer "yes" whether the person acts as a placement agent, consultant, finder, introducer, municipal advisor or other solicitor, or similar person. If the answer to 28(a) is "yes", respond to questions (b) through (g) below for each such marketer the *private fund* uses. If the *private fund* uses more than one marketer you must complete questions (b) through (g) separately for each marketer.

No Information Filed

SECTION 7.B.(2) Private Fund Reporting

No Information Filed

Item 8 Participation or Interest in *Client* Transactions

In this Item, we request information about your participation and interest in your *clients'* transactions. This information identifies additional areas in which conflicts of interest may occur between you and your *clients*.

Like Item 7, Item 8 requires you to provide information about you and your *related persons*, including foreign affiliates.

Proprietary Interest in *Client* Transactions

- | A. Do you or any <i>related person</i> : | Yes | No |
|--|-----------------------|-----------------------|
| (1) buy securities for yourself from advisory <i>clients</i> , or sell securities you own to advisory <i>clients</i> (principal transactions)? | <input type="radio"/> | <input type="radio"/> |
| (2) buy or sell for yourself securities (other than shares of mutual funds) that you also recommend to advisory <i>clients</i> ? | <input type="radio"/> | <input type="radio"/> |
| (3) recommend securities (or other investment products) to advisory <i>clients</i> in which you or any <i>related person</i> has some other proprietary (ownership) interest (other than those mentioned in Items 8.A.(1) or (2))? | <input type="radio"/> | <input type="radio"/> |

Sales Interest in *Client* Transactions

- | B. Do you or any <i>related person</i> : | Yes | No |
|--|-----------------------|-----------------------|
| (1) as a broker-dealer or registered representative of a broker-dealer, execute securities trades for brokerage customers in which advisory <i>client</i> securities are sold to or bought from the brokerage customer (agency cross transactions)? | <input type="radio"/> | <input type="radio"/> |
| (2) recommend purchase of securities to advisory <i>clients</i> for which you or any <i>related person</i> serves as underwriter, general or managing partner, or purchaser representative? | <input type="radio"/> | <input type="radio"/> |
| (3) recommend purchase or sale of securities to advisory <i>clients</i> for which you or any <i>related person</i> has any other sales interest (other than the receipt of sales commissions as a broker or registered representative of a broker-dealer)? | <input type="radio"/> | <input type="radio"/> |

Investment or Brokerage Discretion

- | C. Do you or any <i>related person</i> have <i>discretionary authority</i> to determine the: | Yes | No |
|---|-----------------------|-----------------------|
| (1) securities to be bought or sold for a <i>client's</i> account? | <input type="radio"/> | <input type="radio"/> |
| (2) amount of securities to be bought or sold for a <i>client's</i> account? | <input type="radio"/> | <input type="radio"/> |
| (3) broker or dealer to be used for a purchase or sale of securities for a <i>client's</i> account? | <input type="radio"/> | <input type="radio"/> |
| (4) commission rates to be paid to a broker or dealer for a <i>client's</i> securities transactions? | <input type="radio"/> | <input type="radio"/> |
| D. If you answer "yes" to C.(3) above, are any of the brokers or dealers <i>related persons</i> ? | <input type="radio"/> | <input type="radio"/> |
| E. Do you or any <i>related person</i> recommend brokers or dealers to <i>clients</i> ? | <input type="radio"/> | <input type="radio"/> |
| F. If you answer "yes" to E above, are any of the brokers or dealers <i>related persons</i> ? | <input type="radio"/> | <input type="radio"/> |
| G. (1) Do you or any <i>related person</i> receive research or other products or services other than execution from a broker-dealer or a third party ("soft dollar benefits") in connection with <i>client</i> securities transactions? | <input type="radio"/> | <input type="radio"/> |
| (2) If "yes" to G.(1) above, are all the "soft dollar benefits" you or any <i>related persons</i> receive eligible "research or brokerage services" under section 28(e) of the Securities Exchange Act of 1934? | <input type="radio"/> | <input type="radio"/> |

H. Do you or any *related person*, directly or indirectly, compensate any *person* for *client* referrals?



I. Do you or any *related person*, directly or indirectly, receive compensation from any *person* for *client* referrals?



In responding to Items 8.H and 8.I., consider all cash and non-cash compensation that you or a related person gave to (in answering Item 8.H) or received from (in answering Item 8.I) any person in exchange for client referrals, including any bonus that is based, at least in part, on the number or amount of client referrals.

Item 9 Custody

In this Item, we ask you whether you or a *related person* has *custody of client* (other than *clients* that are investment companies registered under the Investment Company Act of 1940) assets and about your custodial practices.

- | | | |
|----|--|--|
| A. | (1) Do you have <i>custody</i> of any advisory <i>clients</i> ': | Yes No |
| | (a) cash or bank accounts? | <input type="radio"/> <input checked="" type="radio"/> |
| | (b) securities? | <input checked="" type="radio"/> <input type="radio"/> |

If you are registering or registered with the SEC, answer "No" to Item 9.A.(1)(a) and (b) if you have custody solely because (i) you deduct your advisory fees directly from your clients' accounts, or (ii) a related person has custody of client assets in connection with advisory services you provide to clients, but you have overcome the presumption that you are not operationally independent (pursuant to Advisers Act rule 206(4)-(2)(d)(5)) from the related person.

- (2) If you checked "yes" to Item 9.A.(1)(a) or (b), what is the approximate amount of *client* funds and securities and total number of *clients* for which you have *custody*:

U.S. Dollar Amount	Total Number of <i>Clients</i>
(a) \$ 1,146,918,688	(b) 3

If you are registering or registered with the SEC and you have custody solely because you deduct your advisory fees directly from your clients' accounts, do not include the amount of those assets and the number of those clients in your response to Item 9.A.(2). If your related person has custody of client assets in connection with advisory services you provide to clients, do not include the amount of those assets and number of those clients in your response to 9.A.(2). Instead, include that information in your response to Item 9.B.(2).

- | | | |
|----|--|--|
| B. | (1) In connection with advisory services you provide to <i>clients</i> , do any of your <i>related persons</i> have <i>custody</i> of any of your advisory <i>clients</i> ': | Yes No |
| | (a) cash or bank accounts? | <input type="radio"/> <input checked="" type="radio"/> |
| | (b) securities? | <input type="radio"/> <input checked="" type="radio"/> |

You are required to answer this item regardless of how you answered Item 9.A.(1)(a) or (b).

- (2) If you checked "yes" to Item 9.B.(1)(a) or (b), what is the approximate amount of *client* funds and securities and total number of *clients* for which your *related persons* have *custody*:

U.S. Dollar Amount	Total Number of <i>Clients</i>
(a) \$	(b)

- C. If you or your *related persons* have *custody of client* funds or securities in connection with advisory services you provide to *clients*, check all the following that apply:

- | | |
|---|-------------------------------------|
| (1) A qualified custodian(s) sends account statements at least quarterly to the investors in the pooled investment vehicle(s) you manage. | <input checked="" type="checkbox"/> |
| (2) An independent public accountant audits annually the pooled investment vehicle(s) that you manage and the audited financial statements are distributed to the investors in the pools. | <input checked="" type="checkbox"/> |

- (3) An *independent public accountant* conducts an annual surprise examination of *client* funds and securities. ☒
- (4) An *independent public accountant* prepares an internal control report with respect to custodial services when you or your *related persons* are qualified custodians for *client* funds and securities. ☐

If you checked Item 9.C.(2), C.(3) or C.(4), list in Section 9.C. of Schedule D the accountants that are engaged to perform the audit or examination or prepare an internal control report. (If you checked Item 9.C.(2), you do not have to list auditor information in Section 9.C. of Schedule D if you already provided this information with respect to the private funds you advise in Section 7.B.(1) of Schedule D).

- D. Do you or your *related person(s)* act as qualified custodians for your *clients* in connection with advisory services you provide to *clients*? **Yes No**
- (1) you act as a qualified custodian ☐ ☒
- (2) your *related person(s)* act as qualified custodian(s) ☐ ☒

If you checked "yes" to Item 9.D.(2), all related persons that act as qualified custodians (other than any mutual fund transfer agent pursuant to rule 206(4)-2(b)(1)) must be identified in Section 7.A. of Schedule D, regardless of whether you have determined the related person to be operationally independent under rule 206(4)-2 of the Advisers Act.



- E. If you are filing your *annual updating amendment* and you were subject to a surprise examination by an *independent public accountant* during your last fiscal year, provide the date (MM/YYYY) the examination commenced:
- F. If you or your *related persons* have *custody* of *client* funds or securities, how many persons, including, but not limited to, you and your *related persons*, act as qualified custodians for your *clients* in connection with advisory services you provide to *clients*?
- 1



SECTION 9.C. Independent Public Accountant

You must complete the following information for each *independent public accountant* engaged to perform a surprise examination, perform an audit of a pooled investment vehicle that you manage, or prepare an internal control report. You must complete a separate Schedule D Section 9.C. for each *independent public accountant*.

- (1) Name of the *independent public accountant*:
GRANT THORNTON LLP
- (2) The location of the *independent public accountant's* office responsible for the services provided:
- | | | | |
|----------------------|----------------------|---------------|--------------------|
| Number and Street 1: | Number and Street 2: | | |
| 60 BROAD STREET | | | |
| City: | State: | Country: | ZIP+4/Postal Code: |
| NEW YORK | New York | United States | 10004 |

Yes No

(3) Is the *independent public accountant* registered with the Public Company Accounting Oversight Board?  

(4) If yes to (3) above, is the *independent public accountant* subject to regular inspection by the Public Company Accounting Oversight Board in accordance with its rules?  


(5) The *independent public accountant* is engaged to:

- A. ☒ audit a pooled investment vehicle
- B. ☒ perform a surprise examination of *clients'* assets
- C. ☐ prepare an internal control report

(6) Does any report prepared by the *independent public accountant* that audited the pooled investment vehicle or that examined internal controls contain an unqualified opinion?

 Yes

 No

 Report Not Yet Received

If you check "Report Not Yet Received", you must promptly file an amendment to your Form ADV to update your response when the accountant's report is available.

Item 10 Control Persons

In this Item, we ask you to identify every *person* that, directly or indirectly, *controls* you.

If you are submitting an initial application or report, you must complete Schedule A and Schedule B. Schedule A asks for information about your direct owners and executive officers. Schedule B asks for information about your indirect owners. If this is an amendment and you are updating information you reported on either Schedule A or Schedule B (or both) that you filed with your initial application or report, you must complete Schedule C.

Yes No

- A. Does any *person* not named in Item 1.A. or Schedules A, B, or C, directly or indirectly, *control* your management or policies?

☐ ☐

If yes, complete Section 10.A. of Schedule D.

- B. If any *person* named in Schedules A, B, or C or in Section 10.A. of Schedule D is a public reporting company under Sections 12 or 15(d) of the Securities Exchange Act of 1934, please complete Section 10.B. of Schedule D.

SECTION 10.A. Control Persons

No Information Filed

SECTION 10.B. Control Person Public Reporting Companies

No Information Filed

Item 11 Disclosure Information

In this Item, we ask for information about your disciplinary history and the disciplinary history of all your *advisory affiliates*. We use this information to determine whether to grant your application for registration, to decide whether to revoke your registration or to place limitations on your activities as an investment adviser, and to identify potential problem areas to focus on during our on-site examinations. One event may result in "yes" answers to more than one of the questions below.

Your *advisory affiliates* are: (1) all of your current *employees* (other than *employees* performing only clerical, administrative, support or similar functions); (2) all of your officers, partners, or directors (or any *person* performing similar functions); and (3) all *persons* directly or indirectly *controlling* you or *controlled* by you. If you are a "separately identifiable department or division" (SID) of a bank, see the Glossary of Terms to determine who your *advisory affiliates* are.

If you are registered or registering with the SEC or if you are an exempt reporting adviser, you may limit your disclosure of any event listed in Item 11 to ten years following the date of the event. If you are registered or registering with a state, you must respond to the questions as posed; you may, therefore, limit your disclosure to ten years following the date of an event only in responding to Items 11.A.(1), 11.A.(2), 11.B.(1), 11.B.(2), 11.D.(4), and 11.H.(1)(a). For purposes of calculating this ten-year period, the date of an event is the date the final order, judgment, or decree was entered, or the date any rights of appeal from preliminary orders, judgments, or decrees lapsed.

You must complete the appropriate Disclosure Reporting Page ("DRP") for "yes" answers to the questions in this Item 11.

	Yes No
Do any of the events below involve you or any of your <i>supervised persons</i> ?	<input type="radio"/> <input type="radio"/>

For "yes" answers to the following questions, complete a Criminal Action DRP:

A. In the past ten years, have you or any <i>advisory affiliate</i> :	Yes No
(1) been convicted of or pled guilty or nolo contendere ("no contest") in a domestic, foreign, or military court to any <i>felony</i> ?	<input type="radio"/> <input type="radio"/>
(2) been <i>charged</i> with any <i>felony</i> ?	<input type="radio"/> <input type="radio"/>

If you are registered or registering with the SEC, or if you are reporting as an exempt reporting adviser, you may limit your response to Item 11.A.(2) to charges that are currently pending.

B. In the past ten years, have you or any <i>advisory affiliate</i> :	Yes No
(1) been convicted of or pled guilty or nolo contendere ("no contest") in a domestic, foreign, or military court to a <i>misdemeanor</i> involving: investments or an <i>investment-related</i> business, or any fraud, false statements, or omissions, wrongful taking of property, bribery, perjury, forgery, counterfeiting, extortion, or a conspiracy to commit any of these offenses?	<input type="radio"/> <input type="radio"/>
(2) been <i>charged</i> with a <i>misdemeanor</i> listed in Item 11.B.(1)?	<input type="radio"/> <input type="radio"/>

If you are registered or registering with the SEC, or if you are reporting as an exempt reporting adviser, you may limit your response to Item 11.B.(2) to charges that are currently pending.





For "yes" answers to the following questions, complete a Regulatory Action DRP:

C. Has the SEC or the Commodity Futures Trading Commission (CFTC) ever:	Yes No
(1) <i>found</i> you or any <i>advisory affiliate</i> to have made a false statement or omission?	<input type="radio"/> <input type="radio"/>

- (2) *found* you or any *advisory affiliate* to have been *involved* in a violation of SEC or CFTC regulations or statutes? ☐ ☐
- (3) *found* you or any *advisory affiliate* to have been a cause of an *investment-related* business having its authorization to do business denied, suspended, revoked, or restricted? ☐ ☐
- (4) entered an *order* against you or any *advisory affiliate* in connection with *investment-related* activity? ☐ ☐
- (5) imposed a civil money penalty on you or any *advisory affiliate*, or *ordered* you or any *advisory affiliate* to cease and desist from any activity? ☐ ☐
- D. Has any other federal regulatory agency, any state regulatory agency, or any *foreign financial regulatory authority*:
- (1) ever *found* you or any *advisory affiliate* to have made a false statement or omission, or been dishonest, unfair, or unethical? ☐ ☐
- (2) ever *found* you or any *advisory affiliate* to have been *involved* in a violation of *investment-related* regulations or statutes? ☐ ☐
- (3) ever *found* you or any *advisory affiliate* to have been a cause of an *investment-related* business having its authorization to do business denied, suspended, revoked, or restricted? ☐ ☐
- (4) in the past ten years, entered an *order* against you or any *advisory affiliate* in connection with an *investment-related* activity? ☐ ☐
- (5) ever denied, suspended, or revoked your or any *advisory affiliate's* registration or license, or otherwise prevented you or any *advisory affiliate*, by *order*, from associating with an *investment-related* business or restricted your or any *advisory affiliate's* activity? ☐ ☐
- E. Has any *self-regulatory organization* or commodities exchange ever:
- (1) *found* you or any *advisory affiliate* to have made a false statement or omission? ☐ ☐
- (2) *found* you or any *advisory affiliate* to have been *involved* in a violation of its rules (other than a violation designated as a "*minor rule violation*" under a plan approved by the SEC)? ☐ ☐
- (3) *found* you or any *advisory affiliate* to have been the cause of an *investment-related* business having its authorization to do business denied, suspended, revoked, or restricted? ☐ ☐
- (4) disciplined you or any *advisory affiliate* by expelling or suspending you or the *advisory affiliate* from membership, barring or suspending you or the *advisory affiliate* from association with other members, or otherwise restricting your or the *advisory affiliate's* activities? ☐ ☐
- F. Has an authorization to act as an attorney, accountant, or federal contractor granted to you or any *advisory affiliate* ever been revoked or suspended? ☐ ☐
- G. Are you or any *advisory affiliate* now the subject of any regulatory proceeding that could result in a "yes" answer to any part of Item 11.C., 11.D., or 11.E.? ☐ ☐

For "yes" answers to the following questions, complete a Civil Judicial Action DRP:

- H. (1) Has any domestic or foreign court:
- | | Yes | No |
|---|-----------------------|-----------------------|
| (a) in the past ten years, enjoined you or any <i>advisory affiliate</i> in connection with any <i>investment-related</i> activity? | <input type="radio"/> | <input type="radio"/> |
| (b) ever <i>found</i> that you or any <i>advisory affiliate</i> were <i>involved</i> in a violation of <i>investment-related</i> statutes or regulations? | <input type="radio"/> | <input type="radio"/> |

- (c) ever dismissed, pursuant to a settlement agreement, an *investment-related* civil action brought against you or any *advisory affiliate* by a state or *foreign financial regulatory authority*?  
- (2) Are you or any *advisory affiliate* now the subject of any civil proceeding that could result in a "yes" answer to any part of Item 11.H.(1)?  

Item 12 Small Businesses

The SEC is required by the Regulatory Flexibility Act to consider the effect of its regulations on small entities. In order to do this, we need to determine whether you meet the definition of "small business" or "small organization" under rule 0-7.

Answer this Item 12 only if you are registered or registering with the SEC **and** you indicated in response to Item 5.F.(2)(c) that you have regulatory assets under management of less than \$25 million. You are not required to answer this Item 12 if you are filing for initial registration as a state adviser, amending a current state registration, or switching from SEC to state registration.

For purposes of this Item 12 only:

- Total Assets refers to the total assets of a firm, rather than the assets managed on behalf of *clients*. In determining your or another *person's* total assets, you may use the total assets shown on a current balance sheet (but use total assets reported on a consolidated balance sheet with subsidiaries included, if that amount is larger).
- *Control* means the power to direct or cause the direction of the management or policies of a *person*, whether through ownership of securities, by contract, or otherwise. Any *person* that directly or indirectly has the right to vote 25 percent or more of the voting securities, or is entitled to 25 percent or more of the profits, of another *person* is presumed to *control* the other *person*.

Yes No

A. Did you have total assets of \$5 million or more on the last day of your most recent fiscal year?

☐ ☐

If "yes," you do not need to answer Items 12.B. and 12.C.

B. Do you:

(1) *control* another investment adviser that had regulatory assets under management (calculated in response to Item 5.F.(2)(c) of Form ADV) of \$25 million or more on the last day of its most recent fiscal year?

☐ ☐

(2) *control* another *person* (other than a natural person) that had total assets of \$5 million or more on the last day of its most recent fiscal year?

☐ ☐

C. Are you:

(1) *controlled* by or under common *control* with another investment adviser that had regulatory assets under management (calculated in response to Item 5.F.(2)(c) of Form ADV) of \$25 million or more on the last day of its most recent fiscal year?

☐ ☐

(2) *controlled* by or under common *control* with another *person* (other than a natural person) that had total assets of \$5 million or more on the last day of its most recent fiscal year?

☐ ☐

Schedule A**Direct Owners and Executive Officers**

1. Complete Schedule A only if you are submitting an initial application or report. Schedule A asks for information about your direct owners and executive officers. Use Schedule C to amend this information.
2. Direct Owners and Executive Officers. List below the names of:
 - (a) each Chief Executive Officer, Chief Financial Officer, Chief Operations Officer, Chief Legal Officer, Chief Compliance Officer (Chief Compliance Officer is required if you are registered or applying for registration and cannot be more than one individual), director, and any other individuals with similar status or functions;
 - (b) if you are organized as a corporation, each shareholder that is a direct owner of 5% or more of a class of your voting securities, unless you are a public reporting company (a company subject to Section 12 or 15(d) of the Exchange Act);
 Direct owners include any *person* that owns, beneficially owns, has the right to vote, or has the power to sell or direct the sale of, 5% or more of a class of your voting securities. For purposes of this Schedule, a *person* beneficially owns any securities: (i) owned by his/her child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, sharing the same residence; or (ii) that he/she has the right to acquire, within 60 days, through the exercise of any option, warrant, or right to purchase the security.
 - (c) if you are organized as a partnership, all general partners and those limited and special partners that have the right to receive upon dissolution, or have contributed, 5% or more of your capital;
 - (d) in the case of a trust that directly owns 5% or more of a class of your voting securities, or that has the right to receive upon dissolution, or has contributed, 5% or more of your capital, the trust and each trustee; and
 - (e) if you are organized as a limited liability company ("LLC"), (i) those members that have the right to receive upon dissolution, or have contributed, 5% or more of your capital, and (ii) if managed by elected managers, all elected managers.
3. Do you have any indirect owners to be reported on Schedule B? ☐ Yes ☒ No
4. In the DE/FE/I column below, enter "DE" if the owner is a domestic entity, "FE" if the owner is an entity incorporated or domiciled in a foreign country, or "I" if the owner or executive officer is an individual.
5. Complete the Title or Status column by entering board/management titles; status as partner, trustee, sole proprietor, elected manager, shareholder, or member; and for shareholders or members, the class of securities owned (if more than one is issued).
6. Ownership codes
 are:

NA - less than 5%	B - 10% but less than 25%	D - 50% but less than 75%
A - 5% but less than 10%	C - 25% but less than 50%	E - 75% or more
7. (a) In the *Control Person* column, enter "Yes" if the *person* has *control* as defined in the Glossary of Terms to Form ADV, and enter "No" if the *person* does not have *control*. Note that under this definition, most executive officers and all 25% owners, general partners, elected managers, and trustees are *control persons*.
 (b) In the PR column, enter "PR" if the owner is a public reporting company under Sections 12 or 15(d) of the Exchange Act.
 (c) Complete each column.

FULL LEGAL NAME (Individuals: Last Name, First Name, Middle Name)	DE/FE/I	Status	Date Status Acquired MM/YYYY	Ownership Code	Control Person	PR	CRD No. If None: S.S. No. and Date of Birth, IRS Tax No. or Employer ID No.
BONNETTE, DAVID, FRANCIS	I	DIRECTOR (ELECTED MANAGER)	04/2010	NA	Y	N	1593248

PEYTON, RONALD, DOUGLAS	I	EXECUTIVE CHAIRMAN & DIRECTOR (ELECTED MANAGER)	09/2017	NA	Y	N	362048
TAYLOR-HAMBLY, SUSAN, LYNN	I	SR. VP & CFO	12/2013	NA	Y	N	2082913
ALLEN, GREGORY, C	I	PRESIDENT & CEO & DIRECTOR OF RESEARCH, & DIRECTOR (ELECTED MANAGER)	09/2017	NA	Y	N	5268058
DE LUCE, ANN, C	I	CHIEF COMPLIANCE OFFICER	01/2017	NA	Y	N	5685852
OLEARY, MICHAEL, JOSEPH	I	DIRECTOR (ELECTED MANAGER)	05/2014	NA	Y	N	1324154
SWEET, INGA, B	I	EVP, COO & DIRECTOR (ELECTED MANAGER)	01/2017	NA	Y	N	6767230
CALLAN S CORP A	DE	MEMBER	09/2017	E	Y	N	82-2748926

Schedule B**Indirect Owners**

1. Complete Schedule B only if you are submitting an initial application. Schedule B asks for information about your indirect owners; you must first complete Schedule A, which asks for information about your direct owners. Use Schedule C to amend this information.
2. Indirect Owners. With respect to each owner listed on Schedule A (except individual owners), list below:
 - (a) in the case of an owner that is a corporation, each of its shareholders that beneficially owns, has the right to vote, or has the power to sell or direct the sale of, 25% or more of a class of a voting security of that corporation;

For purposes of this Schedule, a *person* beneficially owns any securities: (i) owned by his/her child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, sharing the same residence; or (ii) that he/she has the right to acquire, within 60 days, through the exercise of any option, warrant, or right to purchase the security.
 - (b) in the case of an owner that is a partnership, all general partners and those limited and special partners that have the right to receive upon dissolution, or have contributed, 25% or more of the partnership's capital;
 - (c) in the case of an owner that is a trust, the trust and each trustee; and
 - (d) in the case of an owner that is a limited liability company ("LLC"), (i) those members that have the right to receive upon dissolution, or have contributed, 25% or more of the LLC's capital, and (ii) if managed by elected managers, all elected managers.
3. Continue up the chain of ownership listing all 25% owners at each level. Once a public reporting company (a company subject to Sections 12 or 15(d) of the Exchange Act) is reached, no further ownership information need be given.
4. In the DE/FE/I column below, enter "DE" if the owner is a domestic entity, "FE" if the owner is an entity incorporated or domiciled in a foreign country, or "I" if the owner is an individual.
5. Complete the Status column by entering the owner's status as partner, trustee, elected manager, shareholder, or member; and for shareholders or members, the class of securities owned (if more than one is issued).
6. Ownership codes are:

C - 25% but less than 50%	E - 75% or more
D - 50% but less than 75%	F - Other (general partner, trustee, or elected manager)
7. (a) In the *Control Person* column, enter "Yes" if the *person* has *control* as defined in the Glossary of Terms to Form ADV, and enter "No" if the *person* does not have *control*. Note that under this definition, most executive officers and all 25% owners, general partners, elected managers, and trustees are *control persons*.
 - (b) In the PR column, enter "PR" if the owner is a public reporting company under Sections 12 or 15(d) of the Exchange Act.
 - (c) Complete each column.

No Information Filed

Schedule D - Miscellaneous

You may use the space below to explain a response to an Item or to provide any other information.

Section 7.B(1) Private Fund Reporting - Name of the private fund, Callan Multi-Manager Trust (private fund #805-8863264280) was changed to Micro Cap Value Fund. Response to Item 9 Custody (F) includes qualified custodians of Callan's Trust Advisory Group clients, but not Callan's consulting services clients.

DRP Pages**CRIMINAL DISCLOSURE REPORTING PAGE (ADV)**

No Information Filed

REGULATORY ACTION DISCLOSURE REPORTING PAGE (ADV)*GENERAL INSTRUCTIONS*

This Disclosure Reporting Page (DRP ADV) is an ☒ INITIAL **OR** ☒ AMENDED response used to report details for affirmative responses to Items 11.C., 11.D., 11.E., 11.F. or 11.G. of Form ADV.

Regulatory Action

Check item(s) being responded to:

- | | | | | |
|---|---|----------------------------------|---|---|
| <input checked="" type="checkbox"/> 11.C(1) | <input checked="" type="checkbox"/> 11.C(2) | <input type="checkbox"/> 11.C(3) | <input checked="" type="checkbox"/> 11.C(4) | <input checked="" type="checkbox"/> 11.C(5) |
| <input type="checkbox"/> 11.D(1) | <input type="checkbox"/> 11.D(2) | <input type="checkbox"/> 11.D(3) | <input type="checkbox"/> 11.D(4) | <input type="checkbox"/> 11.D(5) |
| <input type="checkbox"/> 11.E(1) | <input type="checkbox"/> 11.E(2) | <input type="checkbox"/> 11.E(3) | <input type="checkbox"/> 11.E(4) | |
| <input type="checkbox"/> 11.F. | <input type="checkbox"/> 11.G. | | | |

Use a separate DRP for each event or *proceeding*. The same event or *proceeding* may be reported for more than one *person* or entity using one DRP. File with a completed Execution Page.

One event may result in more than one affirmative answer to Items 11.C., 11.D., 11.E., 11.F. or 11.G. Use only one DRP to report details related to the same event. If an event gives rise to actions by more than one regulator, provide details to each action on a separate DRP.

PART I

A. The *person(s)* or entity(ies) for whom this DRP is being filed is (are):

- ☒ You (the advisory firm)
- ☐ You and one or more of your *advisory affiliates*
- ☐ One or more of your *advisory affiliates*

If this DRP is being filed for an *advisory affiliate*, give the full name of the *advisory affiliate* below (for individuals, Last name, First name, Middle name).

If the *advisory affiliate* has a *CRD* number, provide that number. If not, indicate "non-registered" by checking the appropriate box.

ADV DRP - ADVISORY AFFILIATE

No Information Filed

- ☐ This DRP should be removed from the ADV record because the *advisory affiliate(s)* is no longer associated with the adviser.
- ☐ This DRP should be removed from the ADV record because: (1) the event or *proceeding* occurred more than ten years ago or (2) the adviser is registered or applying for registration with the SEC and

the event was resolved in the adviser's or *advisory affiliate's* favor.

If you are registered or registering with a *state securities authority*, you may remove a DRP for an event you reported only in response to Item 11.D(4), and only if that event occurred more than ten years ago. If you are registered or registering with the SEC, you may remove a DRP for any event listed in Item 11 that occurred more than ten years ago.

☐ This DRP should be removed from the ADV record because it was filed in error, such as due to a clerical or data-entry mistake. Explain the circumstances:

- B. If the *advisory affiliate* is registered through the IARD system or *CRD* system, has the *advisory affiliate* submitted a DRP (with Form ADV, BD or U-4) to the IARD or *CRD* for the event? If the answer is "Yes," no other information on this DRP must be provided.

☒ Yes ☐ No

NOTE: The completion of this form does not relieve the *advisory affiliate* of its obligation to update its IARD or *CRD* records.

PART II

1. Regulatory Action initiated by:

☒ SEC ☐ Other Federal ☐ State ☐ SRO ☐ Foreign

(Full name of regulator, *foreign financial regulatory authority*, federal, state, or SRO)
SEC

2. Principal Sanction:

Cease and Desist

Other Sanctions:

3. Date Initiated (MM/DD/YYYY):

09/19/2007 ☒ Exact ☐ Explanation

If not exact, provide explanation:

4. Docket/Case Number:

SF-2826-A

5. *Advisory Affiliate* Employing Firm when activity occurred which led to the regulatory action (if applicable):

6. Principal Product Type:

No Product

Other Product Types:

7. Describe the allegations related to this regulatory action (your response must fit within the space provided):

THE MATTER CONCERNS SOME OF CALLAN'S PAST DISCLOSURES DESCRIBING ITS 1998 SALE OF ITS BROKER AFFILIATE, ALPHA MANAGEMENT, TO A SUBSIDIARY OF THE BANK OF NEW YORK (BNY). UNDER THE TERMS OF THAT TRANSACTION CALLAN WAS TO RECEIVE A SERIES OF ANNUAL PAYMENTS

FROM BNY OVER THE PERIOD FROM 1998 THROUGH 2006. AN AMOUNT EQUAL TO 92% OF EACH ANNUAL PAYMENT WAS DEPENDENT ON CALLAN ESSENTIALLY REMAINING IN THE CONSULTING BUSINESS AND UNRELATED TO BNY'S BROKERAGE REVENUE. THE FINAL 8% OF EACH PAYMENT WAS CONTINGENT ON BNY'S AGGREGATE BROKERAGE COMMISSIONS ATTRIBUTABLE TO CALLAN CLIENTS EXCEEDING 75% OF THEIR 1998 LEVELS (THE FISCAL YEAR PRIOR TO THE TRANSACTION). AS A PRACTICAL MATTER BNY EXCEEDED THIS HURDLE EACH YEAR, AND BY 2000 HAD EVEN STOPPED BOTHERING WITH THE CALCULATION. AS A RESULT CALLAN RECEIVED THE SAME ANNUAL PAYMENT THROUGHOUT THE LIFE OF THE TRANSACTION. OVER THE PERIOD FROM 1998 THROUGH 2006 CALLAN ROUTINELY DISCLOSED THE EXISTENCE OF THIS TRANSACTION TO ALL OF ITS CLIENTS, INCLUDING IN ITS FORM ADV PART II. IN THOSE DISCLOSURES THESE PAYMENTS WERE DESCRIBED SIMPLY AS "FIXED PAYMENTS" WHICH REFLECTED THEIR PRACTICAL REALITY. IN 2005, CALLAN WERE INFORMED BY THE SEC STAFF THAT THEY FELT THAT THIS DISCLOSURE WAS INCOMPLETE. AT THAT TIME CALLAN VOLUNTARILY AMENDED ITS FORM ADV PART II TO PROVIDE MORE DETAIL ON THE STRUCTURE OF THE PAYMENTS AND SENT IT OUT TO ITS CLIENTS. IN JANUARY OF 2007 THE TRANSACTION BETWEEN BNY AND CALLAN WAS CONCLUDED AND CALLAN NO LONGER RECEIVES THE PAYMENTS THAT WERE THE SUBJECT OF THE DISCLOSURE.

8. Current Status? ☐ Pending ☐ On Appeal ☒ Final

9. If on appeal, regulatory action appealed to (SEC, SRO, Federal or State Court) and Date Appeal Filed:

If Final or On Appeal, complete all items below. For Pending Actions, complete Item 13 only.

10. How was matter resolved:

Order

11. Resolution Date (MM/DD/YYYY):

09/19/2007 ☒ Exact ☐ Explanation

If not exact, provide explanation:

12. Resolution Detail:

A. Were any of the following Sanctions *Ordered* (check all appropriate items)?

☐ Monetary/Fine Amount: \$

☐ Revocation/Expulsion/Denial

☐ Censure

☐ Bar

☐ Disgorgement/Restitution

☒ Cease and Desist/Injunction

☐ Suspension

B. Other Sanctions *Ordered*:

Sanction detail: if suspended, *enjoined* or barred, provide duration including start date and capacities affected (General Securities Principal, Financial Operations Principal, etc.). If requalification by exam/retraining was a condition of the sanction, provide length of time given to requalify/retrain, type of exam required and whether condition has been satisfied. If disposition resulted in a fine, penalty, restitution, disgorgement or monetary compensation, provide total amount, portion levied against you or an *advisory affiliate* date paid and if any portion of penalty was waived:

NONE

13. Provide a brief summary of details related to the action status and (or) disposition and include relevant terms, conditions and dates (your response must fit within the space provided).

ON SEPTEMBER 19TH, 2007, THROUGH ACCEPTANCE OF AN OFFER OF SETTLEMENT BY CALLAN WHEREIN CALLAN NEITHER ADMITTED NOR DENIED THE FINDINGS, THE SEC FORMALLY REQUIRED CALLAN, VIA AN ORDER, TO CEASE-AND-DESIST FROM COMMITTING OR CAUSING ANY VIOLATIONS OR ANY FUTURE VIOLATIONS OF SECTION 207 OF THE ADVISERS ACT. CALLAN ALSO RECEIVED A CLOSING LETTER INFORMING THEM THAT THE 2003 INVESTIGATION WAS CONCLUDED.

CIVIL JUDICIAL ACTION DISCLOSURE REPORTING PAGE (ADV)

No Information Filed

Part 2**Exemption from brochure delivery requirements for SEC-registered advisers**

SEC rules exempt SEC-registered advisers from delivering a firm brochure to some kinds of clients. If these exemptions excuse you from delivering a brochure to *all* of your advisory clients, you do not have to prepare a brochure.

Yes No

Are you exempt from delivering a brochure to all of your clients under these rules?

☒ ☐

If no, complete the ADV Part 2 filing below.

Amend, retire or file new brochures:

Execution Pages**DOMESTIC INVESTMENT ADVISER EXECUTION PAGE**

You must complete the following Execution Page to Form ADV. This execution page must be signed and attached to your initial submission of Form ADV to the SEC and all amendments.

Appointment of Agent for Service of Process

By signing this Form ADV Execution Page, you, the undersigned adviser, irrevocably appoint the Secretary of State or other legally designated officer, of the state in which you maintain your *principal office and place of business* and any other state in which you are submitting a *notice filing*, as your agents to receive service, and agree that such *persons* may accept service on your behalf, of any notice, subpoena, summons, *order* instituting *proceedings*, demand for arbitration, or other process or papers, and you further agree that such service may be made by registered or certified mail, in any federal or state action, administrative *proceeding* or arbitration brought against you in any place subject to the jurisdiction of the United States, if the action, *proceeding*, or arbitration (a) arises out of any activity in connection with your investment advisory business that is subject to the jurisdiction of the United States, and (b) is *founded*, directly or indirectly, upon the provisions of: (i) the Securities Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act of 1939, the Investment Company Act of 1940, or the Investment Advisers Act of 1940, or any rule or regulation under any of these acts, or (ii) the laws of the state in which you maintain your *principal office and place of business* or of any state in which you are submitting a *notice filing*.

Signature

I, the undersigned, sign this Form ADV on behalf of, and with the authority of, the investment adviser. The investment adviser and I both certify, under penalty of perjury under the laws of the United States of America, that the information and statements made in this ADV, including exhibits and any other information submitted, are true and correct, and that I am signing this Form ADV Execution Page as a free and voluntary act.

I certify that the adviser's books and records will be preserved and available for inspection as required by law. Finally, I authorize any *person* having *custody* or possession of these books and records to make them available to federal and state regulatory representatives.

Signature:

ANN C. DE LUCE

Date: MM/DD/YYYY

09/12/2017

Printed Name:

ANN C. DE LUCE

Title:

CHIEF COMPLIANCE OFFICER

Adviser CRD Number:

107687

NON-RESIDENT INVESTMENT ADVISER EXECUTION PAGE

You must complete the following Execution Page to Form ADV. This execution page must be signed and attached to your initial submission of Form ADV to the SEC and all amendments.

1. Appointment of Agent for Service of Process

By signing this Form ADV Execution Page, you, the undersigned adviser, irrevocably appoint each of the Secretary of the SEC, and the Secretary of State or other legally designated officer, of any other state in which you are submitting a *notice filing*, as your agents to receive service, and agree that such persons may accept

service on your behalf, of any notice, subpoena, summons, *order instituting proceedings*, demand for arbitration, or other process or papers, and you further agree that such service may be made by registered or certified mail, in any federal or state action, administrative *proceeding* or arbitration brought against you in any place subject to the jurisdiction of the United States, if the action, *proceeding* or arbitration (a) arises out of any activity in connection with your investment advisory business that is subject to the jurisdiction of the United States, and (b) is *founded*, directly or indirectly, upon the provisions of: (i) the Securities Act of 1933, the Securities Exchange Act of 1934, the Trust Indenture Act of 1939, the Investment Company Act of 1940, or the Investment Advisers Act of 1940, or any rule or regulation under any of these acts, or (ii) the laws of any state in which you are submitting a *notice filing*.

2. Appointment and Consent: Effect on Partnerships

If you are organized as a partnership, this irrevocable power of attorney and consent to service of process will continue in effect if any partner withdraws from or is admitted to the partnership, provided that the admission or withdrawal does not create a new partnership. If the partnership dissolves, this irrevocable power of attorney and consent shall be in effect for any action brought against you or any of your former partners.

3. *Non-Resident* Investment Adviser Undertaking Regarding Books and Records

By signing this Form ADV, you also agree to provide, at your own expense, to the U.S. Securities and Exchange Commission at its principal office in Washington D.C., at any Regional or District Office of the Commission, or at any one of its offices in the United States, as specified by the Commission, correct, current, and complete copies of any or all records that you are required to maintain under Rule 204-2 under the Investment Advisers Act of 1940. This undertaking shall be binding upon you, your heirs, successors and assigns, and any *person* subject to your written irrevocable consents or powers of attorney or any of your general partners and *managing agents*.

Signature

I, the undersigned, sign this Form ADV on behalf of, and with the authority of, the *non-resident* investment adviser. The investment adviser and I both certify, under penalty of perjury under the laws of the United States of America, that the information and statements made in this ADV, including exhibits and any other information submitted, are true and correct, and that I am signing this Form ADV Execution Page as a free and voluntary act.

I certify that the adviser's books and records will be preserved and available for inspection as required by law. Finally, I authorize any *person* having *custody* or possession of these books and records to make them available to federal and state regulatory representatives.

Signature:

Date: MM/DD/YYYY

Printed Name:

Title:

Adviser *CRD* Number:
107687

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Item 1 – Cover Page

**Part 2A of Form ADV
Investment Adviser Brochure**

Callan LLC

600 Montgomery Street, Suite 800

San Francisco, CA 94111

Telephone: (415) 974-5060

Website: www.callan.com

LinkedIn page: <https://www.linkedin.com/company/21461/>

Twitter: <https://twitter.com/CallanLLC>

Contact information

Ann C. De Luce

Chief Compliance Officer

deluce@callan.com

This brochure provides information about the qualifications and business practices of Callan LLC. If you have any questions about the contents of this brochure, please contact us at the telephone number or email address listed above. The information in this brochure has not been approved or verified by the United States Securities and Exchange Commission or by any state securities authority.

Callan is an SEC registered investment adviser. This registration does not imply a specific level of expertise, skill or training. This registration does not imply a recommendation by the United States Securities and Exchange Commission or any state securities authority.

Additional information about Callan is also available on the SEC's website at www.adviserinfo.sec.gov.

Item 2 – Material Changes

Effective September 1, 2017, Callan changed its legal form from a corporation to a limited liability company and changed its name to Callan LLC from Callan Associates Inc. ("Callan").

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Item 4 – Advisory Business

Founded in 1973 and headquartered in San Francisco, California, Callan LLC (“Callan”), a SEC-registered investment adviser, is one of the largest independently-owned investment consulting firms in the country. Callan conducted business as Callan Associates Inc., a California corporation until September 1, 2017 when it converted its form of organization to a limited liability company under the name Callan LLC. All references to Callan in this brochure are to Callan LLC and its predecessor corporation, as the context may require.

Callan provides services through four distinct lines of business:

(I) The Fund Sponsor Consulting Group (FSC)

Fund Sponsor Consulting serves sponsors of defined benefit plans, defined contribution plans, endowments, foundations, insurance companies, healthcare organizations, and other large institutional asset pools. Supported by a deep team of research professionals, this division is organized to deliver customized solutions that meet the needs of even the most sophisticated institutional investment programs. Services include strategic planning, plan implementation, monitoring and evaluation, and continuing education. Products and services for fund sponsor organizations offered through FSC services include:

(1) Strategic Planning:

- (a) Investment Policy - this service provides assistance to fund sponsors in formulating and articulating in a formal document the investment policies and guidelines of the retirement program, endowment or foundation.
- (b) Asset Allocation/Liability - this service provides information concerning the effect of asset mix on projected assets, liabilities and cash flows for pension plans and insurance pools.
- (c) Asset Allocation and Spending Studies – this service provides information concerning the effect of asset mix on projected assets, spending needs, and cash flows for endowment and foundation clients.
- (d) Manager/Investment Structure - this service provides information concerning the structure of an asset class within a retirement program, endowment or foundation, taking into consideration the fund's goals and objectives, market and fund sponsor environments, among other factors.
- (e) Investment Structure Evaluation – for defined contribution clients, this service provides an in-depth analysis of the investment line-up including both the number of and the types of investment options.

(2) Plan Implementation:

- (a) Manager/Record Keeper Search - this service provides fund sponsors with information concerning the styles and relative attributes of various investment managers or record keepers.
- (b) Fee Analysis – this service, offered to defined contribution plans, analyzes fees paid to service providers.
- (c) Custody, Securities Lending and Transition Management - this service provides fund sponsors with information concerning the relative attributes of various custodial, securities lending or transition management providers.
- (d) Alternative Investments - this service assists in the development, implementation and evaluation of institutional real estate, hedge fund and other alternative investment programs.

(3) Monitoring and Evaluation:

- (a) Investment Measurement - this reporting service provides summary performance measurement data on an investment portfolio and will, if requested by the client, include making relevant benchmark and peer group comparisons and analyses.
- (b) Performance Attribution - this service analyzes portfolio and/or fund performance, broken down into its various sub-component sources of risk and return.

- (c) Performance Evaluation Services - these services are comprised of a flexible PC-based tool to produce performance analysis reports, and a quarterly report which provides a comparative review incorporating analysis of performance, portfolio characteristics, product assets, fees and product resources.
 - (d) Other Customized Reporting services may be provided upon client request.
- (4) Continuing Education:
- (a) Callan Institute ("the Institute"): The Institute functions as an educational institution servicing clients (including fund sponsors, investment managers, and financial intermediaries) and our associates by independently analyzing trends in the industry via research communications and conference programs. Clients receive research papers, Callan Insights and DC Insights (an electronic news service that reports developments within the institutional investment arena), surveys, quarterly data, and other online updates, and clients can participate in our educational programs (conferences, webinars, and workshops). Clients also receive newsletters including the Capital Markets Review, Defined Contribution Observer, Private Market Trends, Real Assets Reporter, and Hedge Fund Monitor. The Institute offers summaries of our educational conferences/workshops and access to the on-line library of archived research.
 - (b) Center for Investment Training: The Center for Investment Training, more commonly known as the "Callan College", offers one and one-half to two-day programs several times each year and also provides customized sessions. The "Callan College" is designed to provide investment fiduciaries and their advisers with basic-to-intermediate-level of instruction on prudent investment practices. The subjects discussed include fiduciary standards and responsibilities, capital market theory, asset allocation, the writing of investment policy statements, investment manager structure and search, and performance measurement and evaluation. Additional one-day "Callan College" programs on such subjects as defined contribution, real estate, hedge funds, and private markets are also periodically offered to fund sponsors, investment managers, and/or financial intermediaries.
- (II) The Independent Adviser Group (IAG)
- IAG delivers consulting resources and services to a select group of independent consulting firms and financial intermediaries. IAG delivers to its clients the tools to provide fiduciaries, trustees, and high net-worth individuals with objective investment analysis and investment solutions that were previously available to only the largest of institutions. These solutions include strategic planning, plan implementation, monitoring and evaluation, and continuing education.
- Products and services for investment consulting firms and financial intermediaries offered through the IAG include:
- (1) Bundled Consulting:
- (a) Capital Markets Research and Asset Optimization Program - this service provides insights on Callan's capital market assumptions and allows the IAG clients to run customized optimizations based upon their clients' requirements. Asset Optimization software is provided.
 - (b) Consulting Templates - this service provides templates for a range of investment policy statements, data-gathering checklists, and storyboards to assist the IAG client in clearly documenting their clients' investment management processes.
 - (c) Middle Market Matrix (MAX) - this service provides a set of reports/information on a collection of separate account managers and mutual funds that have passed Callan's due diligence process that provides the IAG clients with analytical information about institutional quality investment managers.
 - (d) Performance Evaluation Services - these services are comprised of a flexible PC-based tool to produce performance analysis reports, and a quarterly report which

provides a comparative review incorporating analysis of performance, portfolio characteristics, product assets, fees and product resources.

- (e) Research and Analytics - this service, provided through a password-protected internet site called the "OpCenter", allows IAG client access to most IAG service offerings. For example, the client can access detailed profiles of MAX managers or funds, select from a list of mutual funds to create their own mutual fund performance report, access their client performance reports or browse through our document archives for a collection of research support and templates.
- (2) Customized Consulting: Refer to Services in Item 4(l) above as each of these services is available to IAG clients on a customized basis.
- (3) Callan Unified Managed Account (UMA) – Callan's UMA program offers access to independent account managers (sub-advisers) who have been screened by Callan and whose trading activities are coordinated by an independent overlay manager selected by Callan. IAG clients can coordinate the opening of a single-custodial UMA account for their clients and can create customized individual manager allocations on a per-account basis. Although Callan does not exercise discretion over the accounts managed through the UMA program, Callan does have the authority to replace the overlay manager and to recommend changes to the sub-advisers engaged by the overlay manager to implement the program.
- (4) Continuing Education:
 - (a) Callan Institute ("the Institute"): The Institute functions as an educational institution servicing clients (including fund sponsors, investment managers, and financial intermediaries) and our associates by independently analyzing trends in the industry via research communications and conference programs. Clients receive research papers, Callan Insights and DC Insights (an electronic news service that reports developments within the institutional investment arena), surveys, quarterly data, and other online updates, and clients can participate in our educational programs (conferences, webinars, and workshops). Clients also receive newsletters including the Capital Markets Review, Defined Contribution Observer, Private Market Trends, Real Assets Reporter, and Hedge Fund Monitor. The Institute offers summaries of our educational conferences/workshops and access to the on-line library of archived research.
 - (b) Center for Investment Training: The Center for Investment Training, more commonly known as the "Callan College", offers one and one-half to two-day programs several times each year and also provides customized sessions. The "Callan College" is designed to provide investment fiduciaries and their advisers with basic-to-intermediate-level of instruction on prudent investment practices. The subjects discussed include fiduciary standards and responsibilities, capital market theory, asset allocation, the writing of investment policy statements, investment manager structure and search, and performance measurement and evaluation. Additional one-day "Callan College" programs on such subjects as defined contribution, real estate, hedge funds, and private markets are also periodically offered to fund sponsors, investment managers, and/or financial intermediaries.

(III) The Institutional Consulting Group (ICG)

ICG provides investment manager clients with research, education, performance measurement, and database and analytical tools that help them better serve the needs of institutional investors.

Products and services to investment management firms offered through the ICG include:

- (1) Performance Evaluation Services - these services are comprised of a flexible PC-based tool to produce performance analysis reports, and a quarterly report which provides a

comparative review incorporating analysis of performance, portfolio characteristics, product assets, fees and product resources.

- (2) Style, Trend, Analysis, and Research Report (STAR) - this service includes an annual report and mid-year update which quantifies the institutional pool of assets and flows within a style, examines asset concentration and the largest players and identifies top asset gatherers by product size.
- (3) Market Intelligence Report – this is a quarterly publication capturing quantitative and qualitative issues and trends in institutional investing.
- (4) Continuing Education:
 - (a) Callan Institute (“the Institute”): The Institute functions as an educational institution servicing clients (including fund sponsors, investment managers, and financial intermediaries) and our associates by independently analyzing trends in the industry via research communications and conference programs. Clients receive research papers, Callan Insights and DC Insights (an electronic news service that reports developments within the institutional investment arena), surveys, quarterly data, and other online updates, and clients can participate in our educational programs (conferences, webinars, and workshops). Clients also receive newsletters including the Capital Markets Review, Defined Contribution Observer, Private Market Trends, Real Assets Reporter, and Hedge Fund Monitor. The Institute offers summaries of our educational conferences/workshops and access to the on-line library of archived research.
 - (b) Center for Investment Training: The Center for Investment Training, more commonly known as the “Callan College”, offers one and one-half to two-day programs several times each year and also provides customized sessions. The “Callan College” is designed to provide investment fiduciaries and their advisers with basic-to-intermediate-level of instruction on prudent investment practices. The subjects discussed include fiduciary standards and responsibilities, capital market theory, asset allocation, the writing of investment policy statements, investment manager structure and search, and performance measurement and evaluation. Additional one-day “Callan College” programs on such subjects as defined contribution, real estate, hedge funds, and private markets are also periodically offered to fund sponsors, investment managers, and/or financial intermediaries.

(IV) The Trust Advisory Group (TAG)

TAG is our asset management and implemented consulting division. TAG specializes in the design, implementation, and ongoing management of multi-manager and discretionary portfolios for institutional investors. Seen through the lens of Callan’s consulting experience, TAG applies a process-driven approach to building efficient, low-cost mixes of sub-adviser portfolios with clearly articulated goals and objectives. TAG serves as the sponsor and adviser to multi-manager equity funds: a small cap fund operating within the Diversified Alpha Group Trust, and a micro-cap fund operating within the Callan Multi-Manager Trust. In addition, TAG is the discretionary investment adviser to separate retirement program clients that feature either a series of proprietary target date mutual funds or collective investment trusts for use by employees of the sponsoring client and its affiliates in their 401(k) and 403(b) retirement plans. TAG also serves as the Outsourced Chief Investment Officer (OCIO) of certain discretionary and non-discretionary adviser clients. In addition, TAG is the non-discretionary adviser to a series of target maturity funds known as Callan GlidePath® Funds.

TAG focuses its efforts in two different areas:

- (1) Discretionary Services:

- (a) Private Trusts - Callan, through TAG, is the adviser and sponsor of two diversified, commingled, small cap and micro-cap equity trust funds, the Diversified Alpha Group Trust and the Callan Multi-Manager Trust (Private Trusts), each with a bank trustee.

The Diversified Alpha Group Trust is offered privately to qualified corporate pension plans and profit sharing plans, and government pension plans. It is designed for large plans generally with a minimum investment of \$50 million.

The Callan Multi-Manager Trust is offered privately to qualified defined benefit plans, foundations, and endowments, including permanent funds, which are funds set up by governments and non-profit organizations whose principal is invested in perpetuity and only the fund's earnings are used for some specific financial purpose or obligation.

TAG is responsible for the overall management of the Private Trusts. TAG does not offer advice on, nor have discretion over, the securities held in the Private Trusts. TAG engages, monitors, and as necessary, replaces the sub-advisers who are responsible for investing and reinvesting the assets (including having all authority for security-level decisions) of the Private Trusts in accordance with the investment guidelines established for each sub-adviser by TAG.

- (b) Discretionary Consulting Services – Callan, through TAG, acts as the discretionary adviser to large foundations and to large corporate 401k plans. In this role, TAG acts as an OCIO with discretion over a wide range of decisions including asset allocation, portfolio structure, glidepath design, manager selection, manager termination, and rebalancing. TAG also has discretion as to the purchase and sale of mutual fund shares and interests in private funds in separate accounts for these clients, but does not otherwise have discretion over the securities held in client investments. TAG engages, monitors, and as necessary, replaces the sub-advisers who are responsible for investing and reinvesting the assets (including having all authority for security-level decisions) of these clients in accordance with the investment guidelines established for each sub-adviser by TAG.
- (c) Retirement Program Funds – Callan, through TAG, acts as the investment adviser to proprietary mutual funds and collective investment trusts sponsored by US-based corporations and/or their related entities for use in their defined contribution plans. These funds consist of Target Date Funds (each a “TDF” and collectively, the “TDFs”) and Asset Class Funds (“Core Funds”). Callan, as the investment adviser, is responsible for the design and maintenance of the asset allocation (or glidepath) for the TDFs. Each TDF operates as a “fund of funds” and invests in a combination of underlying Core Funds and underlying unaffiliated funds (“Underlying Unaffiliated Funds”). Collectively, these are the “Underlying Funds” and represent a broad array of investments and investment styles. Callan is responsible for the selection of Underlying Funds in the TDFs. In addition, Callan provides overall investment management services to the Core Funds through a “manager of managers” structure whereby third party sub-advisers identified by Callan provide day to day portfolio management of the assets in the Core Funds subject to Callan's overall investment management discretion.

(2) Non-Discretionary Services:

- (a) Target Maturity Collective Funds - Callan, through TAG, acts as the non-discretionary adviser to a series of target maturity collective funds (Collective Funds) sponsored by a large Delaware state-chartered trust company (Trust Company) known as the Callan GlidePath® Funds. These Collective Funds are broadly diversified by asset class and investment style. They have an asset allocation that becomes increasingly conservative over time. The Collective Funds achieve their diversification by

investing in other collective funds and/or mutual funds managed by a diverse group of investment advisers. The Collective Funds are designed as a single-fund investment solution for participants of defined contribution plans.

TAG is responsible for the design of the asset allocation (or glidepath) for the Collective Funds. TAG is also responsible for providing due diligence and advice to the Trust Company on the underlying collective funds and/or mutual funds in which the Collective Funds are invested. TAG is further responsible for monitoring the asset allocation of the Collective Funds, as well as the performance of the underlying funds over time, and for providing the Trust Company with periodic rebalancing advice. The Trust Company has final discretionary authority over the Collective Funds, including all security level decisions related to the underlying funds. The advisers for the underlying funds have authority over all security level decisions within those funds.

- (b) Callan, through TAG, acts as a non-discretionary sub-adviser to a special purpose Collective Investment Trust (CIT) sponsored by a global trust company. The CIT is managed for the exclusive use of participants within qualified defined contribution plans sponsored by a US-based corporation and/or its related entities. In this role, Callan has oversight and monitoring responsibility for various funds offered through the CIT.

As of December 31, 2016, total TAG assets under management were \$22,665,253,709, broken down as follows:

- (1) Discretionary assets of \$20,635,005,248.

Callan does not and will not provide consulting advice to a Fund Sponsor Consulting client with respect to an investment of plan assets in the Discretionary Services. The reason for this restriction is the fact that Callan receives compensation from the assets of the Discretionary Services. Under the Employee Retirement Income Security Act of 1974, as amended, it is not permissible for Callan, as an investment consultant, to provide consulting advice to a plan regarding an investment in the Discretionary Services while, at the same time, receiving compensation from the Discretionary Assets.

Furthermore, Callan's Fund Sponsor Consulting clients cannot invest their plan assets in the Discretionary Services unless they amend their consulting contract with Callan to acknowledge the potential conflict of interest created by the fact that Callan receives compensation from the assets of the Discretionary Services. The consulting contract amendment formally precludes Callan from providing any consulting advice with respect to plan assets invested in the Discretionary Services, either before, during, or after the investment is made.

- (2) Non-Discretionary assets of \$2,030,248,461.

Callan does not and will not provide consulting advice to a Fund Sponsor Consulting client with respect to an investment of plan assets in the Non-Discretionary Services. The reason for this restriction is the fact that Callan receives compensation from the assets of the Non-Discretionary Services. Under the Employee Retirement Income Security Act of 1974, as amended, it is not permissible for Callan, as an investment consultant, to provide consulting advice to a plan regarding an investment in the Non-Discretionary Services while, at the same time, receiving compensation from the Non-Discretionary Services.

Furthermore, Callan's Fund Sponsor Consulting clients cannot invest their plan assets in the Non-Discretionary Services unless they amend their consulting contract with Callan to acknowledge the potential conflict of interest created by the fact that Callan receives compensation from the assets of the Non-Discretionary Services. The consulting contract amendment formally precludes Callan from providing any consulting advice with respect to

plan assets invested in the Non-Discretionary Services, either before, during, or after the investment is made.

TAG clients receive Callan's education services through:

- (a) Callan Institute ("the Institute"): The Institute functions as an educational institution servicing clients (including fund sponsors, investment managers, and financial intermediaries) and our associates by independently analyzing trends in the industry via research communications and conference programs. Clients receive research papers, Callan Insights and DC Insights (an electronic news service that reports developments within the institutional investment arena), surveys, quarterly data, and other online updates, and clients can participate in our educational programs (conferences, webinars, and workshops). Clients also receive newsletters including the Capital Markets Review, Defined Contribution Observer, Private Market Trends, Real Assets Reporter, and Hedge Fund Monitor. The Institute offers summaries of our educational conferences/workshops and access to the on-line library of archived research.
- (b) Center for Investment Training: The Center for Investment Training, more commonly known as the "Callan College", offers one and one-half to two-day programs several times each year and also provides customized sessions. The "Callan College" is designed to provide investment fiduciaries and their advisers with basic-to-intermediate-level of instruction on prudent investment practices. The subjects discussed include fiduciary standards and responsibilities, capital market theory, asset allocation, the writing of investment policy statements, investment manager structure and search, and performance measurement and evaluation. Additional one-day "Callan College" programs on such subjects as defined contribution, real estate, hedge funds, and private markets are also periodically offered to fund sponsors, investment managers, and/or financial intermediaries.

Item 5 – Fees and Compensation

The fees for each of Callan's business lines are described below.

All Callan fees are negotiable and are paid in cash. A client may cancel an agreement for services with Callan at any time upon notice to Callan. If Callan is in the process of performing services for a client which the client does not want to have completed, then Callan will bill the client for the services performed to the date of cancellation.

On occasion, Callan may accept payment for the provision of its Fund Sponsor Consulting services from a directed brokerage account when such fund sponsor client directs its broker to send Callan a check to pay its client's bill. Callan has no soft dollar arrangements with any broker, and only accepts checks from brokers as payment for its hard dollar client fees. Other than payment of the invoice for client services, no compensation is received from the broker.

(I) The Fund Sponsor Consulting Group (FSC)

The fees for Fund Sponsor Consulting Services vary depending upon the type and complexity of the assignment with a fee range being between \$10,000 and \$900,000 per project service or suite of services (retainer) per year. The median fee is \$135,000. Fees for Fund Sponsor Consulting services may also be based on a percentage of assets on which we consult, which such percentage is negotiable depending on the services provided. All fund sponsor retainer clients subscribing to any services of Callan are provided Callan Institute services as part of the overall fees they pay Callan for so long as they remain clients. The fund sponsor "Callan College" registration fees, per session, range between \$1,175 and \$2,500 per person.

Fees are typically billed monthly or quarterly in arrears.

(II) The Independent Adviser Group (IAG)

IAG clients are independent consulting firms and financial intermediaries that access the IAG bundled consulting services, including the UMA platform described in Item 4(ii) above, to provide advisory services to their clients. Callan charges IAG clients an annual base fee which varies depending on the size and nature of the IAG client and the complexity of the client relationship. The base fees paid by most IAG clients currently range from \$30,000 to \$600,000, with some IAG clients paying more or less than this range based on their individual circumstances. Some IAG clients receive as part of the IAG bundled consulting services access to the Callan Institute.

Clients of an IAG client that elect to participate in the Callan UMA program pay an asset-based fee to the overlay manager of the UMA platform who, in turn, pays asset-based fees to Callan for program coordination, and sub-advisers whose investment strategies are utilized. Callan asset based fees for the UMA program are based on a tiered fee schedule that typically starts at 20 bp. In some instances, Callan will pay consulting fees to a qualified third-party that assists with the training of, and use by, independent investment advisors opening client accounts under the UMA program. Fees otherwise retained by Callan are reduced dollar-for-dollar by the consulting fees paid to the qualified third-party.

In addition to the annual base fee, Callan charges the following fees for its IAG services:

- (a) Project-based fees and/or suite of services (retainer) for customized consulting services start generally at \$30,000;
- (b) "Callan College" registration fees, per session, range from \$2,350 to \$2,500 per person.

A client of an IAG client allocating assets to the UMA platform is also responsible for paying separate fees to its independent consultant or financial intermediary, (the IAG client) who oversees such client's UMA platform investment, as well as for paying portfolio execution and custody charges. Callan does not participate in any such fees or charges.

Fees are typically billed quarterly in arrears.

(III) The Institutional Consulting Group (ICG)

Fees for Investment Management Organizations: The fees for research and analytical tools vary depending upon the type and complexity of the assignment, with a fee range being between \$3,000 and \$100,000 per project service, workshop, or suite of services (retainer) per year.

Callan Institute fees for investment manager clients of ICG range from \$47,000 to \$59,000 per organization per year (not per individual) dependent upon the complexity of the services selected by the client organization. The investment manager "Callan College" registration fees, per session, range between \$2,350 and \$3,000 per person.

Callan is committed to ensuring that it does not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Callan informs its investment manager clients of such policy at the start of the relationship and informs all clients of such policy on a routine basis. In addition to disclosing the existence of its business relationships with investment managers on request, Callan also discloses these manager relationships in annual mailings, as part of each applicable manager search, and in the quarterly performance evaluation reports provided to FSC clients.

Fees are typically billed quarterly in arrears.

(IV) The Trust Advisory Group (TAG)

(1) Discretionary Services:

- (a) Private Trusts: TAG, and each sub-adviser, receives a quarterly fee in arrears from the assets of the Private Trusts which are accrued daily at an annual rate of 0.15% of the average daily net assets, in accordance with the organizational documents for the Private Trusts. Interests in a Private Trust are offered only by means of a private placement memorandum which describes a Private Trust's fees and expenses, the terms and conditions for subscriptions and redemptions, the investment objectives and policies, and other information. The private placement memorandum is made available only to qualified investors.
- (b) Discretionary Consulting Services – Callan through TAG, receives a quarterly asset-based fee in arrears from the assets of the large family foundation and large corporate 401k plans for which it provides OCIO services. The fees range between 0.04% and 0.20% of total assets.
- (c) Retirement Program Funds – Callan's fees range from 0.00% to 0.05% of the average daily net assets of each underlying fund, calculated daily. Fees are paid monthly in arrears.

- (2) Non-Discretionary Services: Callan receives asset-based fees from the assets of the Collective Funds and CIT which are accrued daily and paid quarterly in arrears. The fees range between 0.02% and 0.15% of total assets in the Collective Funds and CIT.

Item 6 – Performance-Based Fees and Side-By-Side Management

Callan does not charge performance-based fees.

Item 7 – Types of Clients

Callan's clients are fund sponsors, investment managers, investment consulting firms, financial intermediaries, high net worth individuals, and retirement plan sponsored mutual funds. The clients are typically responsible for investment funds that are large tax-exempt funds such as pension, profit sharing, thrift, trust, endowment, and foundation funds. The sponsors are private corporations, public governments, multi-employer groups, and non-profit organizations. The investment managers and financial intermediary clients are banks, insurance companies, and independent investment management firms.

Callan offers advice to its clients, including manager search services and/or performance reporting services, on mutual funds and collective investment funds, hedge fund partnerships, real estate partnerships, and private equity partnerships. With the exception of the Collective Funds and OCIO clients which may invest in mutual funds and private funds, and retirement plan sponsored mutual funds such as the Retirement Program Funds and the underlying Core Funds, Callan does not offer advice on specific securities of individual issuers such as stocks and bonds or other investment companies.

Callan does not and will not provide consulting advice to a Fund Sponsor Consulting client with respect to an investment of plan assets in either the Private Trusts or the Collective Funds. The reason for this restriction is the fact that Callan receives compensation from the assets of the Private Trusts and the Collective Funds. Under the Employee Retirement Income Security Act of 1974, as amended, it is not permissible for Callan, as an investment consultant, to provide consulting advice to a plan regarding an investment in the Private Trusts or Collective Funds while, at the same time, receiving compensation from the Private Trusts or Collective Funds.

Furthermore, Callan's Fund Sponsor Consulting clients cannot invest their plan assets in the Private Trusts or the Collective Funds unless they amend their consulting contract with Callan to acknowledge the potential conflict of interest created by the fact that Callan receives compensation from the assets of the Private Trusts or the Collective Funds. The consulting contract amendment formally precludes Callan from providing any consulting advice with respect

to plan assets invested in the Private Trusts or Collective Funds, either before, during, or after the investment is made.

Item 8 – Methods of Analysis, Investment Strategies and Risk of Loss

All investing involves a risk of loss that clients should be prepared to bear. Securities investments can be affected by liquidity and volatility in the securities markets often driven by adverse changes in the national and international economies as well as by non-economic events. Investment managers generally attempt to identify securities and other assets believed to be undervalued and there are no assurances that such opportunities will be successfully recognized or acquired by investment managers engaged by Fund Sponsor Consulting clients or by TAG Private Trusts, Collective Funds or retirement plan funds. Callan cannot give any guarantee that it or any investment manager will achieve a client's investment objectives.

Callan will not have a role in the management or administration of any client's account and we will not have the opportunity to evaluate, in advance, the specific investments made by any investment managers except as described herein with respect to the retirement plan funds. As a result, the rates of return to clients will primarily depend upon the results of investment decisions of third-party managers. Callan shall not be responsible for reviewing the risks of individual securities nor the compliance/non-compliance of individual security holdings with a client's policy guidelines. Past performance by an investment manager is not a guaranty of future performance by that investment manager.

Callan works on an on-going basis with many of the largest institutional investors in the country in the development and maintenance of their risk management programs. Risk control is at the heart of Callan's investment consulting philosophy. In addition, ongoing research and fiduciary education are vital supporting elements of our risk control practice.

There are three key areas where we participate in the risk management process for our clients:

1. **Asset Allocation and Portfolio Implementation**

This includes: defining the performance and risk objectives for the client consistent with assets, liabilities, liquidity needs, risk tolerance, and any regulatory constraints, as well as developing investment guidelines and monitoring criteria for internal and external management.

Callan's proprietary asset allocation/liability modeling capabilities originated in the late 1970s and has been continually enhanced. These enhancements encompass Callan's state-of-the-art modeling technologies, as well as more than 35 years of experience in asset allocation modeling for major institutional investors. We maintain a dedicated Capital Markets Research Group that is responsible for conducting all asset/liability work.

This specialized team of economists, mathematicians, and actuaries is dedicated to research in the fields of asset allocation and strategic planning as well as the development of economic tools and statistical models that enable fund sponsors to predict the possible outcomes of their investment decisions. The group has developed a capital market projection model, a mean-variance optimization model, and an asset/liability Monte Carlo simulation model. In addition to this primary focus, the group conducts client specific research projects, including the examination of new asset classes and the development of appropriate due diligence documentation for the inclusion of these assets in a client portfolio. A frequent subject of analysis is how to structure investment portfolios including the use of active and passive management in each asset class. They also frequently evaluate the uses and opportunities inherent in areas such as global tactical asset allocation and currency overlay, hedging strategies to reduce funding risk in pension funds, asset/liability matching and many other client specific research analyses.

2. Monitoring, Evaluation and Reporting System

Development and on-going maintenance of a comprehensive monitoring and reporting system covering all aspects of total fund performance and investment risk is the second area in which Callan supports its clients' risk management processes. At a minimum this system provides: top-down analyses of the total fund's performance and risk characteristics relative to benchmark and peers; analysis at the asset class level of performance, risk, and portfolio characteristics relative to benchmarks and peers; analysis at the manager level of performance, risk, portfolio characteristics relative to benchmarks and peers.

Callan has provided performance evaluation services to its clients for over 40 years. We continually invest significant dollars in our information technology and are regularly updating our performance evaluation services. The result is that Callan's clients continue to receive what we believe are state-of-the-art, user-friendly performance analytics which represent the leading edge offered in our industry today. It is important to note that Callan maintains a proprietary database and reporting platform and is one of the few to do so in the industry. We feel this is a big differentiating factor in our capabilities as it gives us complete control over the design, quality, timeliness, and content of our reporting. In addition, it provides:

- Complete flexibility in peer group construction, choice of indices and custom index construction, choice of time periods, etc.
- Access to the historical performance holdings, and organizational detail on virtually every major investment management firm that has been marketed to institutional investors over the last 40 years.
- A built-in training ground for our associates which helps to develop the intellectual capital that comes with building and maintaining a complex institutional-grade performance reporting system.

Our performance evaluation process is a combination of qualitative and quantitative factors, and most importantly, is uniquely tailored to the client's needs. Callan's broad experience in dealing with a number of different clients and situations enables us to thoroughly evaluate the total fund performance as well as each manager's overall capabilities and performance including how that manager has met the client's specific needs.

In addition to return information, Callan reports on risk analysis, style analysis, characteristics analysis, organizational issues, product strategy changes, manager turnover, ownership changes, along with any other information pertinent to each individual manager. These reports provide the most comprehensive look at total fund and manager performance and are the basis for detailed discussions and action plans going forward.

Risk analysis at Callan is geared toward providing clients with a top-down view of a given portfolio's risk level (e.g. standard deviation, tracking error); whether the investor is being compensated for that risk (e.g. Sharpe ratio, Information ratio) and where that "risk" is coming from (e.g. tracking error, sector bets, security selection or concentration).

From a statistical perspective, Callan's performance reports provide a host of risk, return and attribution diagnostics to aid with the on-going evaluation of investment managers. Our customized reports are designed to include the most relevant information in an easy-to-understand format. The risk and return measures are provided to analyze the variation or risk of a manager's return pattern. Alpha, beta, residual risk and standard deviation are compared to appropriate indices and style groups. We also regularly evaluate other statistics such as Sharpe ratio, Information ratio, Treynor ratio, and Excess Return ratio. Risk, like performance, is a relative statistic.

Along with appropriate risk and return statistics, our performance reports present portfolio characteristics in a quarterly snapshot as well as in a histogram format to help detect any change in style or approach by an investment manager. This holdings-driven view of current portfolio structure is an extremely useful current view of forward-looking risks and active bets embedded in the portfolio. We also present attribution analysis to decipher precise sources of positive alpha or potential underperformance.

3. **Operational Best Practices**

Callan's assessment of a client's internal investment operations best-practices and guidelines is the third area of involvement in assessing risk. This includes defining the governance structure for the client's fund including the allocation of decision-making authority and oversight; reviewing all aspects of the client's public markets operational platform including trading, custody, securities lending, foreign exchange, use of derivatives and/or leverage, fees and expenses; reviewing all aspects of the client's alternative investments portfolio including liquidity terms, fees and expenses, cash management and forecasting; developing an annual pacing plan to insure proper diversification across time and strategies.

Item 9 – Disciplinary Information

A regulatory action was initiated by the SEC in the form of a Cease and Desist Sanction (SF-2826-A) on September 19, 2007. The matter concerns some of Callan's past disclosures describing its 1998 sale of its broker affiliate, Alpha Management, to a subsidiary of The Bank of New York (BNY). Under the terms of that transaction, Callan was to receive a series of annual payments from BNY over the period from 1998 through 2006. An amount equal to 92% of each annual payment was dependent on Callan essentially remaining in the consulting business and unrelated to BNY's brokerage revenue. The final 8% of each payment was contingent on BNY's aggregate brokerage commissions attributable to Callan clients exceeding 75% of their 1998 levels (the fiscal year prior to the transaction). As a practical matter, BNY exceeded this hurdle each year, and by 2000 had even stopped bothering with the calculation. As a result, Callan received the same annual payment throughout the life of the transaction.

Over the period from 1998 through 2006, Callan routinely disclosed the existence of this transaction to all of its clients, including in its Form ADV Part II. In those disclosures, these payments were described simply as "fixed payments" which reflected their practical reality. In 2005, Callan was informed by the SEC staff that they felt that this disclosure was incomplete. At that time, Callan voluntarily amended its Form ADV Part II to provide more detail on the structure of the payments and sent it out to its clients. In January of 2007, the transaction between BNY and Callan was concluded and Callan no longer received the payments that were the subject of the disclosure.

The status of this order is final. The matter was resolved on September 19, 2007 via a cease and desist order.

Item 10 – Other Financial Industry Activities and Affiliations

Callan does offer business consulting to its Institutional Consulting Group clients. A description of such services is contained under Item 4(III) above.

Callan provides research and educational services to, and receives compensation for those services from, investment managers some of whom are evaluated by Callan or recommended by Callan to its other clients. Callan recognizes that there is a potential conflict between Callan's interest in receiving compensation from investment managers and Callan's obligation to provide objective advice to clients who use those managers. Callan has adopted certain policies and practices designed to prevent such conflicts, including the policies set forth in its Code of Ethical Responsibility, disclosure policies, roles of its oversight committees, separation of the areas of business, including separate personnel, revenue streams, and compensation arrangements.

Among other policies, Callan is committed to ensure that it does not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Callan informs its investment manager clients of such policy at the start of the relationship and informs all clients of such on a routine basis. In addition to disclosing the existence of its business relationships with investment managers on request, Callan also discloses these manager relationships in annual mailings, as part of each manager search, and in the quarterly performance evaluation reports provided to fund sponsor clients. Fund sponsor clients can also request specific information regarding the fees paid to Callan by the managers employed by their fund. Per company policy, information requests regarding fees are handled by Callan's Compliance Department.

Item 11 – Code of Ethics, Participation or Interest in Client Transactions and Personal Trading

In order to avoid and mitigate possible conflicts of interest presented by the firm's business mix, Callan has maintained a Code of Ethical Responsibility (the Code) since 1994. This Code also complies with Rule 204A-1 under the Investment Advisers Act of 1940, as amended. Among other things, the Code sets forth the general standards of conduct that Callan requires of its employees, as well as specific policies reasonably designed to protect the objectivity and integrity of the advice Callan renders to its clients. The topics addressed in the Code include the use and safeguarding of confidential information; the prevention of insider trading; outside business relationships of Callan employees; gifts, business entertainment and political and charitable contributions; and communications with outside parties. The Code pays special attention to the fact that Callan sells products and services to investment managers and is committed to ensuring that these relationships do not affect the outcome or process by which any of Callan's services are conducted, including manager searches and performance evaluations. Callan has adopted policies and procedures reasonably designed to prevent Callan's receipt of fees from investment managers from influencing the Fund Sponsor Consulting and Independent Adviser Group services it conducts.

The Code also contains restrictions on the personal trading activities of certain Callan employees and requires those employees to report their personal trades to the firm's CCO in accordance with applicable regulatory requirements.

Callan's Code is available on its website, www.callan.com. In addition, Callan will provide a copy of the Code to any client or prospective client upon request.

Callan provides research and educational services to, and receives compensation for those services from, investment managers some of whom are evaluated by Callan or recommended by Callan to its other clients. Callan recognizes that there is a potential conflict between Callan's interest in receiving compensation from investment managers and Callan's obligation to provide objective advice to clients who use those managers. Callan has adopted certain policies and practices designed to prevent such conflicts, including the policies set forth in its Code of Ethical Responsibility (described above), disclosure policies, roles of its oversight committees, separation of the areas of business, including separate personnel, revenue streams, and compensation arrangements.

Among other policies, Callan is committed to ensure that it does not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Callan informs its investment manager clients of such policy at the start of the relationship and informs all clients of such on a routine basis. In addition to disclosing the existence of its business relationships with investment managers on request, Callan also discloses these manager relationships in annual mailings, as part of each applicable manager search, and in the quarterly performance evaluation reports provided to fund sponsor clients. Fund sponsor clients can also request specific information

regarding the fees, if any, paid to Callan by the managers employed by their fund. Per Callan policy, information requests regarding fees are handled by Callan's Compliance Department.

Callan does not generally recommend the purchase or sale of specific securities to its Fund Sponsor Consulting, Institutional Consulting or Independent Adviser Group clients. However, from time to time there may be situations in which Callan includes in the hedge fund searches it performs for Fund Sponsor and Independent Adviser Group clients one or more hedge funds in which a related party, Sharpe 4 Partners, also invests. On rare occasions, Callan affirmatively recommends that a Fund Sponsor Consulting client purchase or sell such a hedge fund. Gregory C. Allen, President & Director of Research, has a controlling interest in Sharpe 4 Partners, a hedge fund that is managed by Sharpe 4 Capital Management, LLC ("Sharpe 4"). Sharpe 4 is not controlled by Callan.

Callan does not and will not provide consulting advice to a Fund Sponsor Consulting client with respect to an investment of plan assets in either the Private Trusts or the Collective Funds. The reason for this restriction is the fact that Callan receives compensation from the assets of the Private Trusts and the Collective Funds. Under the Employee Retirement Income Security Act of 1974, as amended, it is not permissible for Callan, as an investment consultant, to provide consulting advice to a plan regarding an investment in the Private Trusts or Collective Funds while, at the same time, receiving compensation from the Private Trusts or Collective Funds.

Furthermore, Callan's Fund Sponsor Consulting clients cannot invest their plan assets in the Private Trusts or the Collective Funds unless they amend their consulting contract with Callan to acknowledge the potential conflict of interest created by the fact that Callan receives compensation from the assets of the Private Trusts or the Collective Funds. The consulting contract amendment formally precludes Callan from providing any consulting advice with respect to plan assets invested in the Private Trusts or Collective Funds, either before, during, or after the investment is made.

Item 12 – Brokerage Practices

(I – III) FSC, IAG, ICG Groups

With regard to its Fund Sponsor Consulting, Institutional Consulting or Independent Adviser Group clients, Callan does not typically select broker-dealers for client transactions nor determine the reasonableness of their compensation (e.g., commissions).

Callan will, upon request, accept engagement to assist its Fund Sponsor Consulting clients in conducting searches for such providers as securities lending, transition management or commission recapture programs and, as such, will identify brokers to its clients as part of these searches.

On occasion, Callan may receive and accept payment for the provision of its Fund Sponsor Consulting services from a directed brokerage account when such fund sponsor client directs its broker to send Callan a check to pay its client's bill. Callan has no soft dollar arrangements with any broker, and only accepts checks from brokers as payment for its hard dollar client fees. Other than payment of the invoice for client services, no compensation is received from the broker.

(IV) TAG

With regard to the Private Trusts, the day-to-day investment decisions regarding the acquisition, disposition and voting of portfolio investments are made by the sub-advisers Callan selects to manage the Private Trusts. Callan does, however, have the authority to select one or more broker-dealers to perform transition management services for the Private Trusts in connection with the engagement or termination of sub-advisers. In addition to selecting the transition management broker-dealers, Callan has the authority to negotiate the commission rates paid to those broker-dealers. In selecting the transition management broker-dealers for the Private

Trusts, Callan considers the quality of execution and cost, but does not consider supplemental research, market or statistical information, or ancillary services provided by the broker-dealers.

Information regarding the sub-advisers' brokerage placement practices is set forth in the Private Trusts' private placement memorandum.

With respect to the Retirement Program clients, the underlying Core Funds and the TAG Discretionary Consulting Services clients, including OCIO engagements, Callan is authorized to select, and to delegate to investment managers engaged by Callan for these clients the authority to select reputable broker-dealers in order to purchase, sell and otherwise trade in securities. In selecting broker-dealers for these clients, Callan periodically reviews and evaluates with the investment managers the services provided by broker-dealers, the quality and capability of execution, commission rates and overall brokerage relationships.

Item 13 – Review of Accounts

With respect to the TAG accounts, the monitoring and reporting procedures are the same:

- (1) **Daily Reviews:** Employees of TAG typically receive and evaluate daily reports on the activities of the Private Trusts, the Retirement Program Client Funds, and the Collective Funds. This group includes the two managers of Investment Operations. The daily information that is processed includes: net asset values, returns, returns for relevant indices, fee accrual information, allocations between underlying funds and sub-advisers, as well as security level information as needed.
- (2) **Monthly Reviews:** On a monthly basis, TAG reviews a more comprehensive set of reports on the Private Trusts, the Retirement Program Client Funds, and the Collective Funds. In addition to the information in the daily reports, this includes: securities lending activity, trading-cost analysis, return comparisons versus peer groups and benchmarks, and a rebalancing report.

Investors in the Private Trusts receive monthly reports detailing their account balance, and return information for the Private Trusts, the underlying sub-advisers, comparative indices, and peer groups. Investors also receive a quarterly report with detailed performance and portfolio characteristic information. At their election, investors can also receive daily net asset value information, as well as security level holdings information for the Private Trusts and its sub-advisers.

- (3) **Periodic Reviews:** TAG senior management and the investment committee for each account review on a periodic basis and more frequently when warranted by market or account conditions, the Discretionary Consulting Services accounts. Written reports detailing account balances and changes in value from the prior quarter, comparing the performance of investment options to relevant benchmarks and/or peer groups, analyzing risks and portfolio characteristics are provided to these clients on a calendar quarter basis.

Item 14 – Client Referrals and Other Compensation

Callan may compensate persons, i.e., individuals or entities, for the referral of advisory clients to the firm, provided that appropriate disclosures and regulatory requirements are met. At the present time, Callan has one agreement under which a solicitor is to be paid compensation for introducing new clients to Callan for the Callan GlidePath® Collective Investment Trusts. The compensation to be paid under this agreement was negotiated between Callan and the solicitor. The compensation arrangement is (i) disclosed to the client at the time of the solicitation or referral and (ii) will be paid out of Callan general funds and out of the total advisory fees received by Callan from the Callan GlidePath® Collective Investment Trusts from the solicited client. No solicited client will be charged an additional fee as a result of any referral or solicitor arrangements. Compensation includes fixed quarterly fees and ongoing payments based on a

negotiated percentage of the investment advisory asset flows from the solicited client into the Callan GlidePath® Collective Investment Trusts for up to three years.

In some instances, Callan will pay consulting fees to a qualified third-party that assists with the training of, and use by, independent investment advisors opening client accounts under the UMA program. Fees otherwise retained by Callan are reduced dollar-for-dollar by the consulting fees paid to the qualified third-party.

Item 15 – Custody

Because of authority given to us by certain advisory clients, Callan is deemed to have custody of certain advisory client funds, securities, or assets held in accounts with qualified custodians. As an adviser with custody, Callan's general policy is to ensure that we maintain clients' funds and securities with qualified custodians, who in turn, provide at least quarterly account statements directly to our clients or a selected independent representative. Clients should carefully review the statements received from their qualified custodians.

Item 16 – Investment Discretion

Callan generally does not exercise investment discretion with regard to its Fund Sponsor Consulting, Institutional Consulting or Independent Adviser Group clients. Customized procedures would be developed on a client by client basis as the need arises.

With regard to the Private Trusts, the day-to-day investment decisions regarding the acquisition, disposition and voting of portfolio investments are made by the sub-advisers Callan selects to manage the Private Trusts.

With regard to the Discretionary Consulting Services, Callan through TAG, acts as an OCIO with discretion over, and in some cases, implementation responsibility for, a wide range of decisions including asset allocation, portfolio structure, manager and fund selection, manager and fund termination, and rebalancing. Callan also provides advice as to the purchase and sale of mutual fund shares and interests in private funds and separate accounts for these clients.

In connection with the monitoring and maintenance of sub-advisers' compliance with their applicable investment policies and guidelines, should the need arise, Callan has discretionary authority to direct the sale of securities to maintain alignment with such policies and guidelines.

Item 17 – Voting Client Securities

As a matter of general policy, Callan does not have nor accept authority to vote proxies.

However, under the TAG Discretionary Consulting Services agreements, Callan has been delegated authority, and, with rare exception, re-delegates to investment advisers engaged for the account to vote proxies.

With respect to the Retirement Program Funds and the underlying Core Funds, Callan has been delegated authority to vote proxies on behalf of the Fund and, in turn, with respect to the Core Funds, has delegated this authority to the sub-advisers engaged by Callan to provide portfolio management services to the Core Funds. Proxies are voted in accordance with each respective sub-adviser's proxy voting policies and procedures, which are described in the Retirement Program Funds' Statement of Additional Information, a copy of which can be obtained by contacting Callan.

Item 18 – Financial Information

Callan is not required to include a balance sheet of our most recent fiscal year.

Callan does not believe it has any financial condition that is reasonably likely to impair our ability to meet contractual commitments to clients.



Item 1 – Cover Page

**Part 2B of Form ADV
Brochure Supplement**

Fund Sponsor Consulting Group

Callan LLC

600 Montgomery Street, Suite 800
San Francisco, CA 94111
Telephone: (415) 974-5060
Website: www.callan.com

This brochure supplement provides information on Callan's personnel listed above and supplements the firm's brochure. You should have received a copy of that brochure. Please contact Ann C. DeLuce, Chief Compliance Officer, at the address above if you did not receive Callan's brochure or if you have any questions about the contents of this supplement.

Item 2 – Educational Background and Business Experience

Name: Cody Chapman, CFA, CAIA

Year of birth: 1985

Formal education after high school: University of Georgia

Business background experience for preceding five years:

Vice President

Assistant Vice President

Item 3 – Disciplinary Information

Mr. Chapman does not have any disciplinary information to disclose.

Item 4 – Other Business Activities

Mr. Chapman does not have any other outside business activities to disclose.

Item 5 – Additional Compensation

Mr. Chapman does not have any additional compensation to disclose.

Item 6 – Supervision

Callan's consultants are members of specialist or consulting teams who – along with Callan's oversight committees – jointly formulate and monitor the advice provided to clients. Mr. Chapman reports directly to Elizabeth Hood, Senior Vice President, who may be reached at 770-618-2140.

Item 2 – Educational Background and Business Experience

Name: Weston Lewis, CFA, CAIA

Year of birth: 1977

Formal education after high school: Wake Forest University, North Carolina

Business background experience for preceding five years:

Senior Vice President

Vice President

Item 3 – Disciplinary Information

Mr. Lewis does not have any disciplinary information to disclose.

Item 4 – Other Business Activities

Mr. Lewis does not have any other outside business activities to disclose.

Item 5 – Additional Compensation

Mr. Lewis receives a regular salary and bonus, and is eligible for additional compensation based on new fees from his client base.

Item 6 – Supervision

Callan's consultants are members of specialist or consulting teams who – along with Callan's oversight committees – jointly formulate and monitor the advice provided to clients. Mr. Lewis reports directly to Elizabeth Hood, Senior Vice President, who may be reached at 770-618-2140.



List of Callan's Investment Manager Clients

Confidential – For Callan Client Use Only

Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor and disclose potential conflicts on an on-going basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Callan is committed to ensuring that we do not consider an investment manager's business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan's ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan's Compliance Department.

Manager Name
1607 Capital Partners, LLC
Aberdeen Asset Management PLC
Acadian Asset Management LLC
AEGON USA Investment Management
AEW Capital Management
Affiliated Managers Group, Inc.
Alcentra
AllianceBernstein
Allianz Global Investors
Allianz Life Insurance Company of North America
American Century Investments
AMP Capital Investors Limited
Amundi Smith Breeden LLC
Angelo, Gordon & Co.
Apollo Global Management
AQR Capital Management
Ares Management LLC
Ariel Investments, LLC
Aristotle Capital Management, LLC
Artisan Holdings
Atlanta Capital Management Co., LLC
Aviva Investors Americas
AXA Investment Managers
Baillie Gifford Overseas Limited
Baird Advisors
Bank of America
Barings LLC
Baron Capital Management, Inc.
Barrow, Hanley, Mewhinney & Strauss, LLC
BlackRock
BMO Global Asset Management
BNP Paribas Investment Partners
BNY Mellon Asset Management
Boston Partners
Brandes Investment Partners, L.P.
Brandywine Global Investment Management, LLC

Manager Name
Brigade Capital Management, LP
Brown Brothers Harriman & Company
Cambiar Investors, LLC
Capital Group
CastleArk Management, LLC
Causeway Capital Management
CBRE Global Investors
Chartwell Investment Partners
ClearBridge Investments, LLC
Cohen & Steers Capital Management, Inc.
Columbia Management Investment Advisers, LLC
Columbus Circle Investors
Conning Asset Management Company
Corbin Capital Partners, L.P.
Cornerstone Capital Management
Cramer Rosenthal McGlynn, LLC
Credit Suisse Asset Management
Crestline Investors, Inc.
D.E. Shaw Investment Management, L.L.C.
DePrince, Race & Zollo, Inc.
Deutsche Asset Management
Diamond Hill Capital Management, Inc.
Dimensional Fund Advisors LP
Doubleline
Duff & Phelps Investment Mgmt. Co.
Eagle Asset Management, Inc.
EARNEST Partners, LLC
Eaton Vance Management
Epoch Investment Partners, Inc.
Fayez Sarofim & Company
Federated Investors
Fidelity Institutional Asset Management
Fiera Capital Corporation
First Eagle Investment Management, LLC
First Hawaiian Bank Wealth Management Division
Fisher Investments

Manager Name
Franklin Templeton
Franklin Templeton Institutional
Fred Alger Management, Inc.
Fuller & Thaler Asset Management, Inc.
GAM (USA) Inc.
GMO
Goldman Sachs Asset Management
Goodwin Capital Advisers
Guggenheim Investments
Guggenheim Partners Asset Management
GW&K Investment Management
Harbor Capital Group Trust
Hartford Funds
Hartford Investment Management Co.
Heitman LLC
Henderson Global Investors
Holland Capital Management
Hotchkis & Wiley Capital Management, LLC
HSBC Global Asset Management
Income Research + Management, Inc.
Insight Investment Management Limited
INTECH Investment Management, LLC
Invesco
Investec Asset Management
Ivy Investments
Janus Capital Management, LLC
Jarislowsky Fraser Global Investment Management
Jensen Investment Management
Jobs Peak Advisors
Johnson Institutional Management
J.P. Morgan Asset Management
J.P. Morgan Chase & Company
Kayne Anderson Capital Advisors LP
KeyCorp
Lazard Asset Management
Legal & General Investment Management America
Lincoln National Corporation
LM Capital Group, LLC
LMCG Investments, LLC
Longview Partners
Loomis, Sayles & Company, L.P.
Lord Abbett & Company
Los Angeles Capital Management
LSV Asset Management
MacKay Shields LLC
Macquarie Investment Management (formerly Delaware Investments)
Man Investments Inc.
Manulife Asset Management
McKinley Capital Management, LLC
MFS Investment Management
MidFirst Bank
Mondrian Investment Partners Limited
Montag & Caldwell, LLC
Morgan Stanley Investment Management
Mountain Lake Investment Management LLC
MUFG Union Bank, N.A.
Neuberger Berman
Newton Investment Management (fka Newton Capital Mgmt)
Nicholas Investment Partners

Manager Name
Nikko Asset Management Co., Ltd.
Northern Trust Asset Management
Nuveen Investments, Inc.
OFI Global Asset Management
Old Mutual Asset Management
O'Shaughnessy Asset Management, LLC
Pacific Investment Management Company
Parametric Portfolio Associates
Peregrine Capital Management, Inc.
PGIM
PGIM Fixed Income
PGIM Real Estate
PineBridge Investments
Pioneer Investments
PNC Capital Advisors, LLC
PPM America
Principal Global Investors
Private Advisors, LLC
Putnam Investments, LLC
QMA (Quantitative Management Associates)
RBC Global Asset Management
Regions Financial Corporation
RidgeWorth Capital Management, Inc.
Rockefeller & Co., Inc.
Rockpoint Group
Rothschild Asset Management, Inc.
Russell Investments
Santander Global Facilities
Schroder Investment Management North America Inc.
Smith, Graham & Co. Investment Advisors, L.P.
Smith Group Asset Management
Standard Life Investments Limited
Standish
State Street Global Advisors
Stone Harbor Investment Partners, L.P.
T. Rowe Price Associates, Inc.
Taplin, Canida & Habacht
Teachers Insurance & Annuity Association of America
The Boston Company Asset Management, LLC
The Guardian Life Insurance Company of America
The Hartford
The Lionstone Group
The London Company
The TCW Group, Inc.
Thompson, Siegel & Walmsley LLC
Thornburg Investment Management, Inc.
Tri-Star Trust Bank
UBS Asset Management
Van Eck Global
Versus Capital Group
Victory Capital Management Inc.
Vontobel Asset Management, Inc.
Voya Financial
Voya Investment Management (fka ING)
WCM Investment Management
WEDGE Capital Management
Wellington Management Company, LLP
Wells Capital Management
Western Asset Management Company
William Blair & Company



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/3/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Risk Strategies Company 700 Airport Boulevard, Suite 300 Burlingame, CA 94010	CONTACT NAME: Certificate Request Desk	
	PHONE (A/C, No, Ext): (650) 762-0400 FAX (A/C, No): (650) 762-0490	
	E-MAIL ADDRESS: certrequest@risk-strategies.com	
INSURED Callan LLC 600 Montgomery Street Suite 800 San Francisco CA 94111	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A: Hartford Accident and Indemnity Company	22357
	INSURER B: Trumbull Insurance Company	27120
	INSURER C: Hartford Casualty Insurance Company	29424
	INSURER D: Allianz Underwriters Insurance Company	36420
	INSURER E: St. Paul Fire and Marine Insurance Co	24767
	INSURER F: Underwriters as Lloyds	

COVERAGES**CERTIFICATE NUMBER:** 38191176**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			57 UUN FM7554	10/1/2017	10/1/2018	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Deductible \$ NONE
B	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			57 UUN FM7554	10/1/2017	10/1/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$0			57 XHU FM7271	10/1/2017	10/1/2018	EACH OCCURRENCE \$ 4,000,000 AGGREGATE \$ 4,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y	N/A	57 WE AA6E28	10/1/2017	10/1/2018	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E L EACH ACCIDENT \$ 1,000,000 E L DISEASE - EA EMPLOYEE \$ 1,000,000 E L DISEASE - POLICY LIMIT \$ 1,000,000
D	Financial Institution Bond			MPX1800372	10/1/2017	10/1/2018	Employee Dishonesty \$1,000,000 EE Theft of Client Property \$1,000,000
E	Fiduciary Dishonesty Bond			106808940	10/1/2017	10/1/2018	Aggregate Liability \$3,500,000
F	Cyber Liability			499183	10/1/2017	10/1/2018	Aggregate Liability \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

PROOF OF COVERAGE

CERTIFICATE HOLDER**CANCELLATION**

Proof of coverage

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Michael Christian

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ACORD 25 (2016/03)

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DATE (MM/DD/YYYY)

10/3/2017

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PRODUCER Risk Strategies Company 700 Airport Boulevard, Suite 300 Burlingame, CA 94010	CONTACT NAME: Certificate Request Desk		
	PHONE (A/C, No, Ext): (650) 762-0400 FAX (A/C, No): (650) 762-0490		
	E-MAIL ADDRESS: certrequest@risk-strategies.com		
INSURED Callan LLC 600 Montgomery Street Suite 800 San Francisco CA 94111	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: Interstate Fire & Casualty Company		22829
	INSURER B: AXIS Insurance Company		37273
	INSURER C:		
	INSURER D:		
	INSURER E:		
	INSURER F:		

COVERAGES**CERTIFICATE NUMBER:** 38191206**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY						
	<input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR						EACH OCCURRENCE \$
							DAMAGE TO RENTED PREMISES (Ea occurrence) \$
							MED EXP (Any one person) \$
							PERSONAL & ADV INJURY \$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE \$
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						PRODUCTS - COMP/OP AGG \$
	OTHER:						\$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
							\$
	UMBRELLA LIAB						EACH OCCURRENCE \$
	EXCESS LIAB						AGGREGATE \$
	<input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE						\$
	DED RETENTION \$						
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/>
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	<input type="checkbox"/> Y <input type="checkbox"/> N	N/A				E.L. EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$
							E.L. DISEASE - POLICY LIMIT \$
A	Professional Liability/E&O and Directors & Officers (combined)			MPX1800367	8/15/2017	10/1/2018	\$5,000,000 Each Claim
B	Excess E&O and D&O Liability			MCN780416012017	8/15/2017	10/1/2018	\$5,000,000 General Aggregate \$5,000,000 Agg. Excess of \$5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

PROOF OF COVERAGE

CERTIFICATE HOLDER**CANCELLATION**

PROOF OF COVERAGE

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Mike Christian

MB Christian



ABC Retirement Systems

2016 Asset-Liability Study: Final Results

June 2, 2016

Project Schedule

- Phase 1: New asset classes
 - Capital market projections
 - Consideration of new asset classes
 - Scheduled completion: **March 3, 2016**
- Phase 2: Preliminary Asset-liability results
 - Analyze alternative asset mixes
 - Review preliminary asset-liability results
 - Scheduled completion: **April 7, 2016**
- Phase 3: Select asset allocation
 - Review final asset-liability results
 - Select appropriate asset allocation
 - Scheduled completion: **May 5, 2016**
- Phase 3 Follow-Up: Final Results
 - Review recommended asset allocation options
 - Schedule completion: **June 2, 2016**

Where Does Asset Allocation Fit In?

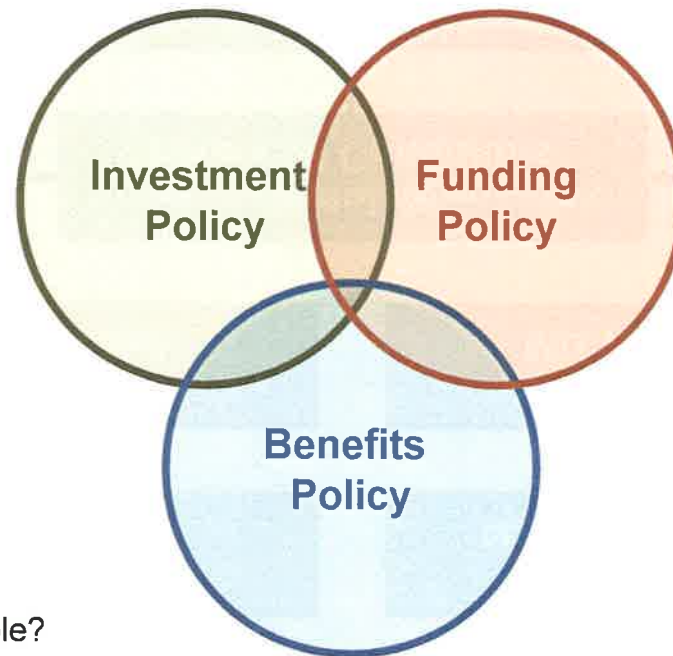
Evaluating the interaction of the three key policies that govern a defined benefit plan with the goal of establishing the best investment policy

Investment Policy

- How will the assets supporting the benefits be invested?
- What risk/return objectives?
- How to manage cash flows?

Benefits Policy

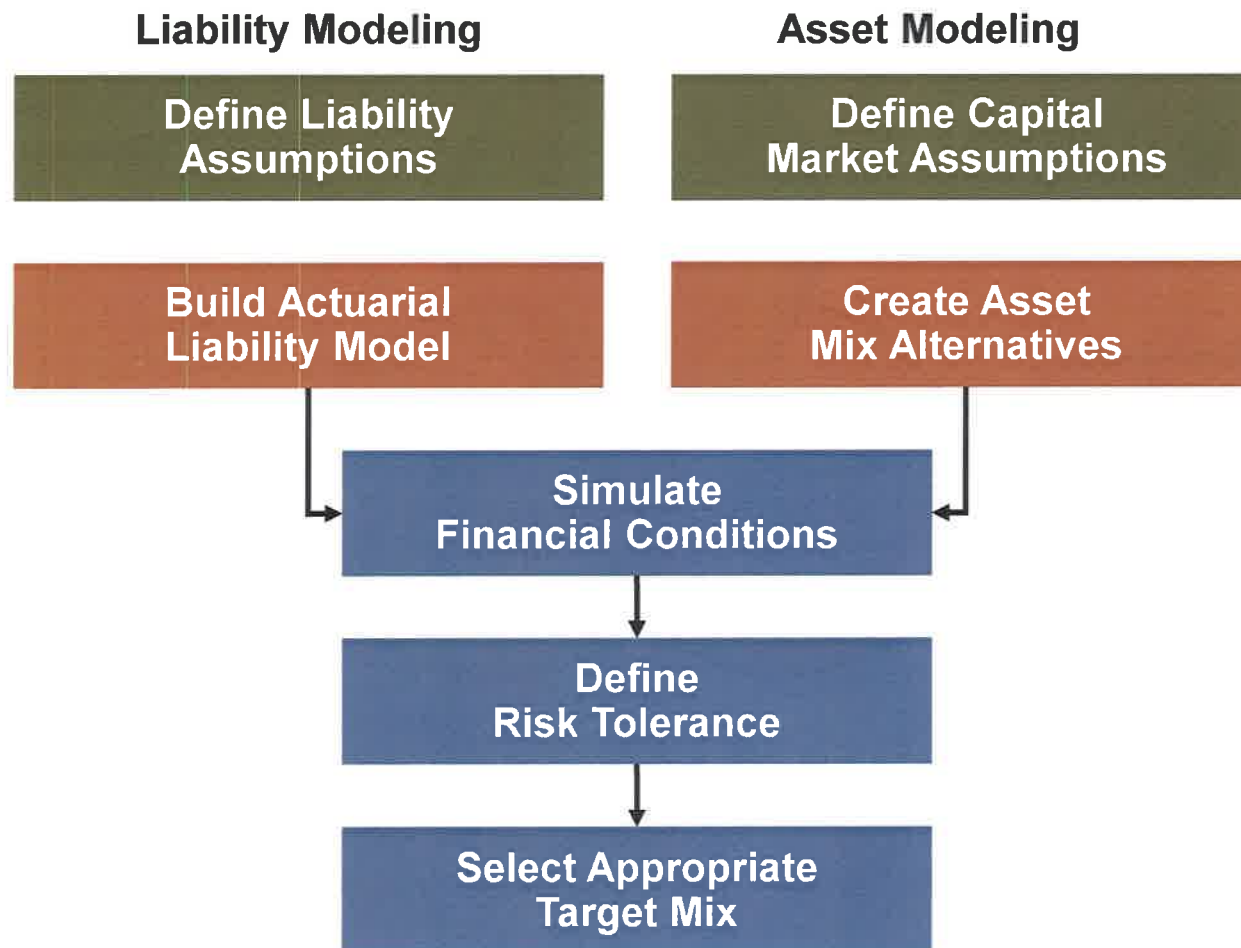
- What type/kind of benefits?
- What level of benefit?
- When and to whom are they payable?



Funding Policy

- How will the benefits be funded?
- What assumed investment return?
- How are deficits amortized?
- What actuarial methodologies are applied to dampen contribution volatility?

Callan Asset Allocation and Liability Process

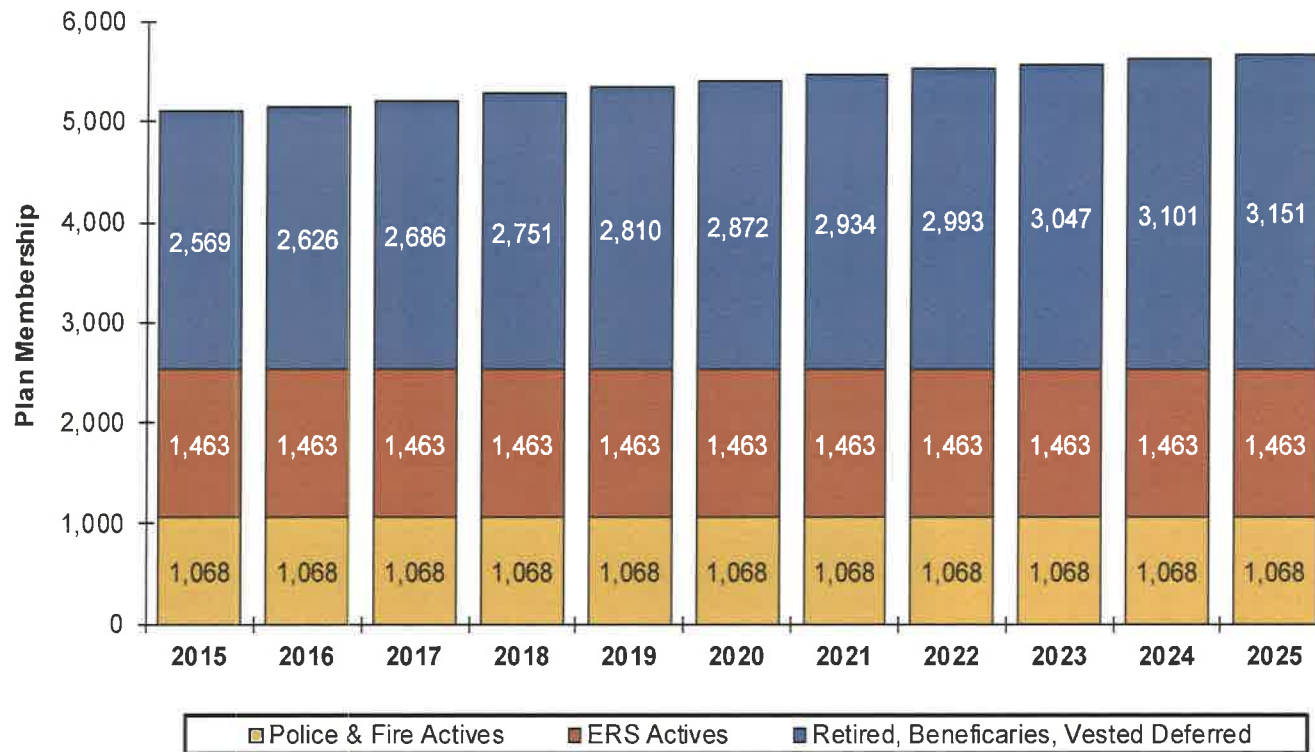


Liability Model and Key Actuarial Assumptions

Variable	Police & Fire	Employees' Retirement System	Key Actuarial Assumptions	Description
As of 12/31/2014			Investment Return	7.75%
Total Actuarial Liability	\$632mm	\$590mm	Price Inflation	3.25%
Market Value of Assets	\$611mm	\$567mm	Salary Growth	4.0% + merit & longevity
Actuarial Value of Assets	\$601mm	\$560mm	Payroll Growth	4.0%
Actuarial Funded Status	95.1%	94.9%		
Market Funded Status	96.7%	96.1%		
Fiscal Year Ending 2016				
Employer Normal Cost	15.5%	8.7%		
Amortization of Unfunded Liability	3.3%	2.9%		
Employer Rate for FY 2016	18.8%	11.6%		

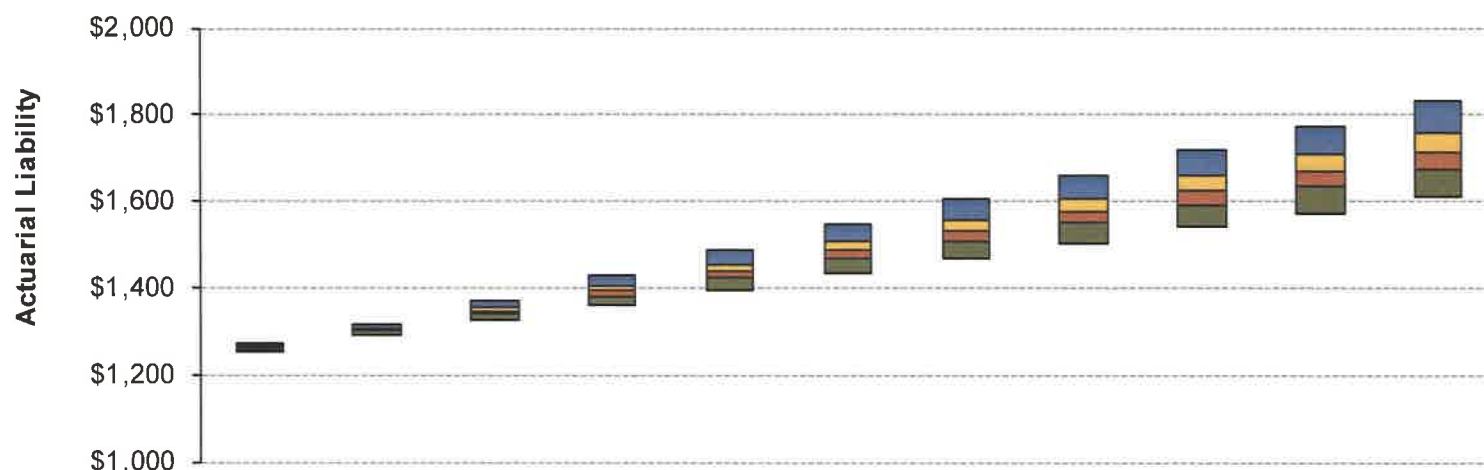
- Asset-liability projections are based on the 12/31/2014 actuarial reports for the Police & Fire Retirement System and the Employees' Retirement System.
 - 2015 investment experience of -.21% is reflected in all projections

Plan Membership



- Active members are held constant
 - Future new hires replace exits due to retirement, death, disability, and withdrawal
 - Active membership is constant (implies 0% workforce growth)
- Average age of active members is 40 and 47 for Police & Fire and ERS actives respectively.

Actuarial Liability



Percentile	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
97.5th	\$1,262	\$1,316	\$1,372	\$1,429	\$1,487	\$1,545	\$1,603	\$1,658	\$1,719	\$1,774	\$1,831
75th	1,262	1,308	1,355	1,405	1,455	1,506	1,557	1,606	1,657	1,707	1,756
50th	1,262	1,303	1,347	1,393	1,439	1,486	1,532	1,578	1,625	1,669	1,714
25th	1,262	1,299	1,339	1,381	1,424	1,467	1,509	1,552	1,592	1,634	1,676
2.5th	1,262	1,291	1,324	1,359	1,395	1,432	1,467	1,504	1,540	1,573	1,608
Range	0	25	48	70	92	113	136	154	179	201	223

- Plan liabilities are increasing at a steady pace – typical for an open plan
- Based on Callan's 10-year capital market expectations, the expected liability return is 7.4%
 - The liabilities are not growing at the full interest cost of 7.75% since Callan's inflation expectation of 2.25% is lower than the actuary's assumed inflation of 3.25%

Capital Market Process

Development and Coverage

- Annual Process to update 10-Year Projections
 - Evaluate current environment and economic outlook
 - Examine relations between economy and historical asset class performance
 - Create 10-year risk, return, and correlation projections
 - Test projections for reasonable results
- Incorporates both advanced quantitative modeling as well as qualitative feedback and expertise of Callan consulting professionals.
- Broad Asset Classes and Inflation
 - US Equity
 - International Equity
 - *Developed Markets*
 - *Emerging Markets*
 - US Fixed Income
 - Non-US Fixed Income
 - Private Real Estate
 - Private Equity
 - Real Assets
 - Cash
 - Inflation

Callan 2016 - 2025 Capital Market Expectations

Asset Class	Index	Expected Return ¹	Standard Deviation
Equities			
Broad Domestic Equity	Russell 3000	7.35%	18.70%
Global ex-US Equity	MSCI ACWI ex USA	7.55%	21.30%
Emerging Markets Equity	MSCI Emerging Markets	7.60%	27.85%
Private Equity	TR Post Venture Capital	8.15%	32.80%
Fixed Income			
Short Duration	Barclays 1-3 Yr G/C	2.60%	2.25%
US Fixed	Barclays Aggregate	3.00%	3.75%
Non-US Fixed	Barclays Global Aggregate ex-US	1.40%	9.20%
High Yield	Barclays High Yield	5.00%	10.50%
Emerging Market Debt	EMBI Global Diversified	4.60%	9.90%
Real Assets			
Real Estate	Callan Real Estate Database	6.00%	16.45%
Timber	NCREIF Timber	6.50%	17.50%
Diversified Real Assets	Proxy ²	5.40%	11.80%
TIPS	Barclays TIPS	3.00%	5.30%
Commodities	Bloomberg Commodity	2.75%	18.50%
US REITs	NAREIT	7.00%	21.00%
Natural Resources Equity	S&P500 Global Nat. Res.	6.80%	24.00%
Other			
Diversifying Assets	Proxy ³	6.20%	11.40%
Cash Equivalents	90-Day T-Bill	2.25%	0.90%
Inflation	CPI-U	2.25%	1.50%

1 - 10-year annualized return

2 - Implementation varies widely. Assumed 20% REITs/20% NREQ / 30% Commodities/30% TIPS

3 - Implementation varies widely. Assumed a global 60/40 portfolio.

- Capital market expectations represent passive exposure (beta only), net of fees, except for private market investments – real estate and private equity.

Callan 2016 - 2025 Capital Market Expectations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	US Broad Equity	1.00														
2	Global Ex-US Equity	0.88	1.00													
3	Short Duration	-0.24	-0.25	1.00												
4	US Fixed	-0.11	-0.12	0.87	1.00											
5	Non US Fixed	0.01	0.01	0.48	0.51	1.00										
6	High Yield	0.64	0.63	-0.17	0.02	0.12	1.00									
7	EMD	0.58	0.55	-0.12	0.03	0.01	0.60	1.00								
8	Timber	0.52	0.44	-0.03	-0.02	-0.04	0.35	0.40	1.00							
9	Real Estate	0.73	0.67	-0.14	-0.02	-0.05	0.56	0.45	0.45	1.00						
10	Real Assets	0.69	0.68	-0.18	-0.07	0.09	0.43	0.50	0.40	0.64	1.00					
11	TIPS	-0.05	-0.05	0.53	0.58	0.34	0.06	0.15	0.00	0.01	0.23	1.00				
12	Commodities	0.17	0.18	-0.22	-0.12	0.05	0.10	0.19	0.18	0.20	0.72	0.10	1.00			
13	US REITs	0.85	0.85	-0.20	-0.10	0.01	0.49	0.51	0.44	0.80	0.78	0.11	0.20	1.00		
14	NR Equity	0.77	0.75	-0.18	-0.15	0.04	0.49	0.51	0.40	0.65	0.87	0.02	0.40	0.78	1.00	
15	Diversifying Assets	0.49	0.47	-0.12	0.08	-0.08	0.57	0.12	0.30	0.50	0.43	0.06	0.30	0.40	0.35	1.00

- Capital market expectations represent passive exposure (beta only), net of fees, except for private market investments – real estate and private equity.

Goals-Based Investing



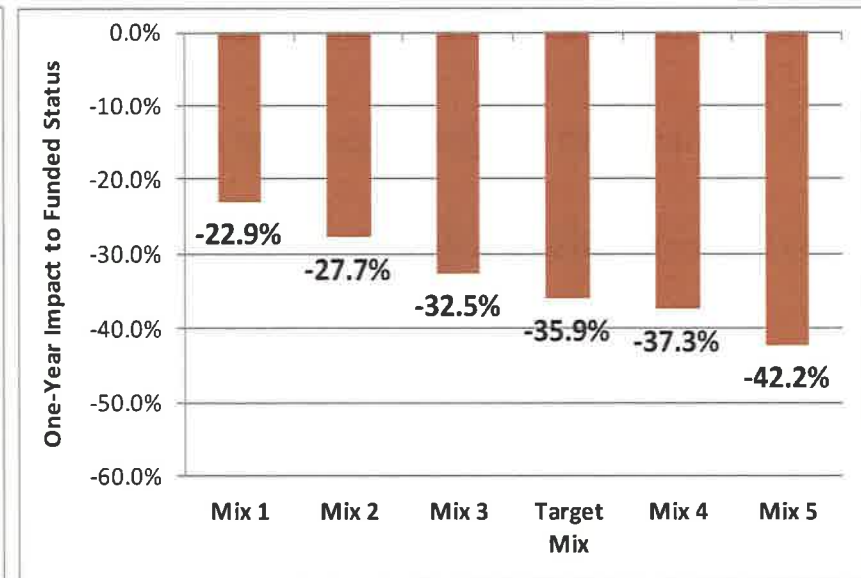
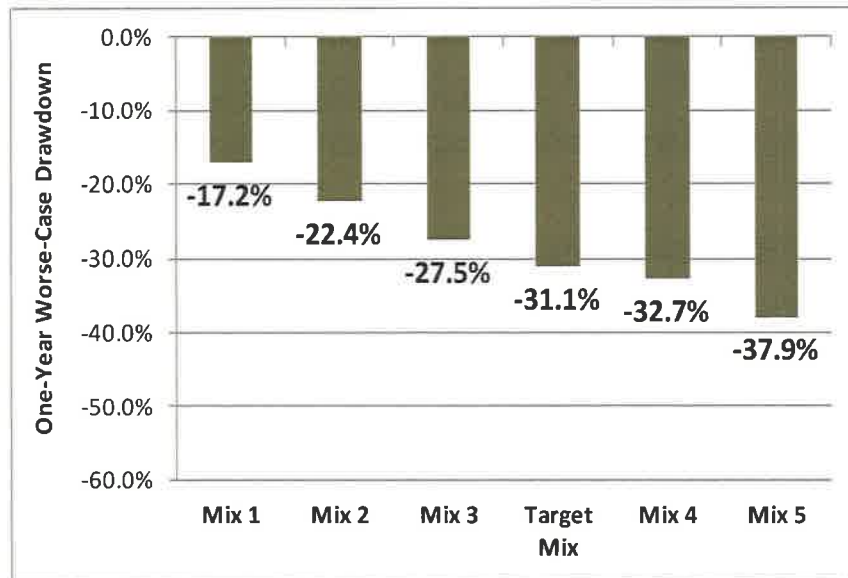
- Current portfolio is growth-oriented, which is suitable for a long-term investor

Current Asset Classes

Asset Class	Current Target	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US Equity	40.0%	0.0%	100.0%	19%	24%	29%	34%	40%
Global ex-US Equity	22.0%	0.0%	100.0%	15%	20%	24%	28%	32%
US Fixed	22.0%	0.0%	100.0%	50%	40%	30%	20%	10%
Real Estate	5.0%	0.0%	100.0%	5%	6%	8%	10%	11%
Timber	5.0%	0.0%	5.0%	5%	5%	5%	5%	5%
TIPS	3.0%	0.0%	100.0%	4%	2%	1%	0%	0%
Commodities	<u>3.0%</u>	0.0%	100.0%	<u>3%</u>	<u>3%</u>	<u>3%</u>	<u>3%</u>	<u>2%</u>
Total	100%			100%	100%	100%	100%	100%
Expected Return	6.6%			5.4%	5.9%	6.4%	6.8%	7.2%
Standard Deviation	13.0%			7.8%	9.7%	11.7%	13.7%	15.7%
Growth Assets	62%			34%	43%	53%	62%	72%
Risk Mitigating	22%			50%	40%	30%	20%	10%
Real Assets	16%			16%	17%	17%	17%	19%
Diversifying Assets	0%			0%	0%	0%	0%	0%

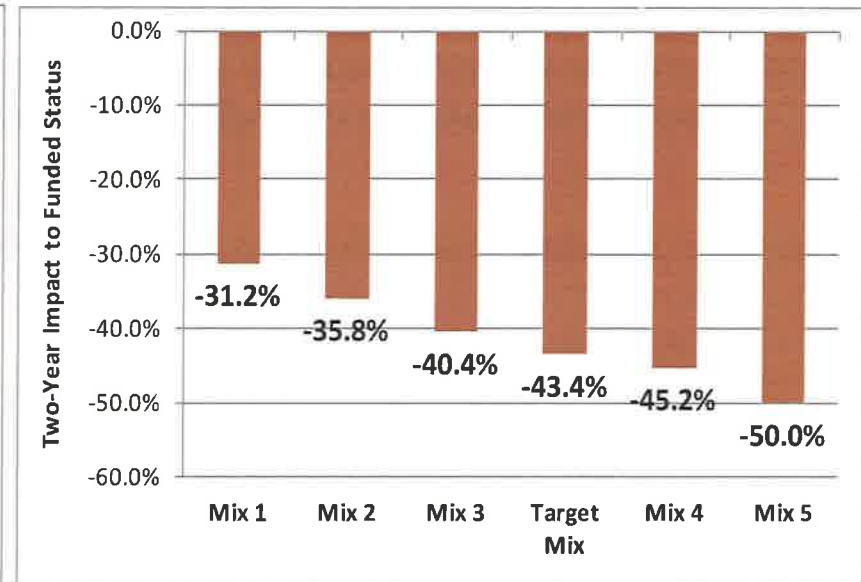
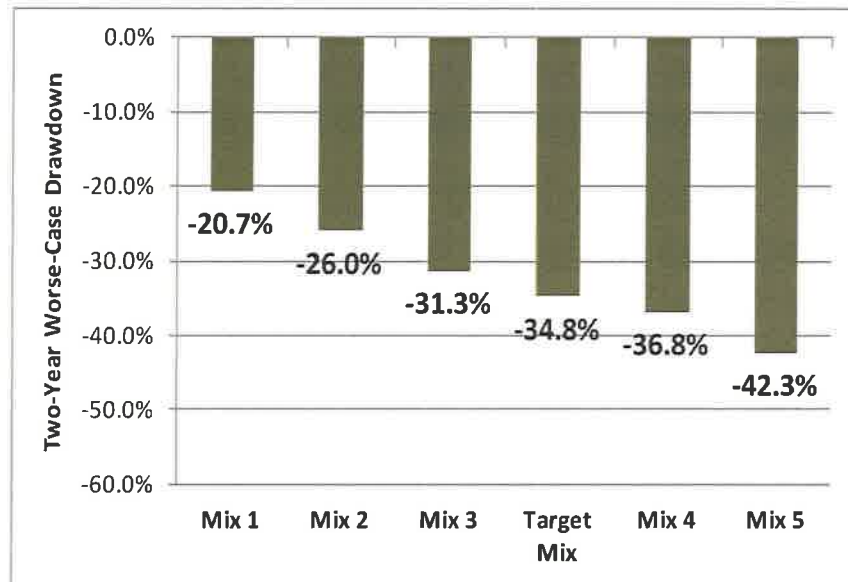
- The 10-year expected return of the Current Target is 6.6%
- None of the above asset mixes are expected to attain a 7.4% return

One-Year Drawdown



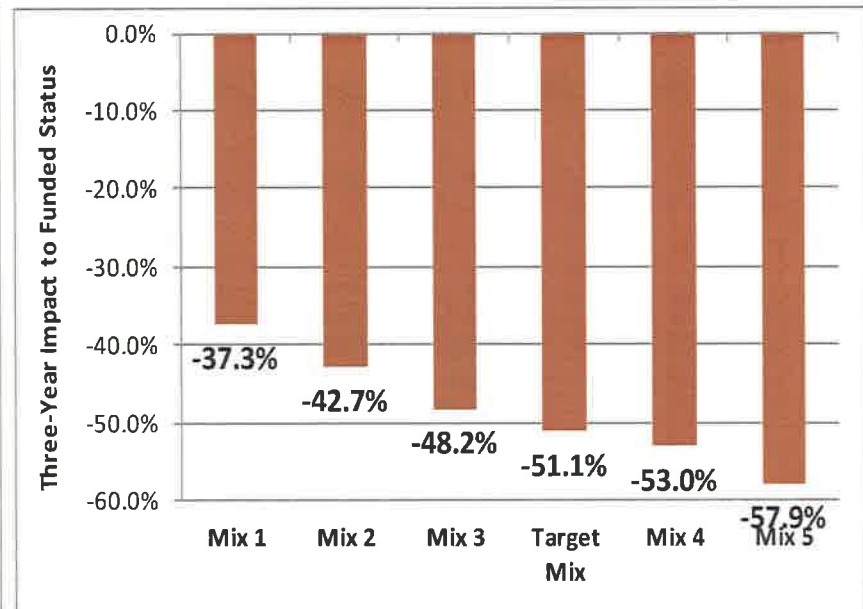
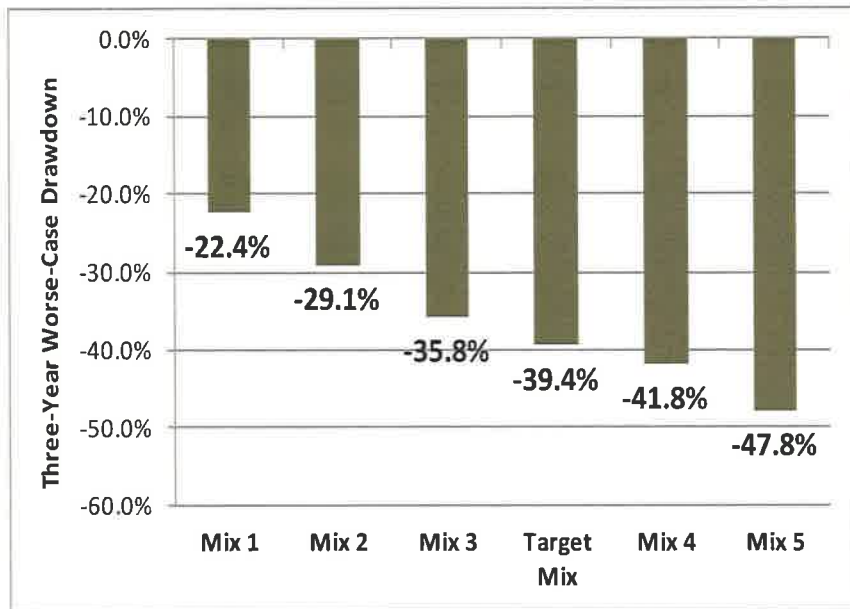
- The graph on the left depicts the worse-case (97.5th percentile) drawdown based on simulated annual returns over the next 10 years.
- The graph on the right depicts the impact to funded status given a one-year worse-case drawdown and an expected liability return of 7.4%. Benefits and contributions are not reflected.
 - E.g. Mix 1 Impact to Funded Status = $(1 - 0.172) / 1.074 - 1 = -22.9\%$

Two-Year Drawdown



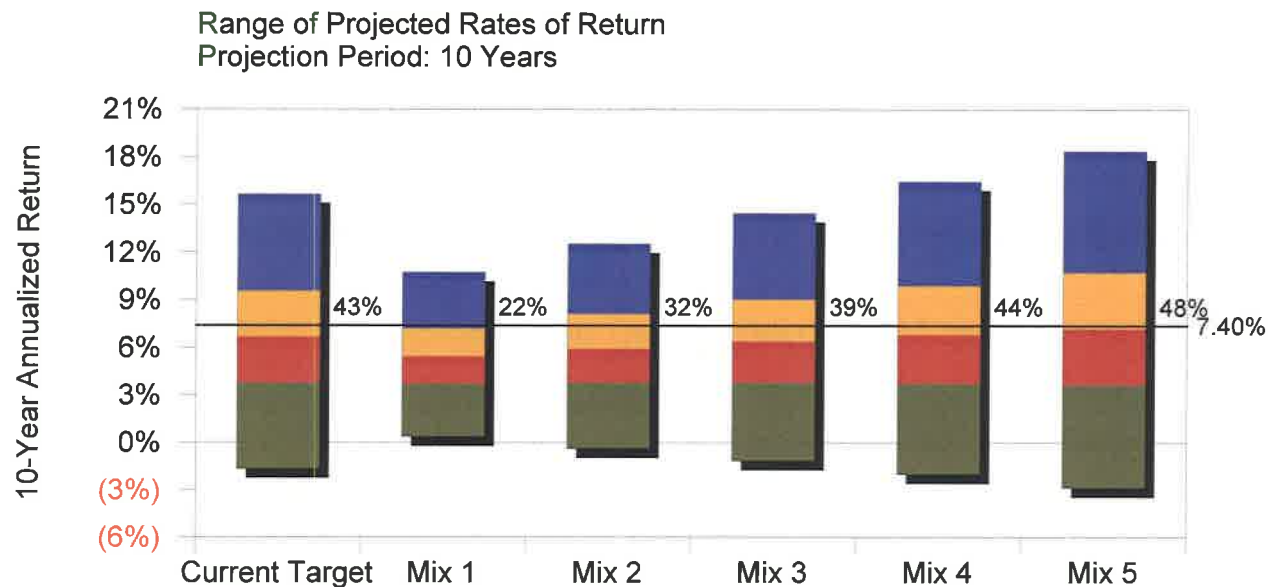
- The graph on the left depicts the worse-case (97.5th percentile) drawdown based on two years of simulated returns.
 - Drawdown is the cumulative return from peak to trough. Thus, the above chart reflects two years of consecutive negative returns.
- The graph on the right depicts the impact to funded status given a two-year worse-case drawdown and an expected liability return of 7.4%. Benefits and contributions are not reflected.
 - E.g. Mix 1 Impact to Funded Status = $(1 - .207) / 1.074^2 - 1 = -31.2\%$

Three-Year Drawdown



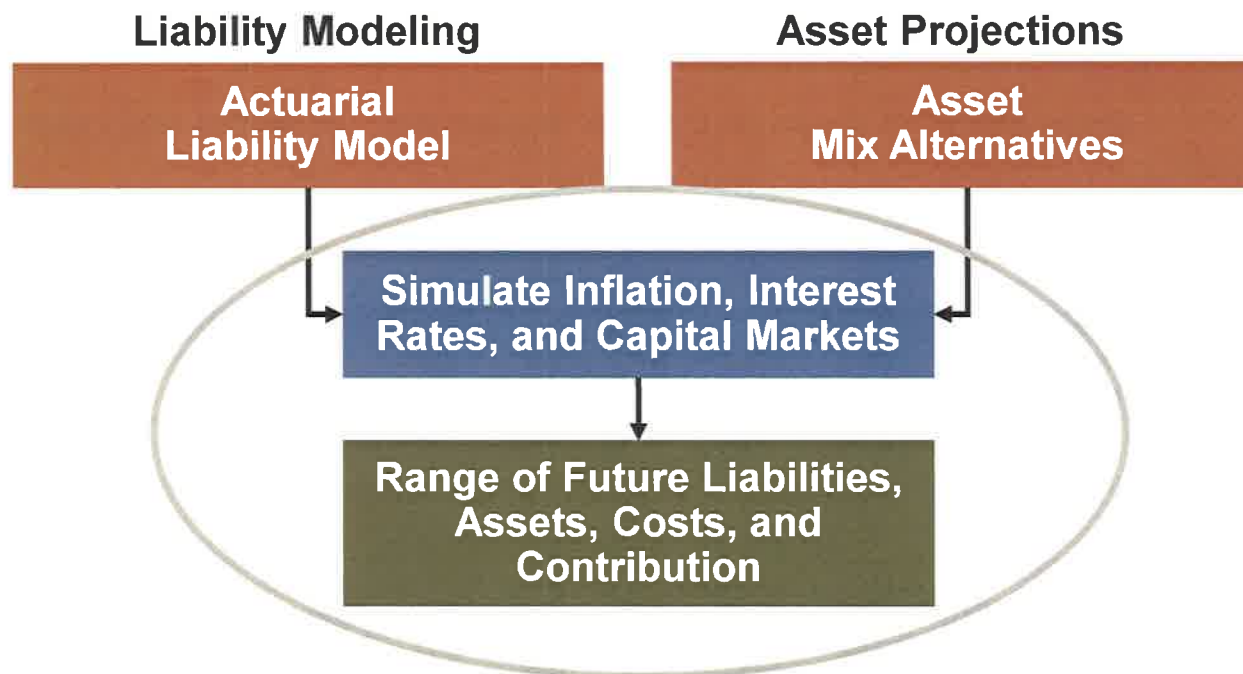
- The graph on the left depicts the worse-case (97.5th percentile) drawdown based on three years of simulated returns.
 - Drawdown is the cumulative return from peak to trough. Thus, the above chart reflects three years of consecutive negative returns.
- The graph on the right depicts the impact to funded status given a three-year worse-case drawdown and an expected liability return of 7.4%. Benefits and contributions are not reflected.
 - E.g. Mix 1 Impact to Funded Status = $(1 - 0.224) / 1.074^3 - 1 = -37.3\%$

Current Asset Classes: 10-Year Annualized Returns



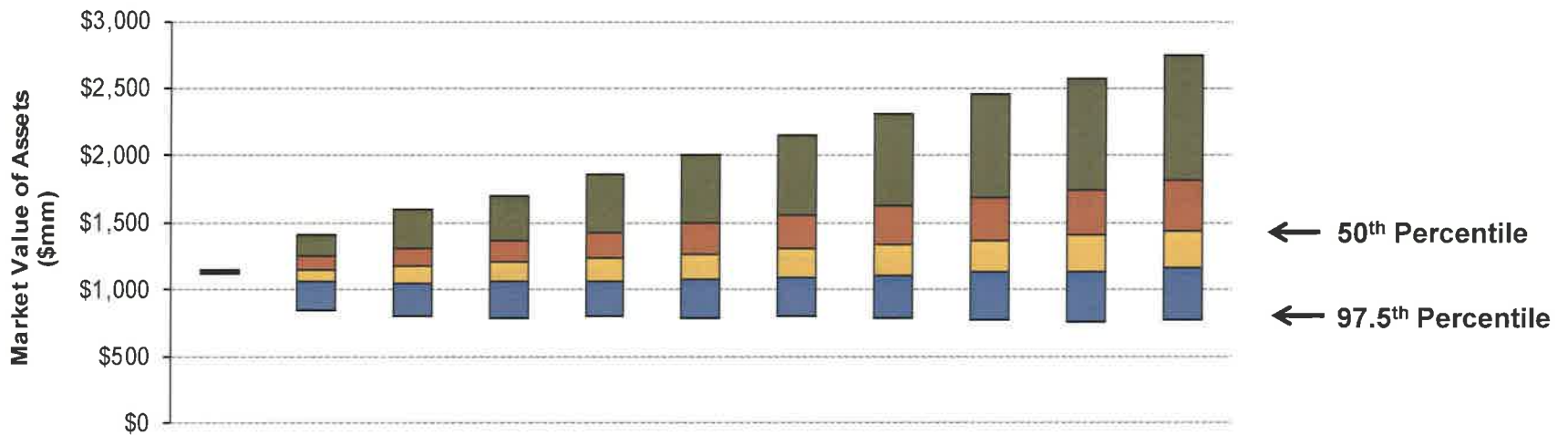
- 10-year return projections appear less volatile as investment gains and losses offset over multiple years.
- Mixes are not expected to attain a 7.4% return target over the next 10 years (2016-2025) but the probability is still 22-48% across all the mixes.

Simulate Financial Condition



- Generate 2,000 simulations per year, per asset mix to capture possible future economic scenarios and their effect on the portfolio
- The simulation results were then ranked from highest to lowest to develop probability distributions
- Separate asset-liability projections were conducted for the Police & Fire Retirement System and Employees' Retirement System. Results are typically aggregated (e.g. assets, liabilities) when illustrated in this section.

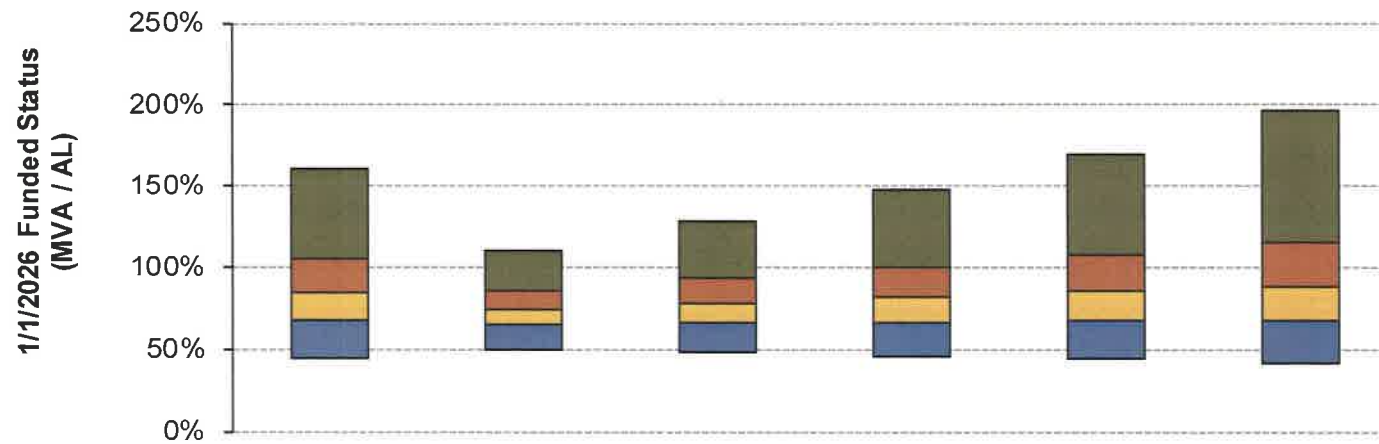
Market Value of Assets for Current Target Mix



Percentile	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2.5th	\$1,135	\$1,404	\$1,605	\$1,696	\$1,861	\$2,007	\$2,154	\$2,306	\$2,459	\$2,579	\$2,746
25th	1,135	1,249	1,315	1,367	1,430	1,494	1,556	1,622	1,685	1,746	1,811
50th	1,135	1,156	1,180	1,210	1,241	1,264	1,303	1,339	1,372	1,407	1,446
75th	1,135	1,064	1,054	1,057	1,062	1,076	1,095	1,104	1,131	1,141	1,157
97.5th	1,135	845	795	779	806	793	796	781	765	761	769
Range	0	559	809	916	1,056	1,214	1,357	1,525	1,694	1,818	1,977

- The expected outcome is the 50th percentile, a 50/50 chance of occurrence
- The worse case scenario is the 97.5th percentile; a 1 in 40 chance of occurrence
 - For example, there is a 1 in 40 chance (2.5% probability) that the 1/1/2026 market value of assets will be \$769 mm or less.

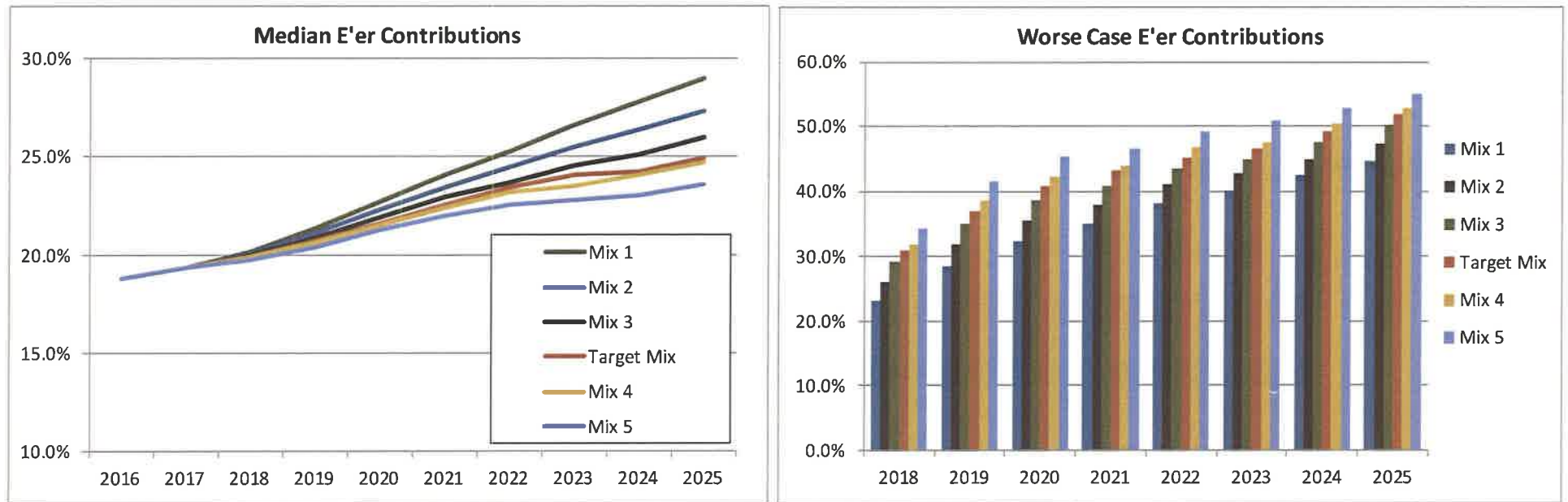
1/1/2026 Market Funded Status



Percentile	Target	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
2.5th	161%	110%	128%	147%	169%	196%
25th	105%	85%	93%	100%	108%	115%
50th	84%	74%	78%	82%	86%	89%
75th	68%	64%	66%	67%	67%	68%
97.5th	45%	50%	48%	46%	44%	42%
Expected Return	6.6%	5.4%	5.9%	6.4%	6.8%	7.2%
Standard Deviation	13.0%	7.8%	9.7%	11.7%	13.7%	15.7%

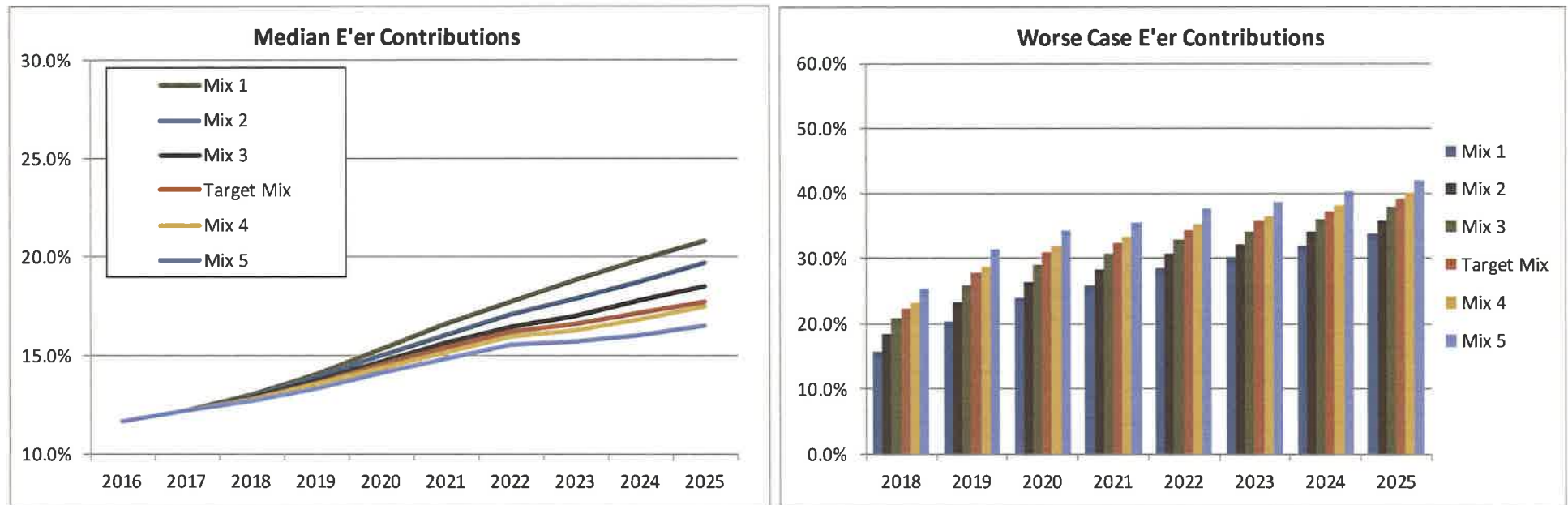
- More aggressive mixes are **expected** to have a higher funded status at the end of 10 years but will have a lower funded status in a worse-case scenario (97.5th percentile).

Police & Fire: Projected Contributions (% of Pay)



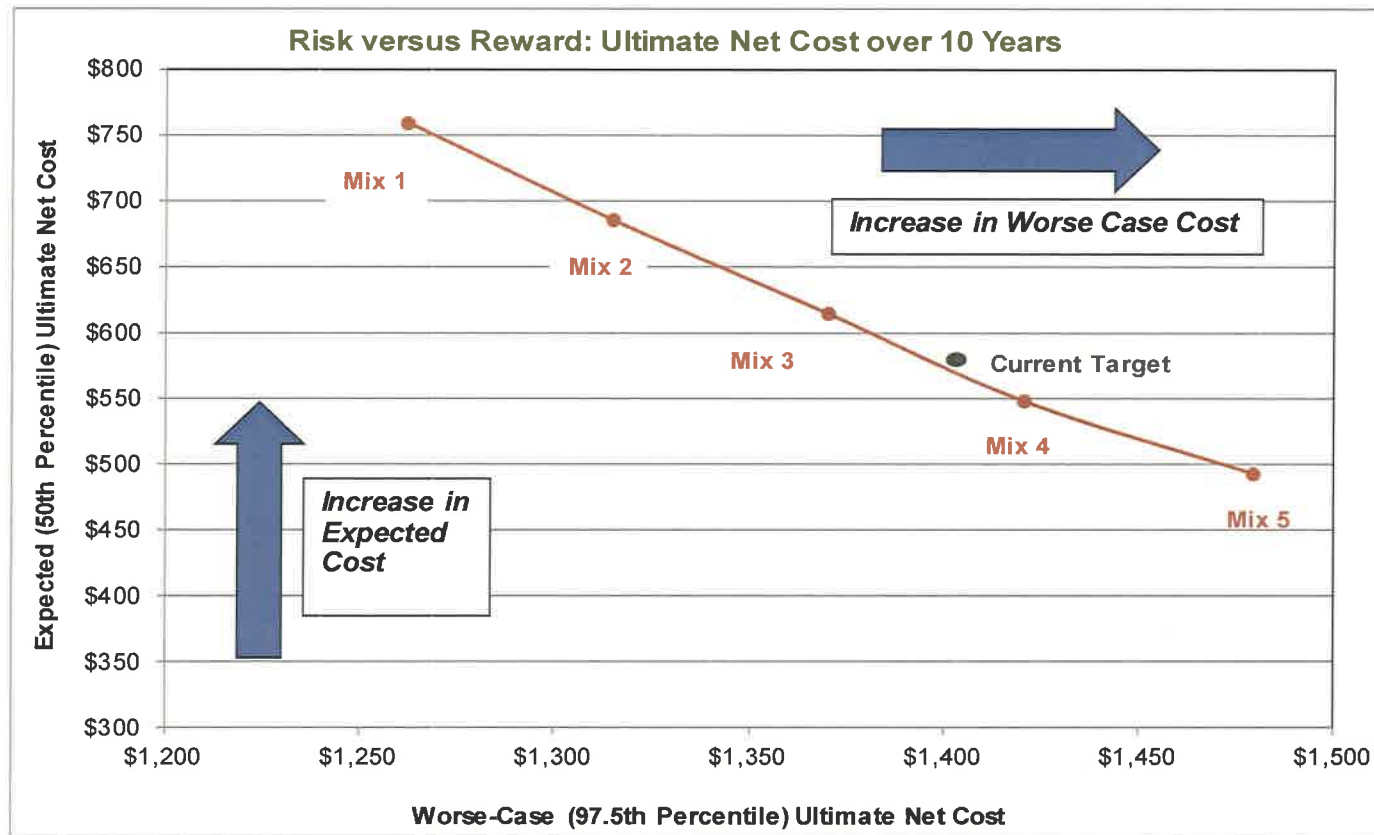
- The above two graphs illustrate the reward-risk trade-off of the alternative mixes in contribution space
 - The left side graph shows expected contributions and the reward for taking more risk
 - The right side graph shows the worse-case contribution sorted by individual calendar year (the graph does not convey a possible pattern of contributions). In a worse-case scenario, contributions are higher for a more aggressive asset mix.
- Median contributions goes from 18.8% in 2016 to 24-29% in 2025 depending on the asset mix
- 2025 worse case contributions range from 45% to 55% depending on the asset mix

ERS: Projected Contributions (% of Pay)



- ERS has the same pattern of contributions as Police & Fire but at a lower absolute level
 - Median contributions go from 11.6% in 2016 to 16-21% in 2025 depending on the asset mix
 - 2025 worse case contributions range from 34% to 42% depending on the asset mix

Ultimate Net Cost



- Ultimate Net Cost (UNC) = 10 year cumulative contributions (2016 - 2025) + 1/1/2026 Unfunded Liability
 - What you paid over 10 years + what you owe at the end of 10 years
- An approximate linear risk-reward trade-off exists between the alternative mixes.
- The current Target mix is slightly sub-optimal based on Callan's 10-year capital market expectations

Decision Factors

Factor	Description
Return Objective	<ul style="list-style-type: none"> Although the assumed investment return is 7.75% the expected liability return is 7.4% based on lower inflation expectations over the next 10 years (expect 2.25%) None of the alternative mixes are expected to attain 7.4% over 2016-2025
Time Horizon	<ul style="list-style-type: none"> Indefinite (plan is open)
Liquidity Needs	<ul style="list-style-type: none"> Liquidity needs are low over the next 10 years and don't preclude illiquid investments
Actuarial Methodology	<ul style="list-style-type: none"> Normal Cost plus rolling 20-year amortization Assets are smoothed
Contribution Risk	<ul style="list-style-type: none"> Clear trade-off between lower median contribution rates and higher worse case contribution rates
Risk Tolerance	<ul style="list-style-type: none"> Risk tolerance is the ability and willingness to take risk What is comfort level in taking more risk? Consider worse-case results for projected funded status, ultimate net cost and annual returns
Liability Growth	<ul style="list-style-type: none"> Liabilities are growing Liability duration is 11 years
Funded Status*	<ul style="list-style-type: none"> Combined Plans are projected to fall from 95% to 90% as of 12/31/2015 Full funding (100%) is not expected by 2026 under the current benefit/funding policy and Callan 2016-2025 capital market expectations

** A more aggressive asset allocation may assist with closing a plan deficit over the long run. However, a more aggressive asset allocation can make the financial situation worse, if investment performance is below average.*

Recommended Options

Asset Class	Current Target	Add DRA		Current ACs		Current ACs	
		Chg	Option A	Chg	Option B	Chg	Option C
Broad US Equity	40.0%	-1.0%	39.0%	-1.0%	39.0%	0.0%	40.0%
Global ex-US Equity	22.0%	4.0%	26.0%	4.0%	26.0%	5.0%	27.0%
US Fixed	22.0%	-3.0%	19.0%	-3.0%	19.0%	-3.0%	19.0%
Real Estate	5.0%	1.0%	6.0%	5.0%	10.0%	3.0%	8.0%
Timber	5.0%	-1.0%	4.0%	0.0%	5.0%	0.0%	5.0%
TIPS	3.0%	-3.0%	0.0%	-3.0%	0.0%	-3.0%	0.0%
Commodities	3.0%	-3.0%	0.0%	-3.0%	0.0%	-3.0%	0.0%
Diversified Real Assets	0.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Total	100.0%		100.0%		100.0%		100.0%
Expected Return	6.6%	0.2%	6.8%	0.2%	6.9%	0.2%	6.9%
Standard Deviation	13.0%	1.0%	13.9%	1.2%	14.1%	1.3%	14.2%
Sharpe Ratio	0.34		0.33		0.33		0.33
Growth Assets	62%	3.0%	65%	3.0%	65%	5.0%	67%
Risk Mitigating	22%	-2.0%	20%	-2.0%	20%	-2.0%	20%
Real Assets	16%	-1.0%	15%	-1.0%	15%	-3.0%	13%
Illiquid Investments	10%		10%		15%		13%

- Options target 1% to cash and 19% to fixed income.
- Strategic allocation to TIPS and Commodities are eliminated in the three Options.
- The three Options offer more return and volatility than the Current Target Mix.

Recommended Options

- Recommend eliminating strategic allocation to TIPs and Commodities
 - A DRA strategy could be added to provide short-intermediate term inflation protection and diversification (Option A)
- Private real estate is increased across all the Options
 - For a long-term investor, core real estate should anchor real assets exposure
 - Real estate provides long-term growth, offers active management potential and is a long-term inflation hedge.
- A 1% allocation to Cash assists with liquidity needs



Selecting Investment Advisers for Pension Fund Assets

Advisory:

GFOA Advisories identify specific policies and procedures necessary to minimize a government's exposure to potential loss in connection with its financial management activities. It is not to be interpreted as GFOA sanctioning the underlying activity that gives rise to the exposure.

BACKGROUND:

Boards of Trustees of many state and local government pension plans have augmented their fiduciary responsibility to invest pension plan assets by retaining advisers to perform various portfolio services, ranging from advice-only consultation to fully discretionary management. As the use of professional investment advisers has become more commonplace, federal regulatory scrutiny of the relationship between investment advisers and public funds has increased.

RECOMMENDATION:

GFOA has consistently recommended that state and local governments exercise caution in their selection of investment advisers for pension plan assets. This is particularly important because the fiduciary responsibility for pension plan assets cannot be delegated to an investment adviser. GFOA urges state and local government pension plans to develop policies regarding the procurement of investment advisory services prior to retaining an investment adviser. In accordance with state and local statutes, pension regulations, or other requirements, these policies should address the following:

1. The responsible public official or the governing board should appoint a pension investment consultant and/or review committee to conduct the search process.
2. A competitive, merit-based procurement process for selection should be employed.
3. Responsibilities of the investment adviser should be clearly stated in writing.
4. The consultant and/or review committee should determine the criteria to be used in the selection. Criteria may include, but are not limited to
 - style parameters based on portfolio, including asset class and specialty focus as appropriate,
 - number of years the firm has been in business,
 - dollar amount of other public pension assets under current management,
 - dollar amount of the total assets in the specific style being considered,
 - investment performance versus appropriate benchmarks, and

- education and experience level of key personnel

5. The consultant and/or review committee should determine the sources for candidates to be considered, including but not limited to

- consultants' database on investment advisory firms,
- industry reports and articles,
- marketing materials,
- references from other pension plans or jurisdictions, and
- other governmental entity resources and information.

6. The consultant and/or review committee should, through the use of the RFP process, perform due diligence on candidates, including but not limited to:

- quantitative information,
- organizational structure of firm,
- experience and depth of personnel in firm, including turnover of key personnel,
- firm-specific investment philosophy and portfolio management strategies,
- trading process, and costs,
- system of risk management safeguards, investment policy compliance,
- management fees, and favored nations pricing, if available,
- references from other pension clients,
- interviews with finalists,
- delivery of investment advisory Form ADV Part I and Part II (including Schedule I) prior to contract execution.

After the consultant and/or review committee has made a recommendation regarding the selection of the pension plan investment adviser, the investment management agreement should include the following:

- identification of account management personnel and their fiduciary responsibilities,
- determination of professional liability insurance for errors and omissions,
- reporting requirements,
- establishment of fee and terms of invoicing and payment,
- procedure for termination of contract by either party,
- specifications related to nondiscrimination in contracting and ethics rules,
- procedure for immediate notification of any changes in firm ownership or key personnel,
- certification that the investment adviser will adhere to the investment policy.

The pension board or administrative officer managing the investment adviser contract should comply with the following ethical considerations:

- adherence to all jurisdiction's and pension boards ethics laws, rules and regulations related to procurement and involvement with contractors, including those related to political contributions,
- disclosure to pension board of any inherent or potential conflicts of interest in dealing with specific investment advisers prior to taking any official action, and
- adherence to the GFOA Code of Professional Ethics.

The pension board should develop and implement an ongoing risk control program, including ongoing compliance reviews.

- periodic due diligence review and investment and performance monitoring
- independent audits

- timely reconciliations and
- other appropriate internal control measures.

References:

- An Elected Officials Guide to Investing, M. Corinne Larson, GFOA, 1995.
- An Introduction to Investment Advisers for State and Local Govts, M. Corinne Larson, GFOA, 1996.
- Investing Public Funds, Second Edition, Girard Miller with M. Corinne Larson and W. Paul Zorn, GFOA, 1998.

203 N. LaSalle Street - Suite 2700 | Chicago, IL 60601-1210 | Phone: (312) 977-9700 - Fax: (312) 977-4806



Selecting Fund Managers and Consultants – What Do Trustees Look For?

Research partnership between Aon Hewitt and Leeds University Business School

Background

Aon is committed to supporting trustees to achieve the right outcomes for their pension schemes.

With this in mind, one of the areas we are currently focusing on is the highly topical and interesting subject of behavioural finance. Specifically, we are looking at how behavioural biases can affect the way in which defined benefit (DB) pension scheme trustees make decisions about their scheme investments.

As a first step, we partnered with Behave London to develop **The Aon Trustee Checklist**, a practical tool designed to reduce decision-making bias in trustee meetings.

Later, we partnered with **Leeds University Business School** (LUBS) to undertake the first major piece of academic research exploring trustee investment decision-making, including perceptions and understanding of costs and value, investment risk and return, manager selection and the role of bias in all of these areas.

Dr Iain Clacher led the research, working with Dr Richard Edgar Hodgett, a lecturer in Business Analytics and Decision Science at LUBS, and Dr Simon McNair, Leverhulme Early Career Research Fellow based at the LUBS Centre for Decision Research. Dr Clacher is currently Associate Professor in Accounting and Finance at Leeds University Business School and is the co-director of the Centre for Advanced Studies in Finance. More information about our research partner, including team biographies, can be found on page 12.

In the second half of 2016, we conducted several email and social media campaigns, inviting trustees to participate in the research. 197 responded and completed an online survey, designed by the research team. Additionally, Dr Clacher conducted 10 semi-structured interviews with representatives of a range of pension schemes.

This is the third and final report in a series of reports analysing the research findings, which set out to map the trustee landscape and provide deeper analysis on trustees' perceptions of costs and value, investment risk and return as well as manager and consultant selection.

If you have any questions about this research, please contact the team — contact details can be found at the end of this report.

Trustees, fund managers and investment consultants

This paper is the third in the series analysing trustees of UK defined benefit (DB) pension schemes and examines the relationship between trustees and their fund managers and investment consultants. To the best of our knowledge, this is the first time that these questions have been asked of trustees, and the results help to shed light on these interactions that are fundamental to the investment process in pension funds.

The results of the first paper, *Mapping the Trustee Landscape*¹, found that trustees were highly educated, and had a range of professional qualifications. In addition, the majority of trustees exhibited a high degree of financial literacy when faced with questions on core concepts in investment and finance, such as time value of money, compounding, and inflation. However, the results of the first paper also showed that trustee boards lacked both age and gender diversity, which may not be optimal in making decisions. Moreover, homogeneity on trustee boards is an environment where groupthink may be present, and so an awareness of this may help to mitigate the risk of groupthink dominating decision-making.

The results of the second paper, *Costs, Fees and Trustee Decision Making*², examined the salience of costs and fees with respect to investment decision making and specifically looked at both the explicit and implicit costs and fees associated with fund management. From interviews with trustees, investment strategy is their primary concern with costs and fees being a second order consideration. In looking at the issue of costs and fees, trustees were generally good at understanding explicit net of fees analyses, although trustees of smaller schemes did not perform as well. However, trustees in general are less familiar with implicit fees, and this is worse for trustees of small schemes.

The analysis for this final paper is split into two parts. The first part of the analysis examines what trustees look for in their fund managers and sheds light on fund manager selection. The second part examines trustees and their investment consultants. This area is important in light of the Financial Conduct Authority (FCA)'s *Asset Management Market Study*³, which in its investigations into the fund management industry, has raised the possibility that the investment consulting industry may be referred to the Competition and Markets Authority for investigation. The survey for this research was run prior to the results of the interim report of the FCA. However, the findings are relevant to this as it presents evidence both on the relationship between trustees and their fund managers and on the challenging of advice and reliance on investment consultants.

Dr Iain Clacher,
Leeds University Business School

Associate Professor in Accounting and Finance
Deputy Director of the Centre for Advanced
Studies in Finance (CASIF)
+44 (0)113 343 6860
i.clacher@lubs.leeds.ac.uk

Key results show:

- Trustees are focused on risk-adjusted performance in their investments and most have a longer-term view with respect to investment performance and reviewing mandates.
- Trustees of larger pension schemes place more emphasis on investment philosophy, decision-making and risk management. While trustees of smaller schemes place greater emphasis on past performance, costs and fees, fund size, firm size and volatility.
- The majority (64%) of trustees review their investment strategy at least annually and 57% review their investment managers at least once a year.
- In looking at what trustees value in their investment consultants, the picture was much more mixed, with a range of views emerging from a service provider with limited remit, to a sounding board for trustees to road-test ideas with.
- There were core elements that trustees looked for in their investment consultants regardless of scheme size, and factors such as the provision of clear advice, understanding the situation or the scheme and the goals of trustees and risk management were all ranked as key.
- The interactions between trustees and consultants are complex. Trustees have specific goals and objectives in mind and investment consultants therefore operate within those constraints, and so the choice set for decision-making is tailored to the scheme-specific circumstance.

¹ <http://www.aon.com/unitedkingdom/retirement-investment/investment/mapping-the-trustee-landscape.jsp>

² <http://www.aon.com/unitedkingdom/retirement-investment/investment/costs-fees-and-trustee-decision-making.jsp>

³ <https://www.fca.org.uk/publications/market-studies/asset-management-market-study>

Trustees and fund managers

As part of the investigation in to trustee decision-making, a number of trustees from a range of different pension schemes were interviewed to gain perspectives across a range of issues, including value in fund management. Specifically, trustees were asked ‘How would you describe value in the fund management process – what is it you pay for?’ Below are a range of responses that are reflective of the broader views that emerged through the interview process.

The first thing that becomes apparent in almost all of the comments about fund managers is that fund management is about performance and risk, which was succinctly summed up in the quote below.

“We pay for alpha not beta.”

Independent trustee, small to mid-size schemes

However, in the search for performance, this was not performance at all costs. A common theme was that performance had to be risk adjusted. What is also telling about the comment below is that it also talks about fund managers who go beyond the mandate and run excess risk relative to the stated objectives of the trustees. Crucially, this was mentioned by more than one trustee and so while it may not be common, it is a major concern that there are fund managers who increase risk in this way as the cost to the fund could be significant when such transactions underperform.

“You have to be forward looking; you cannot focus solely on past performance. There is a role for the investment consultant in describing how best to put a portfolio together eg, active with narrow parameters, active with broad remit, passive, or any combination thereof. Once the managers have been found then they have to be monitored to make sure that they still fit the strategy. We will also get rid of someone who has shot the lights out. If they go beyond the mandate, then we are running excess risk and so we will take the gains, but will not go back to them.”

Director, firm of independent trustees

One thing that also emerged from the interviews was the impact of size. Size brings buying power and the ability to be selective, which is not present at smaller fund sizes. As such, larger funds, and particularly those with in-house investment teams, can use the asset management industry in a strategic way.

“We look for where there is a genuine competitive advantage; analysts are an over-competed space and don't give a genuine edge in fund management. We look for people who do things differently and have a bias towards people who focus on downside protection and we look for people who are not on consultant buy lists. We therefore have a boutique focus.”

Chief investment officer,
large defined benefit scheme

The final issue that was covered was performance and how performance should be measured. In most instances, as the data in the following sections show, trustees understand that performance is not something that happens immediately and that a strategy or a fund requires time for performance to emerge. Trustees will therefore give fund managers time to perform, but they will also re-allocate the mandate if performance does not come through.

“We look at performance over three-years. You have to look for style and you have to give someone the space to perform. Nothing else matters but performance, but this is not make money at all costs. It has to be within the mandate.”

Chair of investment committee,
large defined benefit scheme

What do trustees look for in a fund manager?

While there is a significant amount of discussion regarding trustees and their interactions with the fund management industry, very little if anything is known about what trustees look for when selecting a fund manager.

To try to understand this issue, we asked trustees to rank the importance of a range of possible factors that they may look for when selecting a fund manager⁴.

From Figure 1, there are a number of insights that can be drawn across all funds as well as noticeable differences depending on fund size. First, for all funds, some of the softer characteristics such as relationship managers, existing relationships, useful reports, and presentations to trustees all rank lower compared to harder factors, such as decision-making and costs and fees. However, in looking at these softer factors by scheme size, trustees of smaller schemes value almost all of the soft factors more than larger schemes. In particular, presentations to trustees rank highly, and this may be down to the differing levels of investment infrastructure that exist between large and small funds.

In looking at some of the harder factors, large schemes place more emphasis on investment philosophy, decision-making, and risk management but a lower emphasis on historical performance, return volatility, and fees. Such an approach is consistent with a strategic view to pension fund investment, which is consistent with the interviews that were conducted as part of our second paper. A key result from the second paper was that strategy was the primary driver of investment decision-making with costs and fees being a secondary concern⁵. In contrast, for smaller schemes, past performance, fund assets under management, firm assets under management, volatility, and costs and fees are all more important.

This is a key result as there are clear differences in what trustees look for in fund managers. From the analysis, larger funds seem to focus more on strategic factors eg, placing less emphasis on past performance and more on investment philosophy and decision-making.

Figure 1 – When selecting fund managers, what factors are important in making this decision?



⁴ The categories we selected for this are based on, Jenkinson et al. (2016) Picking Winners? Investment Consultants' Recommendations of Fund Managers, Journal of Finance, 71, pp. 2333-2370.

⁵ See, <http://www.aon.com/unitedkingdom/retirement-investment/investment/costs-fees-and-trustee-decision-making.jsp> for more a more in-depth discussion of these issues.

Manager selection and investment strategy

The next part of this paper examines manager selection and what drives changes in mandates. In looking at Figure 2, it can be seen that trustees are actively looking at the strategy of the fund, with 64% of trustees saying that investment strategy is reviewed at least annually. Interestingly, 24% of trustees say that investment strategy is reviewed more than once a year, and this is likely due to the increased use of technology across financial services. Consequently, what was once a time-consuming and costly process is now something that can be considered quarterly. Combining this with the evidence on strategy noted above, trustees are now better able to monitor strategy as a result of having more timely data.

As well as frequently considering their investment strategy, trustees are also regularly reviewing their investment managers. From Figure 3a, 57% of trustees are reviewing their investment managers at least annually and only 25% are waiting three years or more. In looking at this by scheme size, Figure 3b shows that larger schemes are reviewing this more regularly than smaller schemes. Larger schemes are therefore undertaking more regular monitoring of investment managers relative to smaller schemes, and while this says nothing about manager rotation, larger funds are carrying out a larger amount of monitoring.

Figure 2 – How regularly does your scheme review its investment strategy?

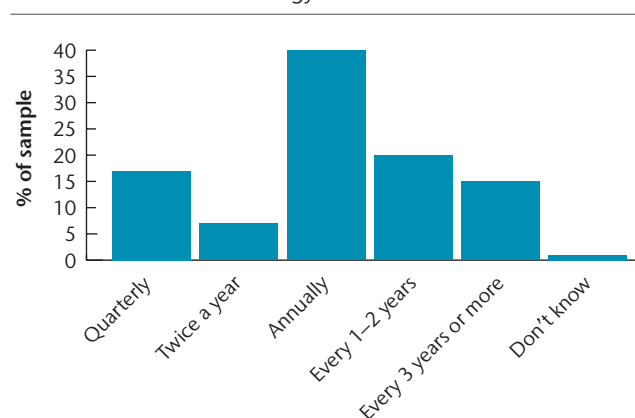


Figure 3a – How regularly does your scheme review the appointment of its investment managers?

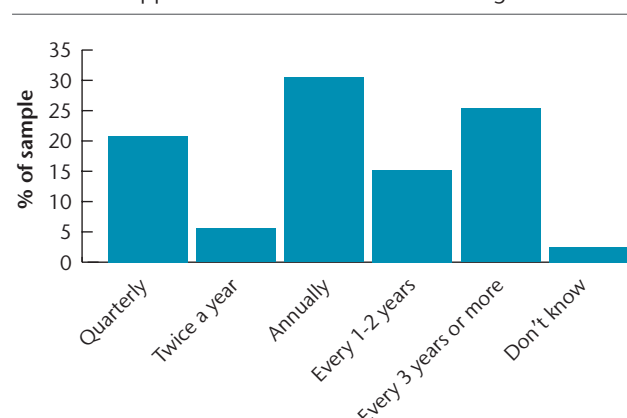
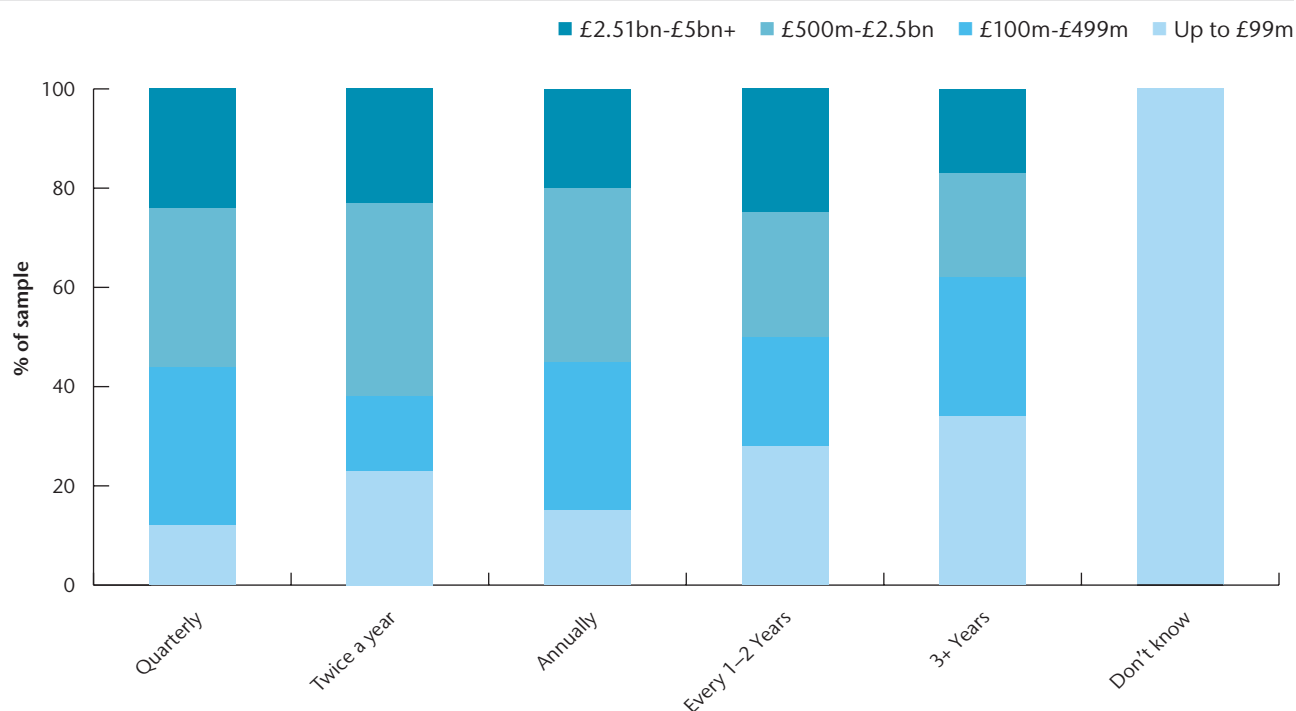
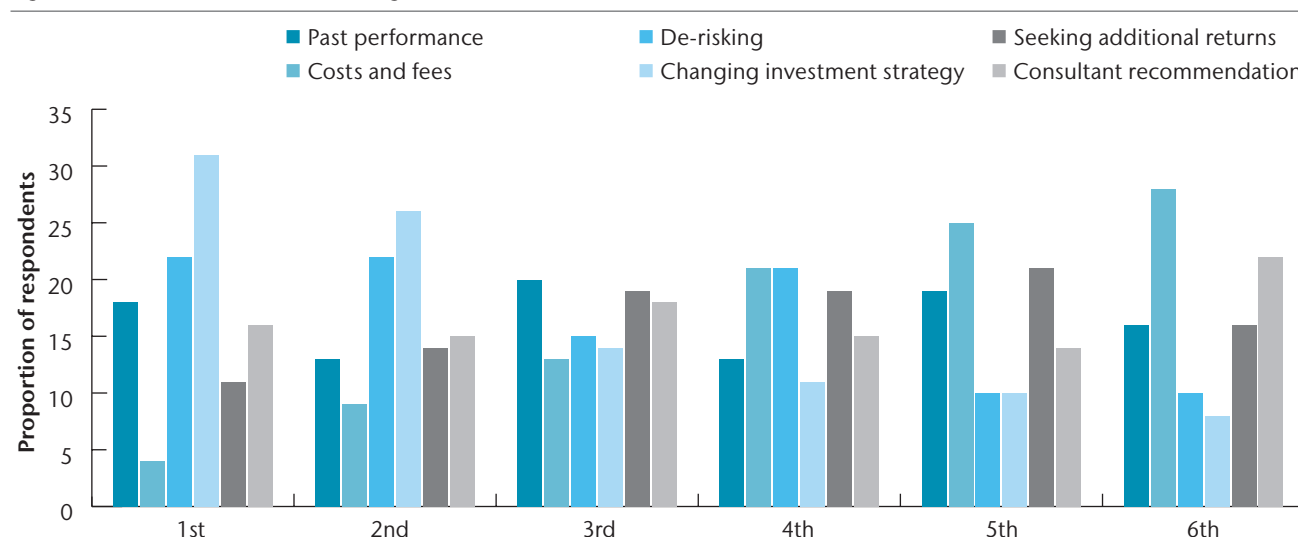


Figure 3b – How regularly does your scheme review the appointment of its investment managers? (By scheme size)



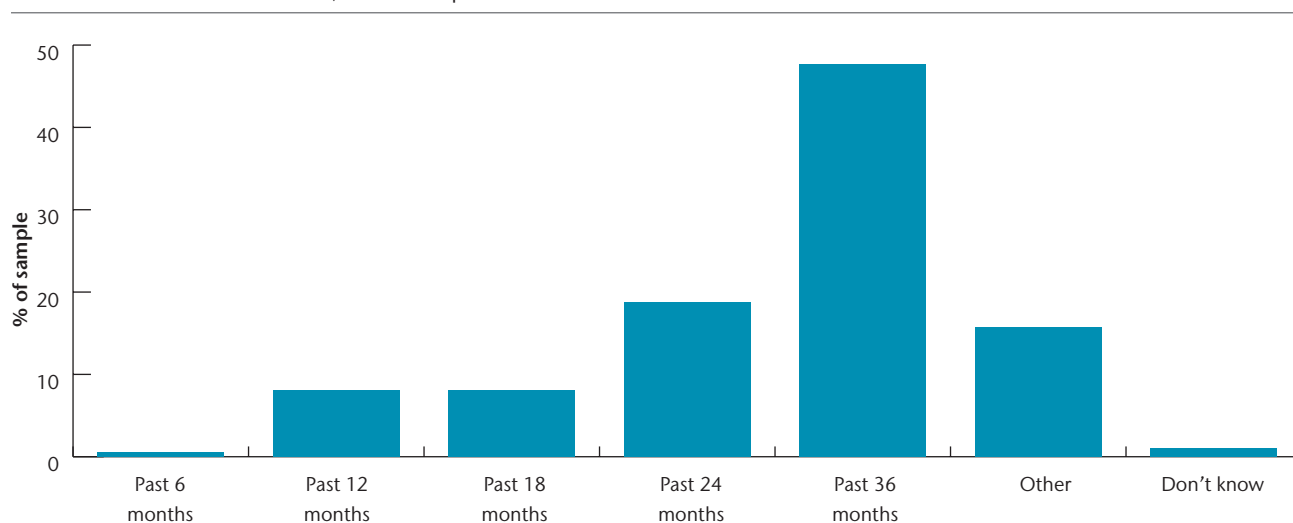
To understand why investment managers are reviewed, trustees were asked to rank six potential drivers of this. In looking at Figure 4, the biggest driver of reviewing investment managers is changing investment strategy, followed by de-risking. Interestingly, only 16% of respondents ranked consultant recommendation as their primary driver for review, and consultant recommendation has similar rankings in the second and third choices of respondents.

Figure 4 – Rank order of factors driving decisions to review investment mandates



The final question on the review of fund managers looked at past performance. As Figure 5 shows, 47% of trustees consider the previous 36 months of performance when reviewing fund managers. This indicates that trustees are aware that performance in fund management is delivered over longer periods. Further, in the second paper *Costs, Fees and Trustee Decision Making*, when asked to select funds based on performance, the majority of trustees picked funds with the best five-year performance, which is indicative of a longer-term view. That said, as Figure 5 shows, a small number of schemes look at much shorter horizon when assessing performance with 16 trustees (8%) of respondents applying a 12-month window.

Figure 5 – If you were thinking in terms of past performance when reviewing investment mandates, what time period drives this decision?



Trustees and investment consultants

The next part of this paper examines the role of investment consultants as trustees see it, and considers what trustees look for in their investment consultants, as well as the drivers of changing their investment consultants. As with fund managers, this is an area where very little is known and in light of the FCA's *Asset Management Market Study*, it is an important area for research.

As part of the wider investigation into trustee decision-making, the interviews with trustees included discussions on the role of investment consultants. Trustees were therefore asked 'How would you describe value in the investment consultant process?' In looking at the responses, there was a more diverse range of views as to what the role of the investment consultant is and what is valuable in the investment consultant process.

One view is that investment consultants have a limited role in the process and are there only to help with holding fund managers to account.

"Investment consultants are there for due diligence and performance measurement if they are good at this. They are there to hold mandates to account."

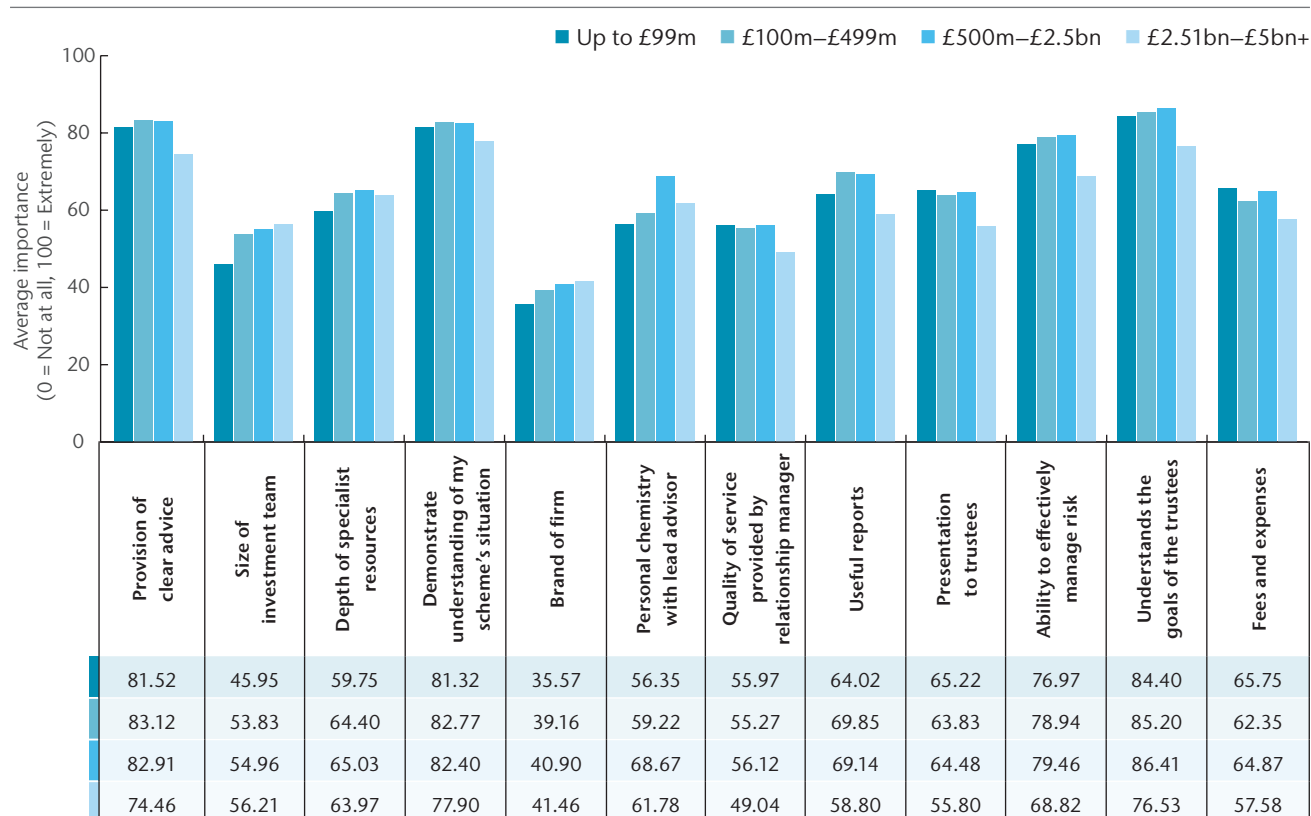
Independent trustee, small to mid-size schemes

One comment talked about the tailoring of advice to trustees. This raises the issue of how investment consultants and trustees engage with each other. Specifically, the trustee felt that the advice that was given was done in a manner to be acceptable to the trustees. From the data in Figure 6, it can be seen that understanding the goals of the trustees and the scheme's situation both ranked highly in how trustees understand value in investment consultancy. In examining this issue, it raises a key challenge for the provision of advice in circumstances where the goals of trustees and the beliefs of consultants clash⁶. It is not clear how trustees would respond to advice that conflicts with their beliefs, nor is it clear that investment consultants are able to have honest conversations with trustees about such issues.

"Investment consultants were very active in the discussions and meetings and came up with good ideas and explanations. Seemed to tailor their advice to what they thought trustees would accept and it was more reactive to the trustee questions rather than coming up with suggestions."

Member nominated trustee

Figure 6 – When selecting investment consultants, what factors are important in making this decision?



⁶ In trying to illustrate this there are clearly degrees of disagreement. One area where conflict may exist could be on de-risking. If both the trustees and consultant agree on de-risking, there could be sufficient disagreement as to the magnitude and pace of de-risking. The more challenging example would be where the investment consultant believes that de-risking should occur and the trustees do not want any de-risking.

The final two comments illustrate the role that scheme size may have. The first comment shows that the use of the investment consultant is very much a consultative one where the terms of engagement can be dictated by the fund.

"Investment consultants are a sounding board. They are an honest partner in the kicking of the tyres of what we do. We don't worry about beauty parades etc. Investment consultants and asset managers have been told 'when you have a top decile idea come and see us'. The problem of following all the ideas from the investment consultant is that it might be the right idea but the wrong implementation (timing)."

Chair of investment committee,
Large defined benefit scheme

The second is similar in tone, but highlights the strategic element of the relationship and suggests that more is demanded relative to the narrow role set out in the very first quote in this section.

"Independence is good but objectivity is key. No. 1 is understanding the scheme and the sponsor. No. 2 is working with you to assess different options. No. 3 is alerting you to opportunities. No. 4 is aiming to avoid surprises. They have to be able to present options clearly to the board to allow for good decision-making; this allows for objective thinking."

Chair of investment committee,
Large defined benefit scheme

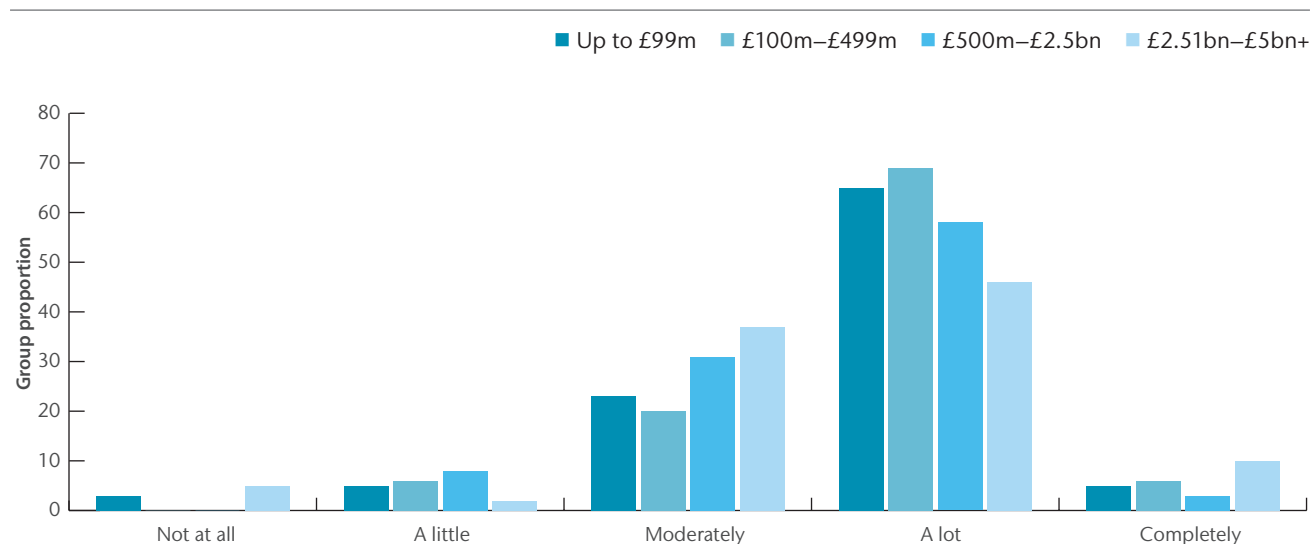
What do trustees look for in an investment consultant?

In looking at what trustees look for in an investment consultant, a number of key characteristics emerge. From Figure 6, the most important factors are common across all schemes regardless of size, although larger schemes generally rank these factors lower. Trustees therefore value; the provision of clear advice; understanding the scheme situation: understanding the goals of trustees; and the ability to help manage risk. For larger schemes, factors such as size of investment team; depth of specialist resource; and personal chemistry matter more than for smaller schemes while for smaller schemes reports and presentations to trustees are important, as are costs and fees.

The fact that there are factors across scheme size about managing risk; understanding the constraints that trustees are under; the position of the scheme; and the goals of the trustees, shows that these are the key areas that trustees focus on in trying to manage a pension scheme. Whereas the differing characteristics highlight the different needs of larger schemes and smaller schemes in terms of the expertise and resource that is required.

Figures 7a, 7b, and 7c examine some of the interaction that occurs between investment consultants and trustees. The picture is complex and has to be interpreted in conjunction with the tailoring of advice to the trustee situation and the trustees valuing an understanding of the scheme and the goals of trustees.

Figure 7a – How reliant on your investment consultants is your scheme?



From Figure 7a, it is clear that smaller schemes are much more reliant on their investment consultants than larger schemes. This is intuitive given the depth of resource and expertise that is often found in larger schemes. However, there are a small number of schemes (24) that say they are completely reliant on their investment consultant. This is across all sizes, which could be a concern.

From Figure 7b it can be seen that alternatives to the consultant recommendation are considered regularly. However, 19% of trustees do not really engage in any process of considering alternatives, which is not optimal for robust decision-making. In breaking these numbers down by scheme size, it is clear from Figure 7c that it is smaller funds that are not considering alternatives on a frequent basis. This result may therefore be driven by a lack of expertise or experience on the trustee board or a lack of resource to allow for alternatives to be considered, or it may be that the trustees of smaller schemes are less willing to challenge or critique the advice they are given.

Figure 7b – How often are the alternatives to the investment consultant’s recommendations considered?

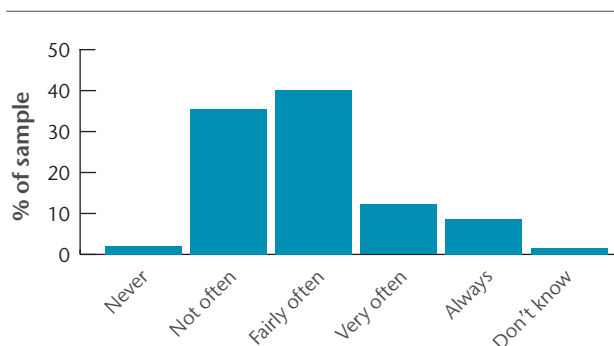
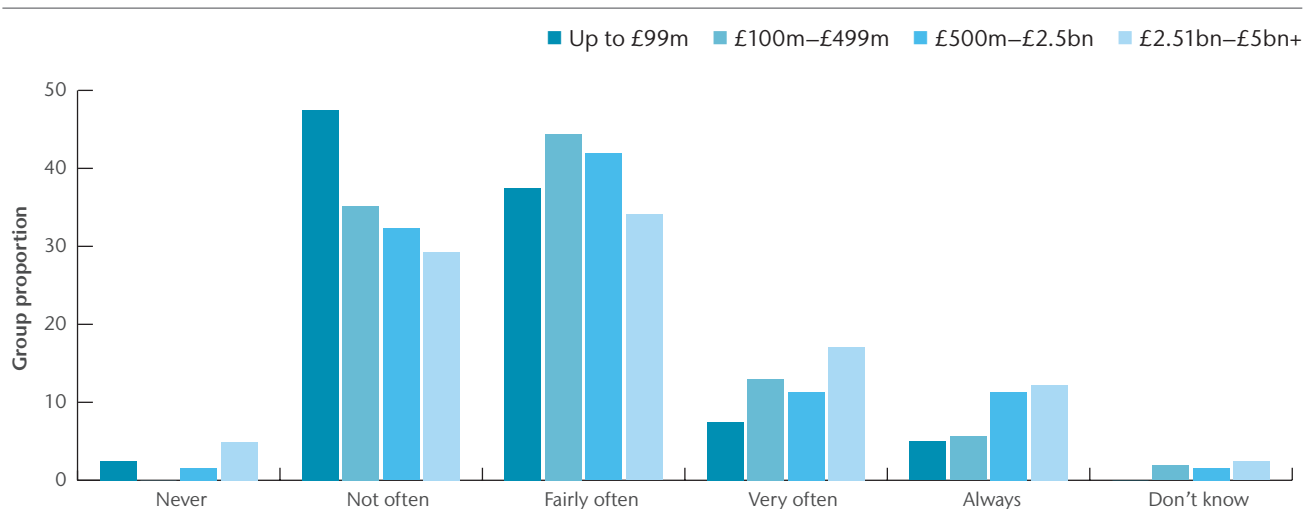
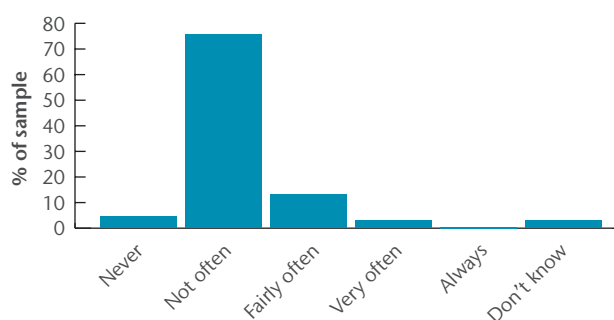


Figure 7c – How often are the alternatives to the investment consultants recommendations considered? (By scheme size)



The final part of the analysis looks at whether investment consultant recommendations are rejected. From Figure 8, it can be seen that the rejection of recommendations is rare, with 76% of respondents saying that rejection does not often occur. In addition, a key result from the second paper, *Costs, Fees and Trustee Decision-Making*, was that consultant recommendation was not as powerful as expected. When given a forward-looking recommendation on a set of funds, far fewer trustees switched to the highest-rated fund as had been expected.

Figure 8 – When it comes to investment decisions, how often do you reject the recommendations of your investment consultant?



These results may be in part due to the complex interactions between trustees and their investment consultants. As trustees look for an understanding of their goals and objectives, investment consultant recommendations are more than likely tailored to these goals. Moreover, if an investment consultant knows their client and their views on investment and so on, it is unlikely that they would recommend active management where they knew a trustee had a fundamental dislike of active management.

In combination, these results are interesting and start to shine a light on the dynamics that occur between trustees and their investment consultants. As noted above, one trustee suggested that they felt that the advice they were given was being tailored to their responses. In combination with trustees valuing understanding the goals of trustees, this is resulting in the tailoring of advice to the goals of trustees, and not necessarily what the investment consultant believes is the optimal strategy. From the perspective of decision-making, there is some evidence to suggest that the consultant recommendation is not as influential as expected. Crucially, while alternatives are considered, recommendations are rarely rejected as the choice set is being tailored.

Summary

This paper is the third in the series looking at the decision-making behaviour of trustees. From a behavioural standpoint, this paper aims to shed light on what value looks like for trustees in the fund management industry and what is seen as valuable in investment consultants. Crucially, the paper brings to light some of the complex interactions between trustees and investment consultants, which is key to understanding the behavioural setting in which decisions are made.

In looking at fund management, trustees are focused on risk-adjusted performance. Moreover, they have a longer-term view with respect to investment performance and reviewing mandates. This is again consistent with the view that trustees focus on strategy first. Moreover, trustees are regularly reviewing both their investment strategy and their investment managers. Interestingly, there are differences between large schemes and small schemes when it comes to what factors are important in manager selection. Trustees of larger pension schemes place more emphasis on investment philosophy, decision-making and risk management, while trustees of smaller schemes place greater emphasis on past performance, costs and fees, fund size, firm size and volatility.

In looking at what trustees look for in their investment consultants, the picture was much more mixed, with a range of views emerging from a service provider with limited remit, to a sounding board for trustees to road-test ideas with. However, there were a number of key characteristics trustees looked for in their investment consultants regardless of scheme size. All trustees valued the provision of clear advice, understanding the situation or the scheme and the goals of trustees and risk management. However, for smaller schemes, useful reports and presentations were important but for larger schemes, the size of the investment team, depth of specialist resource and personal chemistry were important.

Last, the interactions between trustees and consultants are complex. Trustees have specific goals and objectives in mind and investment consultants therefore operate within those constraints. From one of the interviews, trustees suggested that they felt that the advice they were given was being tailored to their responses. In combination with trustees valuing an understanding of the goals of trustees and the scheme situation, this is resulting in the range of options considered being limited to the goals of trustees, and not necessarily what the investment consultant believes is the optimal strategy.

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Research team



Dr Iain Clacher is currently an Associate Professor in Accounting and Finance at Leeds University Business School and he is the co-director of the Centre for Advanced Studies in Finance. His main research interests focus on: pensions and retirement saving decisions, pension investment and infrastructure, and sustainable pension systems. As well as his academic activities, Iain has a number of external appointments, including involvement in a number of working parties for the UK Actuarial Profession, and he is currently the co-chair of the Profession's cross-practice working party on behavioural economics for actuaries. Iain has also advised a range of organisations including; FTSE 100 Companies, The CERN Pension Fund, The City of London Corporation, The Work Foundation, and The Pensions and Lifetime Savings Association.



Dr. Simon McNair is currently a Leverhulme Early Career Research Fellow based at the Centre for Decision Research at Leeds University Business School. Simon's academic background is in the psychology of judgement and decision-making, with particular focus on how individual differences in cognitive and emotional characteristics affect people's financial behaviour. Simon has produced research with various organisations including Grant Thornton UK LLP, Citizens Advice Bureau, and Suitable Strategies on topics such as developing more effective debt advice policies and procedures; and understanding the psychological components of financial capability.



Dr. Richard Edgar Hodgett is a lecturer in Business Analytics and Decision Science who teaches BSc and MSc students material on data pre-processing, statistics, machine learning, artificial intelligence, big data systems, cloud computing, network graphing, optimisation and forecasting. Richard works on various different multi-disciplinary analytical projects and supervises a number of MSc and PhD students. Before joining the University of Leeds, Richard worked as an Innovation Specialist developing an electronic innovation toolkit that is now used by some of the world's leading industrial companies. Prior to this Richard was awarded his Ph.D. from Newcastle University where he developed a software tool for analysing complex decision problems in whole process design.

Contacts

Aon Hewitt

John Belgrove, Senior Partner
Consulting | Global Investment Practice
+44 (0)20 7086 9021
john.belgrove@aonhewitt.com

Tim Giles, Head of UK Investment Consulting
Consulting | Global Investment Practice
+44 (0)20 7086 9115
tim.giles@aonhewitt.com

Lynda Whitney, FIA, Partner
Consulting | Retirement Practice
+44 (0)1372 733 617
lynda.whitney@aonhewitt.com

Leeds University Business School

Dr Iain Clacher,
Associate Professor in Accounting and Finance
Deputy Director of the Centre for Advanced Studies
in Finance (CASIF)
+44 (0)113 343 6860
i.clacher@lubs.leeds.ac.uk

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Registered Office:
The Aon Centre
The Leadenhall Building
122 Leadenhall Street
London EC3V 4AN

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Louisiana Trustee Education Council
49 Inlet Drive, Slidell, Louisiana 70458

November 22, 2017

Dear Pension Fund Trustee/Staff Member:

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Peggy Melancon, Executive Assistant
Louisiana Trustee Education Council (LATEC)

Once again, it is that time of year to plan your trustee educational endeavors for the new year. With that in mind, it is my pleasure, on behalf of the Board of Directors of LATEC (Louisiana Trustee Education Council) to invite you to attend the **14th Annual LATEC/Opal Investment Education Symposium (IES)**.

As always, the IES is being held in New Orleans, LA the week preceding Mardi Gras. The dates of the conference are February 7-9, 2018 at our new and exciting venue, **The Royal Sonesta Hotel**. The Sonesta is one of New Orleans' premiere upscale French Quarter hotels. The Royal Sonesta offers every amenity, including a balcony overlooking Bourbon St., and providing whatever any guest could possibly desire. Management and staff at the Sonesta have expressed their commitment and eagerness to make the 2018 LATEC/Opal IES the best ever. Link to hotel <https://www.sonesta.com/us/louisiana/new-orleans/royal-sonesta-new-orleans>

In keeping with our usual policy, all trustees/staffs of all Louisiana-based Pension Funds will receive complimentary registration to the event. A block of government-rate rooms has been secured and are available on a first come/first served basis until they are all booked, then regular room rates apply.

Finally, in keeping with the theme of trustee education, hourly credits in investment training, actuarial science, and fiduciary responsibility and ethics will be awarded at the end of the conference for attendance at the various educational sessions. Enclosed with this letter you will find additional details and a form to request more information about the 2018 LATEC/Opal Investment Education Symposium or feel free to visit LATEC's website: www.louisianatrustees.org

Please make plans to join us in New Orleans for an exciting educational conference and to enjoy the spirit of Mardi Gras!

Sincerely,

Frank L. Jobert, Jr., Executive Director

The Louisiana Trustee Education Council
(LATEC) and Opal Group present the

14th Annual
**INVESTMENT
EDUCATION
SYMPOSIUM**

February 7-9, 2018
Royal Sonesta New Orleans, New Orleans, LA

This event will provide key information on investing, fiduciary responsibility and selection of money managers for decision makers and other representatives of the nation's largest pension funds, endowments and foundations. Investors will come from across the country not just to network but also to learn from leading fund managers, consultants and asset managers.

LATEC sponsored education credits available for this event:

(8) hours of Investment Training

(1) hour of Actuarial Science Information

(2) hours of Fiduciary Duty and Ethics

Join us, Wednesday evening, February 7 from 6:00 – 8:00 pm, and unwind with fellow industry professionals for refreshments, dinner, dancing and live music during our **Annual Mardi Gras Bash**.

LATEC, 49 Inlet Drive, Slidell, LA 70458 - (p) 985-643-8393 - (c) 504-289-9424 - (f) 985-645-9259
www.louisianatrustees.org - frankjobert@aol.com

