COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM

Public Investment Memorandum

Apollo Investment Fund IX, L.P.

Special Situations Commitment

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Portfolio Manager

May 2, 2017

Recommendation:

Staff, together with Portfolio Advisors LLC, recommends the Board commit up to $250 million to Apollo Investment Fund IX, L.P. (the "Fund", or "Fund IX"). Apollo Global Management, LLC ("Apollo" or the "Firm") is seeking to raise Fund IX to continue the Firm's flexible investment strategy; focused on investing in strong, franchise assets through opportunistic buyouts and build-ups, corporate carve-outs and distressed investments.

Firm Overview:

Founded in 1990, Apollo is a global alternative investment manager with ~$192 billion of assets under management across three business segments (private equity, credit and real estate) as of December 31, 2016. Apollo has 986 employees, with offices in New York, Los Angeles, Houston, Chicago, Bethesda, Toronto, London, Frankfurt, Madrid, Luxembourg, Mumbai, Delhi, Singapore, Hong Kong and Shanghai. The Firm is led by its three managing partners, Leon Black, Joshua Harris and Marc Rowan, who have worked together for nearly 30 years and lead a seasoned team of 376 investment professionals. Apollo is a publicly traded company, which trades as "APO" on the New York Stock Exchange. The table below summarizes Apollo's AUM and strategic focus by business segment as of December 31, 2016:

Segment	AUM[1]	Focus	
Private Equity	$43.6 billion	• **Opportunistic Buyouts** • **Distressed Investments**	• **Corporate Carve-Outs**
Credit	$136.6 billion	• Performing Credit • Liquid Opportunistic • Illiquid Opportunistic • European Principal Finance	• Private Origination • Structured Credit • Athene (Insurance / Annuities)
Real Estate	$11.5 billion	• Residential & Commercial • PE & Distressed	• Performing Fixed Income

(1) Assets Under Management ("AUM") – refers to the investments Apollo manages or with respect to which Apollo has control, including capital Apollo has the right to call from its investors pursuant to their capital commitments to various funds.

Market Opportunity:

The current private equity investment environment is facing a number of headwinds including: (1) systemically muted global growth; (2) unprecedented liquidity lifting the markets; (3) private equity valuations at all-time highs; (4) an ageing economic recovery; and (5) a credit default cycle approaching its historical duration. Against this challenging backdrop, it is important that prospective investment managers have the potential to source compelling investment opportunities at below-market prices that are idiosyncratic in nature. Apollo's investment strategy is predicated on a contrarian, value-oriented approach; seeking to generate superior risk-adjusted rates returns across all economic cycles by investing in high quality companies at discounts to market prices.

Valuations in the U.S. remain elevated, at 10.3x EBITDA, a post-crisis peak. This has led Apollo to pursue value-oriented transactions, most of which have been complex corporate carve-outs and opportunistic buyouts to date in their prior fund, Apollo Investment Fund VIII, L.P. ("Fund VIII"); to which PSERS previously committed $220 million in 2013. While a significant and sustained distressed opportunity has not materialized during Fund VIII's investment period to date, given the U.S. economy is in its eighth year of recovery (the fourth longest since the 1850s), with the U.S. Federal Reserve poised to continue raising interest rates the near/medium-term, Apollo anticipates increased distressed opportunities to be available for Fund IX. Given this dynamic, Apollo believes it is prudent to underwrite investments assuming the possibility of a near-term recessionary environment.

Valuations in Europe are even higher than in the U.S., at 10.4x, which is surprising given the region's tepid growth. Despite the European Central Bank's aggressive expansionary monetary policy initiatives, they continue to see a relatively weak macro environment in Europe. In contrast to the U.S., where growth is projected to continue to exceed 2% annually in the coming years, growth in Europe remains muted, at ~1.5% over the next two years, with low inflation and persistently high unemployment. As such, Apollo believes there is a clear thematic investment opportunity to capitalize on the distress in the European financial system. For Apollo's private equity business, this opportunity includes taking meaningful or controlling stakes in financial institutions, buying operating subsidiaries such as banks or insurance companies, or recapitalizing troubled banks to earn attractive rates of return. Additionally, Fund VIII has selectively deployed capital in attractive European corporate carve-out opportunities and Apollo anticipates continuing to seek such value-oriented opportunities with a favorable risk/reward.

Portfolio Fit:

A commitment to Fund IX will be allocated to the Special Situations sleeve of PSERS' Private Markets portfolio. As of September 30, 2016, the Private Markets portfolio was allocated 70% Private Equity, 14% Special Situations, 12% Venture Capital and 4% PE Internal (based on total exposure and including post Q3'2016 pending/closed commitments). The table below summarizes PSERS' projected Private Markets exposure inclusive of a recommended $250 million commitment to Fund IX:

Investment Type ($mm)	Active Commitments[1]	%	Market Value	%	Unfunded[1]	%	Total Exposure[1]	%
Private Equity	$ 15,438.6	66.3%	$ 5,449.1	66.9%	$ 3,804.6	70.3%	$ 9,253.6	68.2%
Special Situations	4,651.1	20.0%	1,179.2	14.5%	936.3	17.3%	2,115.5	15.6%
Venture Capital	2,769.2	11.9%	1,004.6	12.3%	600.5	11.1%	1,605.1	11.8%
PE Internal	431.3	1.9%	517.6	6.4%	68.8	1.3%	586.4	4.3%
Total	$ 23,290.2	100.0%	$ 8,150.4	100.0%	$ 5,410.1	100.0%	$ 13,560.6	100.0%

(1) Include post Q3'2016 pending/closed commitments.

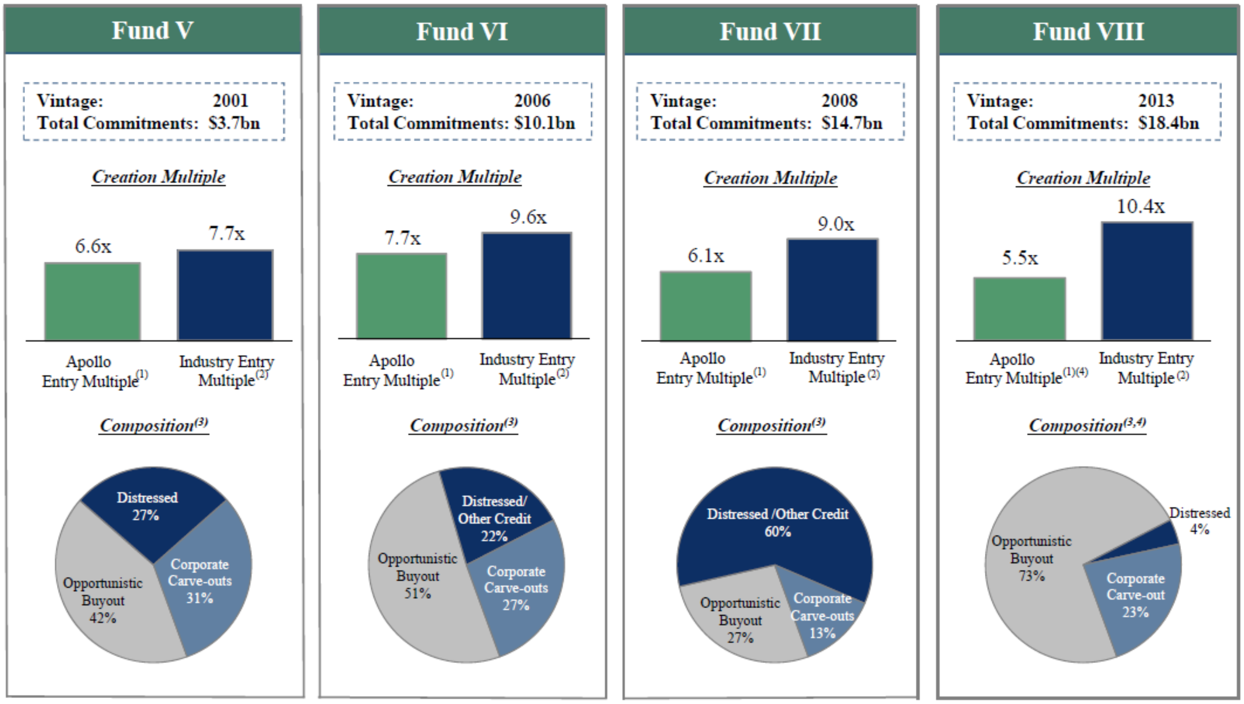
A commitment to Fund IX will allow PSERS to continue its relationship with a high-conviction manager that is well positioned to generate strong investment performance across market cycles. The Fund's return target is in-line with PSERS' objective of generating mid-teen plus net returns over the life of the Fund.

Investment Strategy:

Apollo relies on a contrarian, value-oriented approach and seeks to achieve strong risk-adjusted returns across market cycles. Apollo is focused on investing in strong, franchise assets through: (1) opportunistic buyouts and build-ups (in many cases in out of favor companies and industries); (2) corporate carve-outs; and (3) distressed investments. In terms of geographic focus, Fund IX will primarily invest in North America and Western Europe. In terms of industry focus, Apollo has developed extensive industry expertise in the following sectors: (1) financial services; (2) business services; (3) consumer services; (4) chemicals; (5) natural resources; (6) consumer and retail; (7) leisure; (8) manufacturing and industrial; and (9) media and telecom. Apollo seeks to capture significant value at acquisition through sourcing most of its investments in a proprietary manner. Apollo intends to build a diversified portfolio of 25 – 35 investments that require ~$300 million to $1.5 billion of equity per deal, with three to five-year average holding periods.

The ability of Apollo's funds to invest up and down the balance sheet of a company is a key tenet of the Firm's investment philosophy. By remaining nimble and opportunistic, Apollo believes it is able to focus on the optimal entry point for an investment and identify where the best value may lie at any given time in a market cycle. Post-acquisition, the Firm focuses on creating value on both the left side (asset side) and the right side (liabilities side) of the balance sheet through such means as enhancing management and working with management in generating cost and working capital savings, reducing capital expenditures, optimizing capital structures, identifying and executing strategic acquisitions, and developing a strategic direction going forward. Lastly, Apollo will seek to optimize value at exit by pursuing various realization methodologies.

Apollo seeks to be opportunistic in its investment strategy across its three primary pathways, depending on the prevailing market environment and attractive, value-oriented opportunities with the optimal risk/reward across investment types, as detailed in the chart below. It is also important to note Apollo's declining entry multiple versus the industry average for each of their last three funds.



Note: As of December 31, 2016, pro forma for investments subsequent to quarter-end. Composition of pie charts is based on Total Invested Capital as per our initial investment strategy at time of acquisition. Past performance is not indicative of future results. (1) Creation multiples may incorporate pro forma or other adjustments based on investment team's estimates and/or calculations. (2) Source: S&P LCD database. (3) The distressed investment strategy includes distressed for control, non-control distressed and other credit. (4) Pro forma for investments and commitments subsequent to quarter-end.

Apollo seeks to be opportunistic in exiting investments once the Firm has determined its value creation initiatives have been realized and its investment thesis has largely played out. Maintaining flexibility in various market conditions has allowed Apollo funds to leverage both the public and private markets in order to generate value for investors, capitalizing on strong valuations in the public markets, as well as the re-entry of strategic buyers seeking growth amidst a modest growth environment, fueled by low-cost financing. The Firm's value orientation, in "buying right," proves a valuable asset upon exit, where the Firm believes it is able to benefit from multiple expansion relative to its funds' initial purchase price to maximize value.

Investment Structure:

Capital structure optimization and financial flexibility are key elements of Apollo's value-creation strategy and the Firm continually seeks the optimal balance of risk mitigation with upside potential. Apollo will generally seek to employ portfolio company-level leverage prudently in its funds' investments to enhance return potential. In order to incorporate leverage, Apollo first undertakes a significant amount of due diligence to ensure that the business is capable of supporting debt financing. Apollo places a significant emphasis on capital preservation and mitigating downside risks. This is demonstrated by the Firm's focus on: (1) investing in franchise assets at what it views as below-market multiples; (2) using a hands-on approach to protecting and building value in portfolio companies, and (3) building in structural protections. Aside from managing the overall debt level, key capital structure attributes include: (1) more bonds vs. bank debt; (2) few or no covenants; and (3) long dated capital structures. If a company is properly capitalized with sufficient liquidity, Apollo believes that the company will be well-positioned to withstand market downturns. Apollo seeks to generate ~25% gross returns for the Fund, resulting in fund-level net returns of ~20%.

Investment Instruments:

The table below provides a summary of the principal investment instruments the Fund will use to implement its three-prong investment strategy:

Strategy	Description
Opportunistic Buyouts and Build-Ups	In an opportunistic buyout, Apollo buys a controlling share of equity in a business. The equity can either be publicly traded or privately owned at the time of the transaction. Build-ups are defined as strategies that involve multiple opportunistic buyouts over time whereby Apollo merges the acquired businesses with the intention of creating additional value in the combined entity. In a Natural Resources build-up, Apollo seeds operating executives to source and buy assets in an aggregation strategy across multiple transactions over a certain period of time.
Corporate Carve-Outs	Apollo enters into bi-lateral negotiations with a larger corporate parent to extract a business in order to create a stand-alone enterprise in which its funds can invest. Typically, a carve-out transaction will require developing significant infrastructure around the acquired business to enable it to thrive as a new stand-alone company.
Distressed Investments	Apollo buys corporate loans and/or bonds with the goal of gaining blocking/controlling positions in order to effectuate a restructuring and eventually convert those loan/bond positions into a controlling equity stake.

Investment Team:

Apollo is led by its three managing partners, Leon Black, Joshua Harris and Marc Rowan, who have worked together for 30 years. Scott Kleinman, who has been at the Firm for 21 years, serves as lead partner overseeing the Firm's private equity business. The Firm's senior partners in the private equity business have worked together on average for 17 years and are supported by a team of seasoned investment professionals (Apollo's private equity investment professionals include 3 Managing Partners, 22 Senior Partners, 10 Partners, and a robust team of Principals and Associates) and operating executives who possess a broad range of transactional, financial, managerial and investment skills. The Firm's 20+ operating executives are generally exclusive to Apollo, but are not employees of the Firm.

The Firm takes a consensus-oriented, Socratic approach towards its weekly Investment Committee ("IC") meeting, whereby the collective knowledge of the investment professionals is maximized and a variety of perspectives are considered as an investment opportunity proceeds through the various stages of approval. The Firm's investment partners comprise the IC. A final investment decision requires the approval of the Firm's Executive Committee composed of the Firm's three managing partners. While participating investment professionals do not necessarily have an explicit veto right, in practice, should any team member raise serious objections to proceeding with an investment, the Fund would likely not proceed with the investment. Apollo's senior private equity investment professionals are listed below:

Name (Office Location)	Title	Total Years at Apollo	Total Years of Relevant Experience	Previous Professional Experience
Leon Black (NYC)	Managing Partner	26	41	Drexel Burnham Lambert Incorporated
Joshua Harris (NYC)	Managing Partner	26	30	Drexel Burnham Lambert Incorporated
Marc Rowan (NYC)	Managing Partner	26	32	Drexel Burnham Lambert Incorporated

Name (Office Location)	Title	Total Years at Apollo	Total Years of Relevant Experience	Previous Professional Experience
Scott Kleinman (NYC)	Lead Partner, Private Equity	21	23	Smith Barney, Inc.
Gregory Beard (NYC)	Senior Partner	6	21	Riverstone Holdings
Marc Becker (NYC)	Senior Partner	21	23	Smith Barney, Inc.
Laurence (Larry) Berg (Los Angeles)	Senior Partner	24	27	Drexel Burnham Lambert Incorporated
Peter Copses (Los Angeles)	Senior Partner	26	34	Drexel Burnham Lambert Incorporated
Andrew (Andy) Jhawar (London)	Senior Partner	17	22	Donaldson, Lufkin & Jenrette Securities Corporation
Gernot Lohr (London)	Senior Partner	10	20	Infinity Point LLC
Steve Martinez (Hong Kong)	Senior Partner	17	23	Goldman Sachs & Co.
Lance Milken (Los Angeles)	Senior Partner	18	19	Milken Institute
Matthew (Matt) Nord (NYC)	Senior Partner	13	15	Smith Barney, Inc.
Sanjay Patel (London)	Senior Partner	7	26	Goldman Sachs& Co.; Greenwich Street Capital
Eric (Rick) Press (NYC)	Senior Partner	18	26	Wachtell, Lipton, Rosen & Katz
David Sambur (NYC)	Senior Partner	12	14	Smith Barney, Inc.
Robert Seminara (London)	Senior Partner	14	24	Evercore Partners
Imran Siddiqui* (NYC)	Senior Partner	8	18	Oak Hill Capital
Justin Stevens (NYC)	Senior Partner	13	14	Deutsche Bank
Aaron Stone (NYC)	Senior Partner	19	21	Smith Barney, Inc.
Geoffrey Strong (NYC)	Senior Partner	4	17	Blackstone Group
Gareth Turner (NYC)	Senior Partner	11	29	Goldman Sachs & Co.
Rakesh Wilson (NYC)	Senior Partner	8	17	Morgan Stanley
Mintoo Bhandari (Mumbai)	Senior Partner, AION	10	27	The View Group
John Bookout (Houston)	Partner	1	35	KKR
Kevin Crowe (London)	Partner	10	12	Deutsche Bank
Samuel Feinstein (NYC)	Partner	9	11	Morgan Stanley
Michael Jupiter (NYC)	Partner	12	12	Goldman Sachs & Co.
Matthew Michelini (NYC)	Partner	10	12	Lazard Freres & Co. LLC
Trevor Mills (NYC)	Partner	5	23	Rio Tinto
Antoine Munfakh (Los Angeles)	Partner	8	12	Court Square Capital Partners
Fabrice Nottin (London)	Partner	5	13	Lion Capital
Lee Solomon (NYC)	Partner	5	20	The Weinstein Company
Utsav Baijal (Mumbai)	Partner, AION	9	16	Bain Capital

**Departing June, 2017*

Investment Highlights:

Differentiated, Flexible Investment Strategy
Apollo relies on a flexible investment approach to execute its value-oriented, contrarian strategy. In addition, it relies on its industry specialization, willingness to tackle complexity, scale of capital and focus on downside protection to capture value at acquisition and generate attractive risk-adjusted rates of returns. Apollo is able to quickly adapt to changing market environments through its flexible investment approach, centered around three primary pathways, including opportunistic buyouts and build-ups, corporate carve-outs, and distressed investments. By creating multiple avenues through which to enter an investment, Apollo believes it can focus solely on where the best risk/reward lies at any given point in time, which is particularly beneficial when traditional financing markets are closed or during periods of market dislocation.
Strong Historical Private Equity Track Record Across Market Cycles
From its inception in 1990 through December 31, 2016, Apollo has invested $35.1 billion across its historical private equity funds (Funds I – VII, not including Fund VIII) and has generated a total value of $84.2 billion, of which $77.4 billion has been returned to its fund investors. Over the same time period, Apollo's historical private equity funds generated a gross IRR of 39% (25% net) and a gross multiple of 2.4x (2.2x net). Note, the gross and net multiple figures listed above are net recycling/recallable distributions given Apollo's focus on debt investments and early return of capital by its funds.
Demonstrated Distressed Investment Expertise
Apollo's 25+ years of value-oriented distressed investment experience distinguishes them from many other private equity firms. During recessionary markets, Apollo remains active, executing on investments in opportunities that seek to capitalize on market dislocation. Apollo believes distressed investing requires a specific investment skill-set and mentality, centered on a fundamental understanding of credit markets, bottom-up analysis, deep sector knowledge, ability to navigate complex legal situations, and strength of conviction amidst tumultuous environments, which is substantially different than a growth-oriented "traditional LBO" approach. Since inception, Apollo's funds have invested $13.2 billion in this strategy, generating a gross IRR of 49% and a gross MOIC (multiple of invested capital) of 2.0x across realized and unrealized investments as of December 31, 2016. Given the aging economic recovery, potentially rising interest rates, and geopolitical uncertainty, Apollo anticipates that distressed opportunities will be available to Fund IX.
Breadth & Experience of Investment Team
Apollo is led by its three managing partners, Leon Black, Joshua Harris and Marc Rowan, who have worked together for 30 years. Scott Kleinman, who has been at the Firm for 21 years, serves as lead partner overseeing the Firm's private equity business. The Firm's senior partners in the private equity business have worked together on average for 17 years and are supported by a team of seasoned investment professionals and operating executives who possess a broad range of transactional, financial, managerial and investment skills. Overall, Apollo's private equity funds benefit from the Firm's 105 investment professionals focused on private equity. While this team has experienced turnover at the Senior Partner/Partner level (eight departures during Fund VIII's investment period), some level of turnover is to be expected given the large team and multiple reasons for departure (i.e. retirement, performance, personal, etc.). Furthermore, current partners are responsible for leading all of Fund VIII's investments.
Integrated Apollo Platform / Capital Markets Expertise
Apollo operates its global franchise as an integrated investment platform, where each business contributes to and draws from the intellectual capital and experience of the other businesses. In particular, Apollo's private equity business benefits from its integration with the Firm's credit business, which is one of the largest alternative credit managers in the industry (AUM of $136.6 billion). This relationship provides a competitive advantage to Apollo's private equity business in helping to source opportunities, particularly as it relates to identifying distressed investments, facilitate deal execution and optimize overall structures at acquisition and exit. As an extension of the Firm's capital market expertise, Apollo established a dedicated broker-dealer, Apollo Global Securities, LLC ("AGS"). Over the past several years, AGS has become an integral component of the investment team's investment process and helps to create incremental value for our funds' portfolio companies. Given changes in the regulatory environment for banks following the financial crisis, AGS plays an important role in how they create capital structures for their private equity funds' portfolio companies across market cycles.

Investment / Risk Considerations:

Potential Headline Risk
Given Apollo's contrarian, value-oriented strategy (as it particularly relates to distressed investments and corporate carve-outs), it is not unusual for Apollo to attract negative media coverage. In distressed investments, Apollo typically buys corporate loans and/or bonds with the goal of gaining blocking/controlling positions in order to effectuate a restructuring and eventually convert those loan/bond positions into a controlling equity stake. In corporate carve-outs, Apollo typically enters into bi-lateral negotiations with a larger corporate parent to extract a business in order to create a stand-alone enterprise in which its funds can invest. Unfortunately, there is no real mitigant to this risk. However, Apollo has always been very transparent with PSERS regarding these matters and as an advisory board member, PSERS benefits from an added level of disclosure.

PSERS History & Performance:

Since 2012, PSERS has committed $620 million to three Apollo-managed partnerships. PSERS previously committed $220 million to Apollo Investment Fund VIII, L.P. ("Fund VIII"), $200 million to Apollo European Principal Finance Fund II (Dollar A), L.P. ("EPF II") and $200 million to Apollo European Principal Finance Fund III (Dollar A), L.P. ("EPF III"). As it relates to performance of Fund VIII, note that Fund VIII completed its first investment in December 2013, and is a relatively young fund with an average holding period across its investments of less than one and a half years, with meaningful value creation still to come.

The table below summarizes PSERS' performance as of December 31, 2016:

Fund ($mm)	Portfolio	Vintage	Commitment	Contributions	Distributions	NAV	Net IRR	Net MOIC
Fund VIII	SS	2013	$ 220.0	$ 130.2	$ 10.6	$ 137.0	11.5%	1.13x
EPF II	HY	2012	$ 200.0	$ 253.7	$ 119.5	$ 177.8	10.1%	1.17x
EPF III	HY	2017	$ 200.0	-	-	-	-	-
Total (Apollo)			**$ 620.0**	**$ 383.9**	**$ 130.1**	**$ 314.8**	**10.4%**	**1.16x**

Finance Committee Disclosure:

Relationship with Portfolio Advisors, LLC:	Apollo EPF Fund I	PAPEF V:	$15mm
	Apollo EPF Fund I	PAPEF VI:	$13mm
	Apollo EPF Fund II	PAPEF VII:	$18mm
	Apollo Investment Fund VI	PAPEF III:	$15mm
	Apollo Investment Fund VII	PAPEF V:	$10mm
	Apollo Investment Fund VIII	PAPEF VII:	$15mm
	Apollo Investment Fund IX	PAPEF IX:	$15mm
Introduction Source:	Fund Sponsor		
Placement Agent:	None for PSERS. Fund IX has engaged two placement agents to provide advice and general fundraising services for Fund IX, only where required for regulatory or jurisdictional mandates (Asia and Latin America), and in relation to private banking platforms.		
PA Political Contributions:	None Disclosed		
PA Presence:	Yes		
Potential Conflicts:	We are not aware of Apollo having any investment conflicts.		
First Time Fund With PSERS:	No		
PSERS AIC Approval:	May 1, 2017		

Oversight Responsibility:

Investment Office:	Charles J. Spiller James F. Del Gaudio	Deputy CIO, Non-Traditional Investments Portfolio Manager
External Consultant:	Portfolio Advisors, LLC	